POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

(98-33)

HEARINGS

BEFORE THE

SUBCOMMITTEE ON WATER RESOURCES

OF THE

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PUBLIC WORKS AND TRANSPORTATION
HOUSE OF REPRESENTATIVES

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POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

WEDNESDAY, FEBRUARY 23, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:10 a.m., in room 2167, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen.

The Subcommittee on Water Resources will come to order. Today the Subcommittee on Water Resources is having the first of 15 days of hearings on the Environmental Protection Agency's proposed changes to regulations governing the methods States may use in setting water quality standards. Today we will be hearing from the EPA. The additional hearings will be for outside witnesses and the date for that will be established as soon as practicable in the future.

The proposed regulations we will be hearing about today have received a great deal of attention. They are important because water quality standards will have an increasing role in the water pollution program as EPA finishes its work in establishing effluent limitations guidelines.

The proposal has raised some concerns in a number of quarters, and we are having these hearings to give an opportunity for EPA to describe the proposal and to permit other parties to present their views for the consideration of the committee.

We will want to see whether the program EPA is contemplating is consistent with the objective of the Federal Water Pollution Control Act and whether the States are adequately equipped to carry it out.

The subject of water quality standards has an important bearing on many other issues in the water quality program which we will be examining as a part of our consideration of possible amendments to the act this year. However, today we will be focusing specifically on the water quality standards proposal. We will not attempt to get into all the other issues that we will be examining as a part of our hearings on possible amendments later on.

We are pleased to have with us today Mr. Frederic A. Eidsness, Assistant Administrator for Water at EPA. Before we hear from Mr. Eidsness, however, I would like to defer to my good friend, the

ranking member of this subcommittee, the Hon. Arlan Stangeland, in principle.

Mr. STANGELAND. Thank you. I am pleased to join our colleagues this morning to hear from EPA on the agency's proposed water quality standards regulations. Our national water quality management program is extremely important to the American people, and no subject could be more appropriate for this morning's hearing than what EPA envisions the water quality standards to be in that program.

I would like to welcome Mr. Eidsness back to the subcommittee again and to express my personal disappointment that John Hernandez is unable to be with us because of illness. I hope you will convey to him our wishes for a quick recovery.

Mr. Chairman, both Mr. Eidsness and Dr. Hernandez appeared before the subcommittee on a number of occasions over the past 2 years, and I believe have established a good working relationship over here that we will be able to build upon this Congress.

While we have not always been able to agree upon every issue, I think we have at least been able to discuss Clean Water Act issues in an open, forthright manner. When business is done this way, honestly, openly, and on the record, the strong factual underpinning and philosophical competition of ideas that are needed to make good public policy become a part of the legislative history supporting our actions. I think that is what the process of government is all about.

Before we begin I would like to compliment you, Mr. Eidsness, on a very fine statement and suggest to our newer members that the long statement be studied in some depth. Issues related to water quality standards are fundamental to understanding the statutory scheme set out in the Clean Water Act and the longer statement does an excellent job, in my view, of explaining what water quality standards are, how they operate, and what the agency intends to accomplish in its new regulations.

My only regret is that we didn't have copies of it earlier so more studies could be done before this hearing.

Mr. Chairman, I have used up more than my share of time. It is not me we have come to hear from but Mr. Eidsness. Charles de Gaulle is reported to have said, "One measure of genius is an individual's ability to sustain a great debate."

If that is correct, we have evidence of a true genius testifying this morning because some of these proposed regulations have prompted significant debate. They have very strong supporters and equally convinced opponents. I look forward to receiving and discussing this testimony here this morning.

Mr. ROE. My gracious, thank you very much.

On that score, maybe we should rest our case. Thank you for that very fine opening statement, Arlan, and I feel that sums up what our feeling is.

We have prepared a statement in depth and I have requested the staff to pass it out. I think what is important, before we call our witnesses, is that a number of new members get a definite understanding as to precisely what our interpretation of the 1972 law is. I think your statement speaks to that issue. We can make additional copies to pass out. I do want to pay my personal regards and re-

spects, highest regards to Ray Roberts, our former chairman. Ray stand up and take a bow. We are always glad to have you with us. It is good to be with you today, joining us from Texas.

Ray has been the father of many, many of these very important water resources matters, and it is always good to have him aboard to keep us on the straight and narrow.

Having said that, with all of the members that are here, we would now like to recognize the distinguished gentleman from EPA, Mr. Eidness, who is the Assistant Administrator for Water.

If you would identify your colleagues for the record, we would appreciate that and will proceed from there.

Mr. Eidsness, the full text of your prepared statement will appear in the record at this point.

[The prepared statement referred to follows:]

20-955 O—84——2

Prepared Statement of Frederic A. Eidsness, Jr.

Good morning Mr. Chairman and members of the Subcommittee. I am Frederic A. Eidsness, Jr., Assistant Administrator for Water of the U.S. Environmental Protection Agency. It is a pleasure to be here this morning. I appreciate this opportunity to review with you some of our initiatives to strengthen the effectiveness of the partnership between the States and the Federal government in controlling water pollution and in meeting the goals of the Clean Water Act.

Today, in response to the Subcommittee's request, I will discuss our water quality program and the administrative and regulatory reforms that we have proposed to improve it. I will begin by describing water quality standards, how they are developed, and how they are used for controlling pollution in conjunction with other important requirements of the Clean Water Act. Then, I will focus on the problems that the regulated community, States, and the Environmental Protection Agency have experienced over the last ten years in the development and application of water quality standards. Finally, I will discuss how we are proposing to improve the utility of water quality standards as a

regulatory and management tool in meeting the goals of the Clean Water Act.

In order for the Committee to have a full appreciation and understanding for what EPA is trying to accomplish with respect to water quality standards, it would be appropriate for me to define the two major types of regulatory requirements included in the Clean Water Act. These are the national technology based effluent requirements which EPA establishes and water quality standards which States set and implement.

The Environmental Protection Agency is required to establish uniform national technology requirements which apply to municipal and industrial point sources of pollution. Simply stated, a point source of pollution is a discrete discharge from a municipal sewage treatment plant or a factory. While nonpoint sources of pollution, on the other hand, result from the runoff of water due to normal precipitation from urban areas, from construction sites, and from agricultural and silvicultural operations. For municipalities, the technology based standard is commonly referred to as secondary treatment. For industrial discharges, technology based requirements are referred to as best practicable treatment (BPT), best conventional technology (BCT), and best available technology (BAT). The primary bases for adoption of these requirements are available or demonstrated treatment technologies and costs. These technology requirements are embodied in Federal regulations and are incorporated into NPDES permits.

As you know, EPA is actively developing national regulations to control the industrial discharge of toxic pollutants with the technology based approach. In the past year, we have made substantial progress in promulgating toxic effluent requirements. To date (2/14/83) we have proposed 27 effluent guidelines and have promulgated 13 for the industrial categories included in the NRDC Consent Decree. We will continue this progress by adhering to the court schedule. This has required extensive data gathering and intensive analyses.

Technology based guidelines set uniform national requirements for a specific industrial category. These requirements vary from industry to industry. For example, we regulate a steel industry differently than a textile industry because of the differences in waste that each generates and the technologies which are available to control these wastes. Moreover, even within an industrial category, there are different requirements. The steel industry has 52 subcategories, each of which have somewhat different requirements. Different types of municipal systems also have different technology requirements. For example, lagoon systems are allowed to discharge a different concentration of suspended solid material than are conventional activated sludge treatment plants.

Every municipal and industrial point source discharger is required to meet these minimum technology based requirements with a few limited exceptions. Permits are issued to the owners or operators of municipal or industrial facilities which specify discharge limits in terms of a

maximum concentration (expressed as milligrams per liter) or mass loadings (expressed in pounds per day) or both. Discharge of pollutants from a municipal or industrial facility without a permit or in violation of any of the conditions of a permit (including failure to monitor the discharge and report such monitoring data to the State or EPA) is a violation of the Clean Water Act.

From 1972 to 1977 implementation of BPT regulations are estimated to have significantly reduced industrial discharges of six key pollutants: biochemical oxygen demand (BOD) by 71 percent; oil and grease by 71 percent; dissolved solids by 52 percent; phosphate by 74 percent; and heavy metals by 75 percent.

By 1980 municipal sewage treatment plants were removing substantial amounts of conventional pollutants: approximately 13,600 tons per day of BOD, and 15,800 tons per day of suspended solids. This represents an increase of 65 percent over 1973 levels, and is due in part to a significant increase in the number of POTWs achieving secondary treatment levels, from 40 percent in 1975 to over 75 percent in 1980.

Water quality standards, on the other hand, have a different focus than the technology based requirements. Under Section 303 of the Act States adopt water quality standards as State rules or laws. Water quality standards define the uses to be made of water and the criteria to protect the uses. Uses include public water supply, propagation of

fish and wildlife, recreation, agricultural and industrial purposes and navigation. Criteria are acceptable qualitative or quantitative estimates of water constituents which should ensure that the use is attained.

Currently, all 57 States and jurisdictions have approved water quality standards. For most waters, these standards include a fish and wildlife protection use, commonly referred to as a "fishable" use. Only eight States contain any water bodies which do not have fish and wildlife as a beneficial use. All State standards include criteria for "traditional" constituents such as temperature, pH, dissolved oxygen, fecal coliform bacteria and the "free froms". "Free froms" are general narrative criteria statements directed at controlling aesthetic water qualities such as taste, odor, and color and other elements including settleable solids, oil, and toxics.

Water quality standards serve three important functions under the Clean Water Act. First, they, in effect, establish a goal for a particular stream or water body. This goal is expressed as a use which is to be attained or protected and a level of water quality to be achieved. Second, water quality standards serve as a basis upon which States make management decisions in setting priorities, in developing and implementing nonpoint source control programs and in evaluating progress of water pollution control programs.

And finally, and most importantly, water quality standards serve as a regulatory tool. The technology based requirements for various industrial and municipal categories are applied nationwide without regard to the type of water body or the quality of the water receiving the discharge. Thus, when EPA writes national technology based standards, we do not know whether the pollution reduction resulting from those requirements for a particular stream are adequate to protect designated uses in State water quality standards. In setting technology based requirements, technology and costs are the primary considerations with little emphasis on the receiving water impact. On the other hand, permits written on the basis of water quality standards only consider water quality impacts. Since available treatment technologies or costs are not considered, water quality based permits can have very direct and dramatic affects on reducing pollutant loadings from point source dischargers and on the costs and economic impacts for owners and operators of facilities.

STANDARDS-TO-PERMITS SETTING PROCESS

Mr. Chairman, I would now like to briefly describe how water quality standards are translated into enforceable discharge permits.

As part of a State's water quality management process, water quality standards are set to define the water quality goals of a State

and as such are the foundation of State water quality programs. Section 303(e) of the Act requires State water quality management processes to be described in each State's Continuing Planning Process document. Under Sections 106, 205(g), 205(j), 208, 303 and 305, States and local governments initiate and carry out planning and management activities to establish their water quality goals and standards and to develop programs which will meet them. Water quality monitoring activities are carried out to develop chemical, physical, and biological data to assure that environmental control decisions and priorities are based on sound scientific data.

Water bodies that will meet applicable water quality standards once point sources and non-point sources (BMP's) are controlled to the prescribed technology based levels are called effluent limited segments. On the other hand, water bodies where it is known that water quality will not meet applicable water quality standards after application of the technology based effluent limitations are called water quality limited segments. The water quality based approach applies to the relatively few segments that will not meet water quality standards after installation of the technology based controls. Section 301(b)(1)(C) of the Act requires more stringent controls for these water quality limited segments.

Section 303(d) of the Act requires States to identify waters requiring more stringent effluent limits and to set priorities and calculate the amount of pollutant loads that will ensure implementation

of water quality standards. This calculation is called a total maximum daily load (TMDL). TMDLs are frequently expressed in pounds of materials that can be discharged to the stream in a day and still have the stream meet the criterion and protect the use included in the water quality standard. The State then allocates the TMDL to each discharger, to non-point sources, or to future growth through a "wasteload allocation." The State may reserve some of the stream capacity as a margin of safety to reflect uncertainty in the data. Admittedly there is a considerable amount of predictability and interpretation involved in relating a pollution discharge into a particular water body to the protection of a designated beneficial use based on adopted in-stream numeric criteria. Section 303(d)(1)(C) provides specific instructions on how a State (with EPA's review and approval) is to take into account lack of knowledge concerning the relationship between effluent limitations and water quality. Simply stated this provision of the law clearly indicates that when in doubt err on the side of caution. Specifically, Section 303(d)(1)(C) states "[s]uch (waste) load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." Indeed the "margin of safety" provision of the Act has been incorporated into other aspects of standards adoption and permit writing.

The results of the wasteload allocation are adopted in the water quality management plan for the stream, and are included as enforceable effluent limitations in permits issued to dischargers. These permits are part of the National Pollutant Discharge Elimination

System, or NPDES, and are the legal basis for requiring dischargers to control the pollutant levels in their effluents. All permits are to comply with the applicable water quality standard. Under Section 401(a)(1) of the Act, States certify that the allowable discharges in EPA issued permits comply with State standards.

Let us consider, for example, a small river feeding into a lake with a phosphorus problem. The State water quality standards have established a phosphorus criterion of 0.1 milligram per liter to help prevent eutrophication in the lake. To keep from exceeding this limit, the State calculates that no more than 500 pounds of phosphorus can be discharged to the river per day, given the volume of streamflow available in the river. This 500 pound limit is the total maximum daily load (TMDL). Based on an analysis of point and nonpoint sources on the river, the State decides that two cities located on the river should discharge no more than 250 pounds and 100 pounds of phosphorus per day, respectively, from their sewage treatment plants, leaving 150 pounds for runoff from nearby agricultural areas, expected population growth and an adequate margin of safety. These figures constitute the wasteload allocation for the river. They are established as enforceable limitations in the discharge permits that the State issues to the two cities, and are adopted in the water quality management plan for the river to help guide decisions on nonpoint source controls, and on future growth. This is a very simple example. The calculations become much more complex on large rivers or estuaries with more

dischargers, and with pollutants which change their chemical form in the river, such as oxygen-demanding materials.

PROBLEMS

As everyone knows, the 1972 Amendments to the Federal Water Pollution Control Act added a technology based approach to pollution control. It is frequently forgotten that Congress also strengthened water quality standards. Water quality standards were expanded to cover not only interstate waters but also intrastate waters. Congress also provided a mechanism to enforce all pollution control standards by requiring dischargers to obtain a permit. Prior to the permit program, determinations of compliance and enforcement were carried out through enforcement conferences which were haphazard and unwieldly.

Adding the technology based approach clearly changed the emphasis of the Agency. EPA concentrated its energies and resources on providing scientifically valid, cost effective technology based guidelines and on establishing the National Pollution Discharge Elimination System (NPDES) to control the discharge of pollutants from all point sources. Both were difficult undertakings.

The emphasis given in the 1970's to developing technology based controls and implementing a permit system meant that EPA placed less emphasis on water quality standards and the water quality based approach. States were not provided adequate guidance for establishing

water quality standards and for applying them in a water quality based approach to pollution control.

States used standards as goals and with EPA encouragement set them, with few exceptions, to reflect "the fishable/swimmable" 1983 goal of the Act. However, in doing so, there was little analysis of whether these uses were appropriate for a particular body of water.

Guidance was not provided on the factors to be examined in setting appropriate standards. Furthermore, in somes cases, EPA inappropriately carried over the need for uniformity and consistency in developing technology based controls to encouraging the development of uniform State water quality standards. On the whole, little site-specific analysis was done even though under the Clean Water Act, standards were intended to reflect specific local conditions and priorities. If any site analysis was done, it was primarily an analysis of chemical parameters, such as dissolved oxygen, pH and temperature. Rarely were the physical or biological characteristics of the stream evaluated. Physical and biological characteristics of a stream including flow, substrate and food are critical components in determining whether a stream is "fishable".

States also designated very general aquatic or "fishing" uses in State water quality standards with little or no specificity as to the species to be protected or whether protection also included propagation. Aquatic protection is a broad category which ranges from

providing for the survival of pollutant-tolerant fish to providing for high quality trout streams. Even for a trout stream there are various levels of protection. Is the use to include propagation, or survival only, such as a put-and-take trout fishery? This could make a tremendous difference in treatment costs, particularly if trout propagation is not feasible because of non water quality related factors such a stream flow, or substrate. For example, in a stream receiving 10 MGD of effluent, further treating the effluent for trout propagation could increase the construction costs of waste water treatment by $1.5M and yearly operation and maintenance costs by $50,000 over what would be needed for a put-and-take trout fishery. These additional costs may not make sense and may pose a financial hardship, particularly on a small community.

In addition to the problems of designating appropriate uses in a standard without adequate guidance, EPA required, between 1978 and 1980, that States adopt the Agency's laboratory-derived national Section 304(a) criteria unless the State could adequately justify another number. However, EPA provided no guidance on what would constitute adequate justification. National Section 304(a) criteria do not account for all local factors, which affect the bioavailability or the "harm" a pollutant may cause to aquatic life. For example, in many western streams, the Section 304(a) criterion for copper is inappropriate because of the high suspended solids content. This water quality condition renders the copper biologically inactive. The data base from which the national copper criterion was developed used water

free of suspended solids. Thus, if the national criterion for copper is applied directly in the water quality standard, without modification to reflect the high suspended solids content, a discharger's permit limits for copper on such a stream are likely to be more stringent than necessary to protect the use.

The national criteria, particularly the "Red Book", gave only a single chronic value considered to be fully protective of 95 percent of the species. This is a conservative value because it allows no variations or "excursions" even for short periods of time. The criteria may also be overly conservative if the species tested to derive the value are not indigenous to the waters in a particular State. No guidance or background information accompanied the criteria. Therefore States or permit writers had no basis of scientifically selecting a value protective of particular species or families of fish.

In many cases, the problem is not with the water quality standards per se, but with their implementation into the permit and construction grant processes. Little information was provided to States. As a matter of fact, it was not until five years after the 1973 deadline that EPA complied with Section 304(a)(2)(D) of the Act and published an identification of pollutants suitable for calculating TMDLs to meet water quality standards.

Even then, we issued little technical guidance on how to calculate TMDLs or how TMDLs are incorporated into appropriate models for use in the wasteload allocation process. Models are the tools which are usually used to transform water quality standards into permit limits and design criteria for treatment plants. The proper selection and application of the model is critical to determine the water quality resulting from different treatment levels. Many States use simple mass balance or desk-top models in developing the amount of pollutant reduction necessary to meet water quality standards. Simple mass balance models are appropriate for pollutants such as soluble salts under steady state stream conditions. On the other hand, especially for other pollutants, they are very conservative models because they fail to take into consideration removal mechanisms such as volatilization, biodegradation or settling, and the variable flow of the stream or effluent.

Most models assume a flow condition of the average seven consecutive day low flow that will occur once in 10 years (7Q10). In many western streams this is zero. This means that the criteria could never be exceeded in the effluent itself. In the West, a more appropriate design flow might be the 7Q2, (a flow condition of the average seven consecutive day low flow that will occur once in 2 years), but EPA did not provide the guidance necessary to set appropriate design flows for a particular stream for the level of control actually needed. While margins of safety are required under the Act in the standards to permit process, particularly for complex

toxic effluents, States have not had the flexibility or technical guidance, in the past, to consider site-specific physical, chemical and biological characteristics of the stream.

Thus far, water quality based limitations have not been a major component of permits because of our emphasis on the technology based municipal and industrial components. Only 10-20 percent of the major industrial and municipal permits issued have a water quality based component. Many of these permits were written before the technology based requirements were published and for the most part were based on ad hoc judgments. However, as the technology based requirements are completed and included in the permits, greater emphasis will be placed on including water quality based components in the permit to meet water quality standards. In Fiscal Year 1984, EPA is scheduled to write a number of major industrial permits, about forty percent of which will address significant water quality based concerns. We do not know how many State issued permits will have water quality based components but we anticipate that each year the number will increase. These water quality based permits represent complex situations. Additional guidance is needed on biological testing procedures and selecting an appropriate averaging period (such as 1, 7, or 30 days) for determining compliance with the criterion.

We have seen the problems of unattainable uses, inappropriate criteria or inadequate modeling of the stream for wasteload allocations in Advanced Treatment (AT) project applications for Federal

grants. AT projects are water quality based treatment proposals for publicly owned treatment works (POTW). The pollutants of concern are usually biochemical oxygen demand (BOD), phosphorus, nitrogen and ammonia. As you know, the technology based requirement for POTWs is secondary treatment. The Fiscal Year 1979 Appropriations Committee Report for the construction grants program agreed "that grant funds may be used for construction of new facilities providing treatment greater than secondary only if...the Administrator personally determines that advanced treatment is required and will definitely result in significant water quality and public health improvements."

We have found that many AT project proposals have not been adequately justified. Since 1979, the Administrator has reviewed eighty (80) AT projects; changes were made in 52 percent of the projects. Last year, changes were made in all AT projects reviewed in Headquarters. To date, the proposed AT capital costs for the projects reviewed at Headquarters totals $1.67 billion; $0.82 billion or 50 percent of the projected capital costs have been deferred. In addition, O&M savings are estimated to be $220 million.

As I indicated, there are several reasons for revisions in the AT projects: some related to inadequate justification of anticipated water quality improvements; others related to the excessive design of AT processes. For those projects where there are inadequate water quality justifications, the problem was either with the water quality standard itself or with the application of that standard into the permit and

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construction design processes. For example, secondary treatment frequently ensures sufficiently low concentrations of ammonia to support a warm water fishery (i.e. catfish, bass, etc). However, nitrification (an AT process) to remove ammonia may be needed to protect a cold water or salmonid fishery (trout, pike, etc). Without adequate analyses to show that the stream is or could support cold water fish, nitrification - the AT portion of the project - is deferred. In other cases, criteria were not properly applied. A long term chronic number may have been used with short term low flows. There, the acute value should have been used. Quite often, extremely conservative waste load allocation models were used or, the models were not properly verified and applied to the receiving water. Finally, we have found that many of the AT processes are excessively designed, particularly with the addition of final filtration. This process is generally unnecessary if the plant is properly operated.

Estimates indicate that 30-60 percent of all new facilities may require some level of advanced treatment. The 1982 needs survey projected this AT backlog at $3.77 billion. These figures are highly dependent upon proper use classification since many low and intermittent streams are involved and may not support a fishery use. We estimate that less than 50 percent of the $3.77 billion will actually be needed as States critically evaluate the appropriateness of their water quality standards on water quality limited segments and improve the application of standards into the permits and construction grants processes.

WATER QUALITY BASED APPROACH

The problems that I have just outlined convinced me that EPA had to initiate a number of activities including public education, regulatory reforms and new guidance to effectively implement a water quality based program. Municipalities and industries are installing the technology based controls so we need the mechanisms now and in the years ahead to implement the water quality based approach. The law requires that where the technology based controls are inadequate to meet water quality standards, more stringent controls are to be applied.

As you recall, secondary treatment technology requires an effluent limitation for five day biochemical oxygen demand (BOD_5) and suspended solids (SS) of 30/30 mg/l on a maximum monthly average basis or as 85 percent removal of these parameters, whichever is more stringent. Removing this last fifteen percent comes only at a very high unit cost and pushes the limits of reliable performance. We have a priority project to determine the effectiveness of advanced treatment. Because additional controls may be costly and in some cases the technology is at the edge of reliable performance, we believe that the type of water quality analyses that EPA requires for AT projects is the same type of analyses which are needed in reviewing water quality standards on water quality limited segments.

Passage of the 1981 Construction Grants Reform legislation stimulated our work on the water quality based approach because of a new requirement. This requirement precludes the award of Federal grants for the construction of publicly owned treatment works after

December 1984, unless the water quality standard for the receiving water body has been reviewed and where necessary, revised.

One of my first steps, as Assistant Administrator, was to put into effect a management process to deal with the problems of implementing the water quality based approach to pollution control. In the past, policies, regulations, guidance development and testing programs were developed independently by separate EPA offices. To resolve the problems with the water quality based approach, in a timely fashion, we had to systematically integrate our expertise and resources to resolve the longstanding problems that I have just discussed. A combination of policy initiatives, regulatory reforms and guidance materials were identified and a schedule for their development laid out. I am attaching a copy of this integrated approach, "Priority Work Plan for the Water-Quality Based Standard-to-Permits Project" to my testimony (See Appendix I). With your concurrence, Mr. Chairman, I would like to summarize the key elements. This will provide the overall structure of the water quality based approach which encompasses the proposed water quality standards revisions.

The primary objective of this project is to encourage and assist State water pollution control agencies. This is to be done by providing the tools so that States can write appropriate water quality-based permits, where it is necessary to go beyond technology based controls, in order to protect or restore the designated use; and to help them:

(1) correlate water pollution control requirements for all sources, both point and nonpoint, with actual attainment and restoration of beneficial uses; and

(2) identify whether water pollution control benefits are reasonable compared to the costs and potential environmental tradeoffs of advanced treatment for point sources.

Related objectives are to encourage and help the States to:

(1) assure that limited State and local resources are directed toward the establishment of water quality based controls on a priority, carefully planned basis,

(2) assure adequate control of toxic pollutants,

(3) provide for adequate public input/discussion throughout the planning process, including designation of beneficial uses to be protected, selection of numeric criteria to protect the designated uses, and calculation of TMDLs/WLAs,

(4) assure the availability of adequate site specific data for decision making on designated uses and narrative/numeric criteria, and

(5) provide a quantitative assessment of the relative contributions of point sources and nonpoint sources to impairment of water quality and beneficial uses.

State and local agencies will need to concentrate their efforts on the highest priority segments. This will require close EPA, State, and local coordination. Success depends in large measure on whether EPA's policies and program/technical guidance (as carried out under State policies and procedures), effectively ensure informed responses to the

following key questions for water quality limited water bodies (segments):

(1) What is the use to be protected?
(2) To what extent does pollution contribute to the impairment of the use?
(3) What is the level of point source control necessary to restore or enhance the use?
(4) What is the level of nonpoint source control necessary to restore or enhance the use?
(5) Is there a reasonable relationship between the treatment costs and the benefits of attaining the designated use?

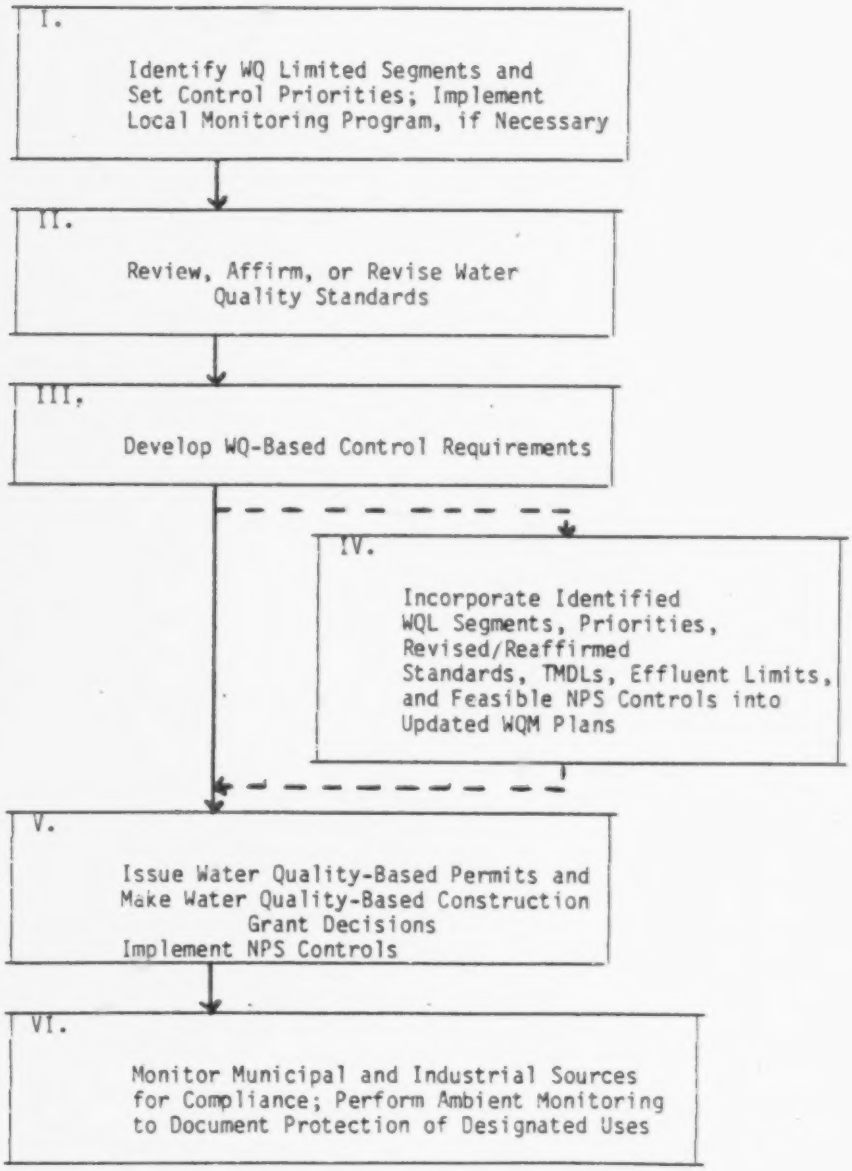
I have also included a flow diagram (Figure 1) which lays out the key elements of the water quality based approach. It is an iterative process. Over time, adjustments are made as standards are reviewed, affirmed or revised, as appropriate, waste load allocation strategies developed, effluent limits and permits issued and the results predicted or observed. The amount of information needed, the sophistication of the analyses and the timing and sequencing of the steps in the process depend on the situation. The process relies heavily on common sense, technical guidance and practical application of limited resources.

To support the major elements of water quality based approach, over the next eighteen months, we will have completed and will have field tested major guidance documents. These guidance documents and supporting tasks are keyed to the element in the process it supports (see Figure 1) and are listed below.

I. Identify Water Quality Limited Segments and Set Control Priorities:

Figure 1

MAJOR ELEMENTS OF THE WATER QUALITY-BASED STANDARDS-TO-PERMITS PROCESS



Provide guidance for identifying and prioritizing water quality limited segments.

II. Review, Affirm or Revise Water Quality Standards:

Issue revised water quality standards regulations and supporting guidance.

Issue water quality criteria guidance and interpretation documents.

III. Develop Water Quality Based Control Requirements:

Revise regulation and supporting guidance for wasteload allocations/total maximum daily loads

IV. Incorporate Identified Water Quality Limited Segments, Priorities, Revised/Reaffirmed Standards, TMDLs, and Effluent Limits into updated Water Quality Management (WQM) Plans:

Provide guidance for updating CPPs and WQM Plans, and priority systems

V. Issue Water Quality Based Permits and Make Water Quality Based Construction Grant Decisions:

Provide guidance for issuing water quality based permits

Issue regulation and supporting guidance for making water quality based construction grant decisions

VI. Monitor Municipal and Industrial Sources for Compliance; Perform Ambient Monitoring to Document Protection of Designated Uses:

Provide Guidance on Water Quality Monitoring and Local Cooperative Monitoring Programs

Issue revised Water Quality Management Regulations and supportive guidance on the overall margin of safety

Provide data management support

As we move forward with the water quality based approach, it is important that the American people understand not only that the water quality based approach is an integral component of the Act's overall approach to pollution control, but also what is meant by the water quality based approach to pollution control. Thus, on October 29, 1982, we published proposed revisions to the Water Quality Standards Regulation with a discussion of the water quality based approach. Water quality standards were presented in the context of the water quality based approach. We wanted to obtain the views and experiences of others in assisting us perfect the design of the water quality based approach.

From the beginning, States played an active role in preparing these proposals. Starting in October 1980, a subcommittee of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) reviewed five drafts of the Regulation and met with EPA on numerous occasions. In addition to the ten States and interstate agencies serving on the subcommittee, all States received at least two drafts of the proposed revisions. Eighteen States assisted in the development and testing of the guidance supporting the Regulation. Environmental, business and industry groups were also consulted and received drafts of the proposals.

Eleven public meetings were held nationwide to solicit comments. Nine hundred and twenty people attended those meetings. We have received approximately 1400 letters on the proposal and we are

carefully evaluating all of the recommendations. I believe that we have succeeded in stimulating the discussion that we wanted.

Questions have been raised on the feasibility of the water quality based approach in general and specifically on the approaches outlined in the proposed revisions to the Water Quality Standards Regulation. I wish to address these questions directly as a means of clarifying our initiatives for this Subcommittee.

First, based on the number of water quality limited segments, is the water quality based approach realistic? As indicated by State submissions for the 1982 National Water Quality Inventory Report to Congress (See Appendix II), technology-based controls have improved the quality of many of the Nation's rivers and streams. Overall trends toward continuing improvement in water quality are cited by 21 of the 33 States submitting trend information in their 1982 water quality reports. Twenty (20) States also provided estimates of their progress toward the Clean Water Act's 1983 goal of "fishable/swimmable" water quality. These 1982 estimates of waters currently meeting the "fishable/swimmable" goal range from a low of 66 percent of Rhode Island's 329 miles of streams to a high of 97 percent of New Hampshire's 14,500 stream miles. While it should be noted that no precise national conclusions about the percent of waters meeting the goal can be drawn because of varying methods of assessing goal attainment, these estimates do indicate that a majority of the Nation's

waters already meet the 1983 goal, and hence that a relatively small proportion will require additional water quality based controls.

The second question frequently asked is whether resources are available. Our approach is flexible. It encourages the most efficient use of resources by encouraging States to set priorities. Setting priorities is a basic management tool and a necessary step for States to make the best use of limited resources in managing for environmental results.

Let me define what I mean by the term "priority water bodies". Priority water bodies are those water quality limited or effluent limited water bodies for which pollution abatement and control decisions are most needed to prevent or reverse the impairment of a designated use. Factors to be considered in identifying priority waterbodies could include, but are necessarily limited to: the use to be protected; the severity of the use impairment or the severity expected if no actions are taken including human health; and the margin of environmental benefits expected for the resources expended. Once priority water bodies are determined, pollution control actions, such as standard setting, wasteload allocations and permit issuance, should be identified and scheduled.

To support States in their efforts to focus on their priorities, they will no longer be required to review all their State standards every three years. Rather, the selection and review of standards on

priority water bodies will satisfy the requirement of the Act that standards be reviewed from time to time but at least once during each three year period. In fact, standards reviews are a continuous process. However, by focusing on high priority water quality limited segments where the costs or benefits of installing controls are significant, States will be able to collect and analyze the data and information necessary to ensure that standards are reviewed based on adequate data and information.

State water quality agencies should work with other State, Federal, areawide and local planning agencies and the private sector to assist in assembling the data and in performing the analyses. We are encouraging States to develop a coordinated approach to water quality monitoring. Although water quality data is being collected, it is collected by different groups - EPA, Geological Survey, State agencies, municipalities, local and areawide planning agencies, universities and the regulated community - for different reasons. Therefore, there are duplication and overlap as well as missing links in our ability to identify and characterize water quality problems and set priorities. To assist States in establishing a coordinated monitoring program, we are preparing guidance on the technical and institutional factors to be considered in establishing such a program, including the financing of the program by industry and local governments. We have compiled a case study file of more than 80 areas where cooperative monitoring programs have been implemented. We believe that cooperative monitoring programs

are a viable option for States to use in reducing any resource impacts of improving their monitoring programs.

Congress has also made available additional resources for water quality standards reviews through Section 205(j) of the 1981 Construction Grants reform legislation. This section set aside up to one percent (1%) of a State's construction grant allotment for a variety of water quality planning purposes. Although our data are still preliminary, States indicate that they plan to use this money for detailed reviews of their water quality standards and to conduct the type of scientific and technical analyses we recommend.

Based on a study we did of three State water quality programs, it appears that only ten to fourteen percent (10-14%) of a State's water quality program budget, annualized over a three year period, would be required for most States to review their water quality standards on priority water bodies. Although I am sensitive to State resource constraints, I believe 10-14 percent of a State's water quality program budget is a reasonable cost.

There are also other resources available to States. From my personal experience in Colorado, municipalities and industry are willing to assist States in gathering data for intensive water quality standards reviews (See Appendix V for an elaboration of this experience). In discussions with industrial representatives and statements made at the water quality standards public meetings, I

believe industry will assist States. In accepting this assistance, States will need to outline explicit quality assurance/quality control procedures to be followed to ensure the quality of the data. Industry itself recognizes that in order for States to use their data, all relevant data must be submitted and made available to the public. I must stress that the interpretation of the data is the States' responsibility.

At the public meeting on January 20, 1983, in Washington, D.C., I questioned one industrial representative as to whether his company would be willing to assist the States. I would like to quote from the transcript of that meeting.

> "MR. EIDSNESS: Mr. Hansen, before you leave, I have a question just as a point of clarification. To put it in my terms and paraphrase what I think you said, you indicated an interest in working out cooperative agreements with states to support development of site-specific analysis.
>
> "MR. EIDSNESS: As part of the standard review process, do you understand and do you acknowledge and accept that however that may be accomplished, assuming it does occur or may be occurring now, that the responsibility for interpreting such data analysis and setting regulatory requirements rests solely with the states?
>
> "MR. HANSEN: Yes, we understand that. We feel that we have a real interest in developing site-specific criteria. We aren't really quite sure if it is legal or politic to have an agreement with the states. Maybe it would be a cooperative agreement between industries and the data presented to the states. But, in any case, we recognize that they have the power to analyze the data and make decisions from the data that is arrived at."

In the final analysis, it has been my experience that those who bear the costs of implementing control requirements have the greatest

stake in providing the data to be used in the State decision-making process. The State may choose to have the regulated community collect the additional data on a carefully controlled basis.

In addition to the resource questions, another major question raised was whether we have the tools to accomplish this? The process outlined in the proposed rule utilizes the wealth of data, scientific knowledge and methodologies developed over the past ten years. For example, we have a much better understanding of river systems in this country because we have been able to use calibrated and varified models in interpreting the tremendous amounts of monitoring data that have been collected over this period. In the scientific area, we have been able to identify, for instance, the free copper ion as the toxic fraction of total copper that is responsible for toxicity in aquatic organisms. In a different area we are now able to quantify the effect of temperature on the toxicity of ammonia in the aquatic ecosystem. With respect to methodologies, one particularly notable advance has been the development, by the U.S. Fish and Wildlife Service, of the Habitat Suitability Index models which define the characteristics of a water body necessary for a particular species of fish.

The "Standards-to-Permits Process" Work Plan outlines the broad range of technical guidance that we plan to make available to the States. This guidance ranges from performing wasteload allocations for toxic pollutants to analyzing complex effluent bioassays. It also includes guidance on time variable wasteload allocations and permits as

well as flow, temperature, and pH design conditions in wasteload allocations, to list but a few. We recognize that we do not have all the answers nor have we developed all the best tools. But where the science is available, we believe that it should be used in setting appropriate water quality standards. In conjunction with the proposed Rule, we have drafted guidance to assist States in using the scientific and technical analyses for setting uses and criteria on a site-specific basis. We are evaluating this guidance in States that have not previously used the procedures outlined in the guidance to assess their general workability.

Mr. Chairman, I would now like to share with you and members of this Subcommittee a few examples of the use attainability analyses recommended as part of the proposed water quality standards revisions.

One factor frequently ignored in setting uses for a particular site was the physical characteristics of the water body. Certain water bodies lack a proper substrate for fish to spawn, physical barriers such as dams prevent migration of anadromous fish, or natural ambient water temperatures preclude certain species of fish. The U.S. Fish and Wildlife Service is developing a series of Habitat Suitability Index (HSI) models for various aquatic species. The models define the characteristics necessary to support particular species. Factors such as percent of pools and cover, substrate type, velocity, dissolved oxygen, salinity, temperature and turbidity are used to calculate four requisite components for aquatic life: food, cover, water quality and

reproduction potential. The HSI model for channel catfish was used as part of our test case on Salt Creek in Nebraska. The model was applied to three Salt Creek segments to determine if the channelized segment should retain its limited warm water fishery designation or if the segment could support a "valued warm" water fishery. Using the HSI model, the State was able to demonstrate that its original classification of the channelized portion of Salt Creek was appropriate.

On the South Fork of the Crow River in Minnesota, another technique was used to evaluate factors affecting the suitability of the South Fork for fishery and recreational uses. Minnesota compared physical, chemical and biological (species diversity values) factors of the North Fork and Mainstem Crow River to the South Fork. This was done to evaluate the "quality" of the fishery in the South Fork and to isolate those factors affecting the quality of the fishery. The State was able to conclude that, although stressed, there was a definite fisheries value in the South Fork of the Crow River. Game and sport fish were found to be important components of the fishery even though rough fish predominated. Major stress of the fishery occurred at a point source discharge but marshland tillage and agricultural nonpoint source runoff also contributed to the impairment. No change was recommended in the use classification. Reduction in marshland tillage and drainage, implementation of agricultural best management practices and upgrading the point source effluent would all improve the fishery. This standards review provided a rational, scientifically supportable

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basis for the development of a water pollution control program for the South Fork of the Crow River.

The Malheur River, Oregon, illustrates another example of the approach proposed in the revised Rule. The hydraulics of the Malheur River have been extensively altered through the construction of several dams and diversion structures designed to store and distribute water for irrigated agriculture. These dams, as well as others on the Snake River, to which the Malheur is a tributary, prevent natural fish migrations in the River and thus have permanently altered the River's fisheries. At present, the river above Namorf Dam is managed as a trout fishery and from Namorf Dam to the mouth as a warm water fishery. However, the use classification of the latter segment is a salmonid fishery. This use cannot be achieved primarily because of the dams although high suspended solids, warm water temperatures and periodic low flows also contribute to unfavorable water quality conditions for the salmonids. A change in the use to a warm water fishery would only reflect the physical realities. Such a change would not further jeopardize existing aquatic life nor result in any degradation in water quality.

These examples (see Appendix III-Use Attainability Case Studies) show that there are a variety of chemical, physical and biological analyses which can be used to better define the fishery use (the type of species to be protected), to pinpoint the causes of any impairment

in the use and to evaluate the potential of the water body to support a specific use.

Our case studies confirm, in my mind, that States are unlikely to make major changes in uses. In fact, ASIWPCA has gone on record stating that they do not believe there will be major changes in uses unless it can be demonstrated that the standards were inappropriate. Governor Matheson of Utah, Chairman of the National Governor's Association wrote:

> "There have been charges that these proposed modifications will result in "pollution shopping" by industry. I believe that the integrity, sophistication and expertise demonstrated by state water quality programs renders these charges meaningless, and I repeat my assurance that there is no intention to relax the standards in Utah."

In addition to examining the potential of the water body to attain a use, our approach recommends that, where appropriate, the criteria be examined. Under Section 304(a) of the Act, EPA develops and publishes guidance on surface water quality criteria. Criteria are quantitative or qualitative estimates of acceptable concentrations or conditions of water constituents or pollutants in the water. While EPA's national laboratory derived guidance reflects the latest scientific knowledge of the identifiable effects of pollutants on public health and welfare, aquatic life, and recreation, it does not, by its very nature, take into consideration local conditions.

National, laboratory-derived water quality criteria guidance may be under protective or too stringent if: (1) the species at the site are more or less sensitive than those included in the national criteria data set or (2) the water quality characteristics of that site alter the bioavailability and ultimately the toxicity of the chemical.

Site-specific criteria development is justified because species at a site may be more or less sensitive than those in the national criteria document. For example, the national criteria data set contains data for trout, salmon, or shrimp. These aquatic species have shown to be especially sensitive to some chemicals. Since these or other sensitive species may not occur at a particular site, they may not be representative of those species that do occur there. Conversely, there may exist at a site untested sensitive species that are ecologically or economically important and would need to be protected.

Water quality factors have been demonstrated to ameliorate or enhance the bioavailability and subsequent toxicity of chemicals in freshwater and saltwater environments. Hardness, pH, suspended solids and/or salinity influence the toxicity of some heavy metals, ammonia and other chemicals. For some chemicals, hardness or pH dependent national criteria are available for freshwaters. No salinity-dependent criteria have been calculated because most of the saltwater data for heavy metals has been developed in high salinity waters. However, in some estuarine sites where salinity may vary significantly with

seasons, the development of salinity-dependent, site-specific criteria for metals of local interest may be appropriate. Such criteria would be seasonally oriented.

The existing Regulation allows States to set site-specific criteria but does not reference acceptable methods. Our proposal and accompanying guidance describe scientifically valid methods for setting site-specific criteria and our case studies illustrate how this may be accomplished. To assess the workability of this guidance, we are running 17 tests in 15 States on setting criteria for zinc, lead, nickel, cadmium, chromium, copper, chlorine, cyanide, lindane and ammonia. (See Appendix IV-Test Cases for Site-Specific Criteria).

The principal assumption associated with site-specific criteria development is that the species' sensitivity ranking and toxicological effects (e.g., death, growth, or reproduction), derived from appropriate laboratory tests will be similar to those in field situations. Another assumption is that the site-specific criterion, like the national criterion, should protect 95 percent of the aquatic species at the site.

The Site-Specific Guidelines are an attempt to more correctly protect the various uses of aquatic life by accounting for toxicological differences in species sensitivity or water quality at specific sites for designated uses. Modification of the national biological data base and use of bioassay data obtained on resident

species in either laboratory or site water must always be scientifically justifiable and consistent with the assumptions, rationale, and spirit of the guidelines that were used to develop the national criteria.

There are four procedures which are included in our guidance for developing site-specific criteria. State may choose any of these or similar procedures depending on site considerations and resources availability to modify criteria. The procedures for the derivation of a site-specific criterion are:

A. Recalculation procedure to account for differences in resident species or families sensitivity to a chemical.

B. Indicator species procedure to account for differences in bioavailability, and therefore toxicity, of a chemical due to water quality variability.

C. Resident species procedure to account for differences in resident species sensitivity and differences in the bioavailability, and therefore toxicity, of a chemical due to water quality variability.

D. Heavy metal speciation procedure to allow the comparison of ambient soluble or biologically available metal concentrations to Section 304(a) criteria.

To further assist States we have recalculated the aquatic life criteria for 21 toxic pollutants on a State-by-State basis using the resident family recalculation procedure (Procedure A that I just mentioned). In addition to providing guidance on setting site-specific criteria, we are improving the scope and usability of national criteria documents.

First, we have developed water quality criteria documents for 64 classes of toxic pollutants. Now, we are developing companion documents that summarize and explain background data for States and permit writers. By summarizing background data on growth impairment and on mortality for short term, intermittent or long term exposures, criteria will be more reflective of the actual uses assigned to the water body.

As we revise the criteria documents, we are providing two numbers in the criteria guidance - an acute number and a chronic 30 day average value. The acute value allows short excursions above the chronic value. In a 30 day period, there can be no more than a total of 96 hours that the criterion (an acute value) is above the chronic value. These excursions allow modest variations in effluent flow without adverse impacts on aquatic life.

The revised criteria documents will also contain site-specific information. For example, the revised ammonia criterion will include different recommended values depending on changes in pH and temperature.

Besides the questions on resources and the availability of tools to accomplish what is proposed, we received many comments on our focus on uses particularly in relationship to high quality waters. The

proposed rule focuses on the uses to be made of the water. It is evident from research and experiences gained over the years in implementing water quality standards that physical and biological as well as chemical data is appropriate in the determination of an appropriate water quality standard. For this reason we proposed a new conceptual approach which focuses on uses themselves rather than on purely water chemistry.

In this regard, we received substantial comment on the fact that the proposed Rule no longer provides special protection for high quality waters. High quality waters are those waters whose quality is better than that needed to protect a fish, wildlife or recreation use. The current requirement specifies that a public hearing must be held before a State allows for water to degrade to the point of impairing the use. This is an issue of great concern to the public that will be addressed as we revise the Rule. I would appreciate the views of this Subcommittee.

Another provision of our proposed regulation that received substantial public comment was the benefit-cost assessment. We believe that economic and social costs are a legitimate consideration in the standards setting process. The existing Rule states that changes in uses could only be made if, among other factors, there would be "substantial and widespread" economic impact. We believe the test for this is too stringent as a uniform national requirement. The test is that:

"The adverse economic and social impacts resulting specifically from imposition of the controls, and reflected in primary and secondary unemployment impacts, plant closures, changes in governmental fiscal base, and other area economic indicators, are substantial and widespread in comparison to other economic factors affecting the area's economy, to national economic conditions and fluctuations, and can be expected to persist for periods longer than provided for by adjustment payments such as unemployment compensation; and they are detectable in an area appropriate for measurement, at least as large as a county or SMSA and, if appropriate, any larger economic areas such as defined by the Bureau of Economic Analysis, U.S. Department of Commerce. In making a determination of substantial impact, the positive economic and social impact of enhanced water quality must be evaluated."

We were looking for an alternative, preferably one that was used elsewhere in the Act. Although used in a different context, section 302 does require a balancing of economic and social costs and economic and social benefits to determine whether there is a reasonable relationship between the two in establishing more stringent limitations. The Rule, as proposed, allows, but does not require, States to conduct a benefit-cost assessment in determining whether there is (or is not) a reasonable relationship in requiring more stringent controls after meeting the technology based requirements, to achieve water quality standards. This led people to believe that a benefit-cost ratio would be the basis of a water quality standards decision. This is not what we have in mind. Rather, we wanted a process that provides State decision makers and the public with information on impacts - the environmental and economic gains and the costs of the standards decision. It is important to recall that most State standards are adopted by independent rulemaking bodies appointed by the Governor. These rulemaking bodies represent a broad cross

section of interests. Just as Congress makes tradeoffs, so must these rulemaking bodies. Thus, what we had in mind was a "common sense" approach for determining what is economically attainable at a specific location. This is similar to what at least 15 States use as part of their water quality standards setting process.

CONCLUSION

As I noted earlier, Congress designed a partnership between EPA and the States in carrying out the Clean Water Act. EPA is responsible for the technology based approach. EPA develops uniform technology based effluent guidelines to ensure a minimum level of treatment nationwide. States have primary responsibility for water quality standards and the water quality based approach.

It is within this framework that EPA revised the water quality standards regulation. States set their own water quality standards by deciding the uses to be made of the waters and by setting criteria to protect those uses. EPA's responsibility is to ensure that State standards "protect public health or welfare, enhance the quality of water and serve the purposes of the Act". We believe this to mean that in reviewing State standards, EPA must carefully review any changes that might in any way adversely impact public health or welfare, the quality of water or the goals of the Act. States will have to demonstrate that any lowering of their water quality standards is appropriate and scientifically valid. EPA will critically evaluate the

analyses States submit as justification for (1) changes in criteria which might adversely affect designated uses, or public health or welfare: (2) uses which appear inconsistent with Section 303(c) of the Act; or (3) uses which might preclude attainment of the goals of the Act where these uses are attainable. In carrying out these responsibilities, EPA will work closely with States in supplying them with the latest information on criteria and methods to evaluate the attainability of uses. In this way we believe that we will be assisting States to set appropriate water quality standards, rather than setting State water quality standards for them.

Mr. Chairman, this concludes my statement. I would be happy to answer any questions that either you or members of the Subcommittee may have.

NOV 8

APPENDIX I

OFFICE OF WATER
US ENVIRONMENTAL PROTECTION AGENCY
FY 1983 PRIORITY PROJECT SUMMARY STATEMENT

WATER QUALITY-BASED STANDARDS-TO-PERMITS

A) Project Objective -

The objective of the project is to develop a consistent framework for EPA's regulations, policy, and guidance governing water quality-based controls. The project involves all steps in the "standards-to-permits" process, including: identifying water quality limited segments, setting priorities reviewing and revising (or reaffirming) water quality standards, establishing wasteload allocations to implement the standards, incorporating these wasteload allocations into NPDES permits and construction grant decisions, and performing ambient and compliance monitoring to protect and maintain the designated beneficial water uses.

B) Project Tasks and Products -

Major tasks are listed below with some example products and completion dates:

1) Project Implementation and Management

2) Provide Guidance for Identifying and Prioritizing WQL Segments: Guidance for priority waterbodies (3/83); Screening manual for conventional and toxic pollutants (2/84)

3) Issue Revised Water Quality Standards Regulations and Supporting Guidance: Revise WQS Regulation (7/83)

4) Issue Water Quality Criteria and Implementation Documents: Dissolved oxygen guidance (4/83)

5) Revise Regulation and Supporting Guidance for Wasteload Allocations/Total Maximum Daily Loads: WLA guidance for streams and rivers (11/83); Guidance on Biomonitoring techniques (12/83)

6) Provide Guidance of Updating CPPs, WQM Plans and Priority Systems: FY-83 guidance on CPP and WQM plan updates (1/83); Guidance on State priority systems construction grants (12/82)

7) Provide Guidance for Issuing Water Quality-Based Permits: Draft guidance for selecting 1-, 7-, 30-day permit averaging periods (8/82)

8) Issue Regulation and Supporting Guidance for Making Water Quality-Based Construction Grant Decisions: POTW advanced treatment funding policy (12/82)

9) Provide Guidance of Water Quality Monitoring and Local Cooperative Monitoring Programs: Local user guidance (6/83)

10) Guidance on the Overall Standards-to-Permits Process: Promulgate revised WQM Regulations (4/83); Guidance on overall margin of safety (9/84)

11) Provide Data Management Support for the Standards-to-Permits Project: Complex Effluent toxicity information system (12/82); Reach file water quality analytic capabilities (12/84)

C) Project Management -

Lead Office: Monitoring and Data Support Division
Office of Water Regulations and Standards

Project Coordinator: Fred Leutner (FTS 382-7040)

A group consisting of the division directors from seven Headquarters divisions (Monitoring and Data Support Division, Criteria and Standards Division, Office of Analysis and Evaluation, Water Planning Division, Facilities Requirements Division, Permits Division, and Enforcement Division) acts as the focal point for overall coordination and implementation of this project. Regional Offices, together with the Standing Work Group on Water Quality Monitoring and Wasteload Allocations, will review the projects workplan and resulting outputs. The lead Regional Divisions are: Region IV - Environmental Services Division, Region V - Water Division, Regions VI - Water Division, and Region VIII - Environmental Services Division.

Interested groups and individuals can participate in this project though the standard Agency process for review of proposed regulations or by commenting or guidance documents mentioned above.

I. Introduction

The purpose of this workplan is to recommend an EPA Headquarters policy and guidance framework for helping to ensure cost-effective State and local action on developing site-specific water quality standards, total maximum daily loads/wasteload allocations (TMDLs/WLAs) and water quality-based permits, also, for making associated construction grant decisions (e.g., recommendations on funding of construction grant applications). The workplan clarifies EPA, State, and local responsibilities. The workplan also includes project resource requirements, and implementation schedules for the several EPA Headquarters tasks. The major elements of the water quality-based standards-to-permits process are shown on Figure 1.

The process used in developing this priority workplan is as follows:

- o We first identified key statutory, regulatory, and administrative requirements that may affect the form and timing of actions needed.
- o We next identified key questions which need to be addressed in order to fulfill these requirements.
- o We set initial priorities for resolving these questions based on our understanding of program needs of the Regions and States to implement their programs.
- o For each key question, we determined what type of policy statement or guidance (program or technical) would be needed.
- o We then developed a workplan which will enable EPA to meet the above prioritized requirements, and which allows adequate time for review and consensus building with interested parties.

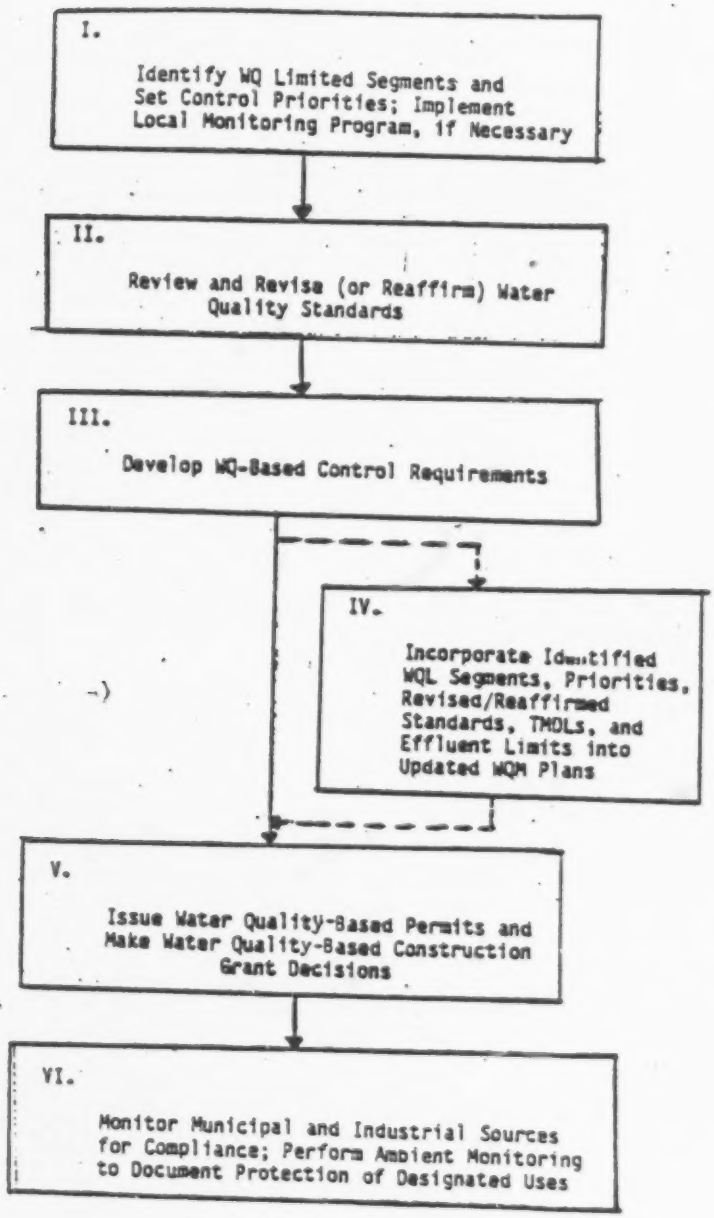
As a next step, we will be refining this analysis of program priorities to reflect additional information on State/Regional needs and resource constraints.

In many cases, policy and/or guidance has already been issued. The workplan takes into account the following major items which have already been issued or are in various stages of completion:

- Revision of WQM regulations (40 CFR Part 130, Proposed)
- Revised WQ standards (40 CFR Part 131, Proposed)
- Revised construction grant regulations (May 12, 1982, 40 CFR Part 35, interim final)
- Second round industrial permits policy (June 2, 1982)
- Advanced treatment funding policy
- Preliminary concept paper on secondary treatment redefinition
- Draft proposed rule on funding on chlorination facilities
- Section 305(b) guidance

Figure 1

MAJOR ELEMENTS OF THE WATER QUALITY-BASED STANDARDS-TO-PERMITS PROCESS



II. Issue/Problem Statement

With the nearing completion of effluent guidelines and the application of technology-based controls, EPA will now give more emphasis to the implementation of water quality-based approach to pollution control. The water quality based approach will allow States to focus on their priority water bodies and, when necessary, provide water quality protection beyond what will be achieved through technology-based controls.

Much has already been done in developing and implementing WQ-based controls. A majority of the States have developed and are presently developing a large number of water quality-based controls, at least for dissolved oxygen, ammonia and nutrients. This level of activity is expected to continue since WQ analyses are needed for construction grants projects, e.g., AT reviews; consideration of applications for redefinition of secondary treatment; issuance of second round NPDES permits; development of seasonal or other innovative permits; etc. In addition, as BAT technologies are becoming defined and as a new control techniques become available, States will need to begin developing WQ-based toxic controls.

Although States have generally made good progress in developing water quality based controls, several areas are of concern:

1. The States, in general, are not yet providing water quality based controls for toxics. Site-specific toxic pollutants generally are not included in State numerical water quality standards and field validated biomonitoring/bioassay techniques and toxicant water quality models generally are not yet available. EPA guidance and assistance is needed to improve State capabilities in this area.

2. The technical basis of some of the existing and on-going WQ-based controls could be improved. For example, existing water quality standards may include designated uses unrelated to actual or potential uses and/or criteria to protect designated uses may be unrealistically stringent. Numeric criteria for protecting designated use are often obtained from secondary sources (e.g., EPA's Red Book) without adequate consideration of local, site specific conditions; such criteria may be overly restrictive, even allowing for necessary margins of safety. Also, existing techniques for developing individual effluent limits, i.e., WLAs, may be based upon overly stringent design flows and focus on individual dischargers rather than considering other discharges as needed for calculating basin-wide TMDLs. As a result of these various factors in some cases there may be no reasonable relationship between NPDES permit effluent limits (EL) for advanced treatment and water pollution control needs to protect actual uses. Costs for complying with unrealistic ELs may be excessive and not related to measurable environmental, social, or economic benefits.

In addition to addressing the problems identified above, many of the products of this work plan are also needed in those cases where the existing water quality standards and water quality analyses are appropriate.

III. Project Objectives and Approach

The primary objective of this project is to encourage and assist State water pollution control agencies by providing the tools so that States can write appropriate water quality-based permits, where it is necessary to go beyond technology-based controls, in order to protect or restore the designated use; and to help them:

(1) correlate water pollution control requirements for all sources, both point and nonpoint, with actual attainment and restoration of beneficial uses; and

(2) assure that water pollution control benefits are reasonable compared to the costs and potential environmental tradeoffs of advanced treatment for point sources.

Related objectives of this project are to encourage and help the States to:

(1) assure that limited State and local resources are directed toward establishment of water quality based controls on a carefully planned, prioritized basis,

(2) assure adequate control of toxic pollutants,

(3) provide for adequate public input/discussion throughout the planning process, including designation of beneficial uses to be protected, selection of numeric criteria to protect the designated uses, and calculation of TMDLs/WLAs,

(4) assure availability of adequate site specific data for decision making on designated uses and narrative/numeric criteria, and

(5) provide a quantitative assessment of the relative contributions of point sources and nonpoint sources to impairment of water quality and beneficial uses.

Achievement of the first listed objective will be essential because State and local resources are simply unavailable for effective action on all WQL segments simultaneously. Therefore, it is recommended that, within each planning period, State and local agencies concentrate their efforts on the highest priority segments, and defer substantial action on lower priority segments. This will require close EPA, State, and local coordination. Success of the project will depend on whether EPA's policies and program/technical guidance effectively ensure positive responses to the following key questions for water quality limited (WQL) water bodies (segments):

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(1) What is the use to be protected?

(2) To what extent does pollution contribute to the impairment of the use?

(3) What is the level of point source control necessary to restore or enhance the use?

(4) What is the level of nonpoint source control necessary to restore or enhance the use?

(5) Is there a reasonable relationship between the treatment costs and the benefits of attaining the designated use?

Water quality planning develops responses to the above questions and usually includes, as indicated above, a discussion of costs and benefits. Such planning is a focal point of the water quality-based standards-to-permits process and should be considered as a cost-effective and beneficial alternative to immediate implementation/enforcement of existing, often unrealistic water quality standards.

Given several objectives (listed above) of this project and the need for positive responses to the water quality planning questions, the recommended approach will encourage and help the States to respond cost-effectively to the several major elements of the water quality-based standards-to-permits process as shown on Figure 1. Procedurally, as shown in Figure 2, this approach would recommend that for priority waterbodies, States should make four decisions:

(1) For each priority waterbody, the State water pollution control agency should decide if there is a need for controls beyond levels mandated by the technology-based floor, e.g., secondary treatment and BAT. If not, technology-based controls should be implemented.

(2) If WQ-based controls are needed for a particular priority waterbody, then the State should decide if sufficient site-specific data are available to answer the five key questions listed above.

(3) If sufficient site-specific data are not available, the State should decide if it is able to provide more time for data collection and analysis. If so, data collection would proceed and the questions answered. Local cooperative monitoring programs should be used to collect the needed data, where feasible. If the State does not provide additional time for data collection, the State would proceed to implement WQ-based controls with a margin of safety sufficient to compensate for the lack of site-specific data.

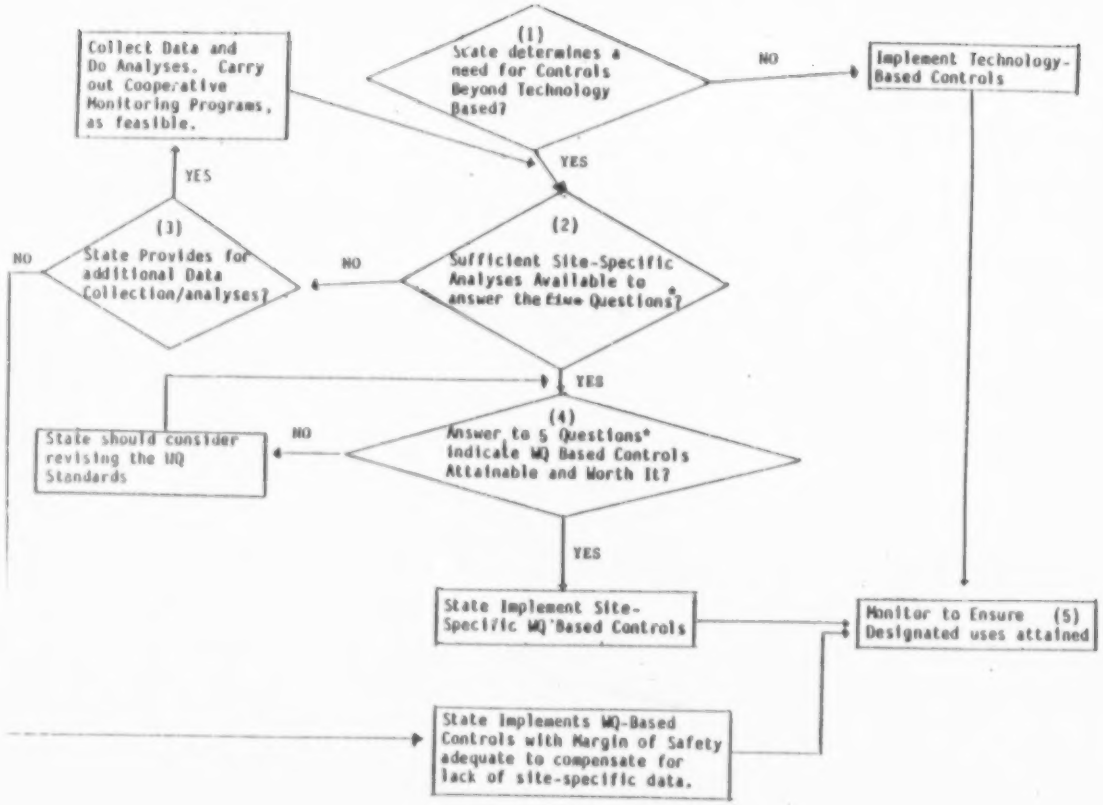

Figure 2. Suggested Process for Establishing WQ-Based Control in Priority Waterbodies.

(4) If sufficient site-specific data are available, the State should decide if the existing WQ standards are appropriate. If not, then the State should consider revising the standards. Once standards are revised, the State would implement the site-specific WQ-based controls.

(5) Once the controls are in-place, follow-up monitoring should be done to ensure that the designated uses are attained. Local cooperative monitoring programs should be considered as a means of obtaining this data.

Once the State makes its decisions on a priority waterbody, the State would:

(1) submit the WQL segment identification and priorities, revised/reaffirmed standards, TMDLs, and WLAs to EPA for approval, and

(2) Incorporate the approved standards, TMDLs and WLAs into the States' WQM plans. (Note that section 303(d) requires EPA to designate WQL segments and establish TMDLs if the State submittal is disapproved.)

Following are several considerations significant to the implementation of this approach:

(1) Site-specific numeric criteria often can be established, using available technologies, for conventional and many toxic pollutants. Such site-specific criteria may be less restrictive than the section 304(a) national criteria.

(2) BAT guidelines will be published for all major industrial categories during FYs 1983 and 84. Under the Second Round Industrial Permitting Policy. permit issuance to affected industries should be focused on the highest priorities.

(3) In many cases, effluent limits, i.e., WLAs/TMDLs, can be established from pollutant-by-pollutant calculations or in the case of toxic pollutants may be calculable from biomonitoring (biological surveys and bioassays) involving whole effluents.

(4) Nonpoint pollutant sources contributing to use impairment, if any, should be determined as an essential element of the water quality analysis for all priority WQL segments.

(5) The State section 305(b) reports should serve as the primary vehicle for communicating:

- Identification of WQL segments and priorities
- TMDLs, WLAs, and priorities for implementation.

It is essential to understand that, for many WQL segments, the optional water quality planning analyses will be resource intensive. Site specific information is required for substantial responses to each of the five key questions. In addition to this "data burden", the States may feel burdened by the large number of policy and guidance documents generated by EPA Headquarters to "help" them implement the water quality-based standards-to-permits approach. Therefore, this approach includes a recommendation (included in Task 9) that local (municipal and industrial) resources be committed to development of the data base needed for local decision making. Participation by local dischargers in cooperative local monitoring programs will help to minimize the State resource burden, also, this will help ensure active local participation in discussions of beneficial uses, necessary levels of protection, costs and benefits of use attainment, etc.

EPA must stress that, while the Clean Water Act requires the WQ-based controls be established where necessary to meet water quality standards, the specific water quality-based standards-to-permits process here is generally a voluntary, optional approach but with substantial, potential benefits to State and local interests. Finally, we need to understand that implementation of this approach will take considerable time both because of State and local resource limitations and because of the complexity of the decision making process.

IV. Key Timing Requirements

The Clean Water Act and its associated regulatory structure establish the framework within which technology-based and water quality-based controls will be implemented. This workplan focuses on establishment and implementation of water quality-based controls. There are relatively few key timing requirements imposed on EPA, States, and the regulated community to implement the water quality-based standards-to-permits project. The key requirements we have identified are as follows:

Finite date imposed by statute or regulation

1. Review/revise water quality standards for construction grants

   - Section 24 Municipal Waste Treatment Construction Grants Amendments-December 29, 1984

2. Compliance

   - Section 21 Municipal Waste Treatment Construction Grants Amendments-July 1, 1988 (Only for POTWs with 301(I) waivers)

     Note: Most POTWs still have a 1977 compliance date.

Cyclic Demand Imposed by Statute

1. Certification of WQM plans-annual

   o Section 303 (e), Section 208(b)(3)

   2. Review/revise WQ standards-triennial

      a. Desginated uses

      b. Criteria (Statewide, site-specific)

         o Section 303(c)

         o Also has administrative date imposed-OWOGAS-1983 (priority waters)

3. Section 305(b) requirements - biennial

   a. State Section 305(b) reports

   b. National water quality report to Congress

      o Section 305(b)

4. Section 106 work plan - annual

      o Section 106

V. Important Questions to be Addressed

The purpose of this section is to focus attention on important questions related to the water quality-based standards-to-permits project where implementation problems can arise. Such questions should be addressed by EPA's policy and guidance documents. The questions listed below are based on the following:

- Discussion with Regions and States
- Higher management's concerns
- Congressional concerns (e.g., 1981 amendments, Congressional inquiries)
- Regulatory and administrative requirements
- Needs of various program areas (e.g., NPDES permits, construction grants)
- Experience from ongoing program products (e.g., AT project reviews, WQM Regional reviews, OWRS "white paper" on WLAs/TMDLs).

These questions were organized into three priority groups:

Group 1. (Highest Priority) Those for which policy/program guidance and technical guidance are needed in advance of the FY 84 Regional/State program planning cycle (February 1983).

Group 2. (Medium Priority) Those for which guidance is strongly needed (preferably in FY 83), but which are not needed prior to the FY 84 planning cycle or for which technical/scientific material will not be available in time to meet a February 1983 date.

Group 3. (Lower Priority) Those for which guidance is desirable, but is less urgent and can be issued in FY 84-FY 86.

The questions are shown on Table 1.

TABLE I
KEY QUESTIONS TO BE ADDRESSED

GROUP 1 (February 1983)

A. Priority Waterbodies

Procedural Questions:

- How should section 303(d) priority waterbody (segment) rankings be related to priority permit lists, priority construction grant project lists, priority pollutants (toxicants), etc. to form an over-all system?

Technical Questions:

- What techniques are available to help screen and rank priority waterbodies with conventional or toxic pollutant problems?

B. Revise/Modify Water Quality Standards

Procedural Questions:

- How should criteria for toxic and conventional pollutants be developed to be more readily adaptable to permitting and other implementation programs?

Technical Questions:

- What procedures and technologies are available and should be used for developing site-specific criteria and/or modifying Section 304(a) national criteria for toxic and conventional pollutants consistent with local conditions?

C. TMDLs/WLAs

Procedural Questions:

- What constitutes adequate and acceptable TMDLs/WLAs for toxic and conventional pollutants?
- What submissions to EPA are required?
- How should revisions to TMDLs/WLAs be submitted?
- What priorities should be followed in performing TMDLs/WLAs for toxic and conventional pollutants?
- How should TMDLs/WLAs be performed between States with common waters?

TABLE I, Cont'd.

Technical Questions:

- o What design conditions (flows, temp, pH) are acceptable?
  - Does the WLA consider the effect of changes in effluent quality on model parameters and assumptions?
  - What is the likelihood of the critical conditions (e.g., flow, temp, pH) occuring simultaneously?
- o What constitutes an acceptable WLA for BOD/DO/NH_3 in simple systems (i.e., simplified method) or complex systems in rivers and streams?
- o What constitutes an acceptable WLA for BOD/DO and for eutrophication in lakes and impoundments?
  - Have the water quality inputs of algae and rooted aquatics been adequately considered in the WLA?
- o What is the appropriate permit averaging period (i.e., 1-, 7-, 30-days)?
- o What guidance should we provide on modeling toxic pollutants and developing their WLAs?
- o What guidance should we provide on the bioassay/biosurvey approach to developing toxic WLAs?

D. Water Quality Based Permits and Construction Grant Decisions

Procedural Questions:

- o What is EPA's program policy and direction for issuance of the second round of NPDES permits?
- o What is EPA's general policy for the review of proposed POTW advanced treatment facilities?
- o What is EPA's funding policy for the construction of POTW chlorination facilities?
- o What procedures and criteria should be used for the review of grant applications for funding CSO facilities construction?

TABLE I, Cont'd

Technical Questions:

- o How do permit writers set limits for toxic substances, where:
  - no numerical water quality standards exist?
  - no TMDL/WLA is calculable?
  - the complexity of effluent(s) rules out using the chemical-by-chemical approach?
- o Can a permit writer use effluent toxicity data to derive permit limits? If so, how?

E. Monitoring Program Guidances

Procedural Questions:

- o What is EPA's monitoring strategy and what are the State, local and EPA roles?
- o How can local resources be used for ambient monitoring?

Technical Questions:

- o Does EPA have a data management system, with analytical capabilities to support water quality based decision making?

GROUP 2 (FY-1983)

A. Revise/Modify Water Quality Standards

Procedural Question:

- o What procedures should be used for establishing site-specific criteria or modifying section 305(a) national criteria for the control of toxic pollutants?

B. TMDLs/WLAs

Technical Questions:

- o What constitutes an acceptable WLA for nutrient and eutrophication impacts in rivers and streams?
- o What constitutes an acceptable WLA for toxic substances in rivers and streams?

- o What are the important factors (qualitative and quantitative) influencing the margin of safety associated with each step of the standards to permits process?

- o What guidance should be provided on developing innovative WLAs for permits.

GROUP 3 (FY74-75)

A. Over-all Standards to Permits Process:

Procedural Question:

- o What key pieces of guidance are necessary to implement a minimally acceptable standards to permits process?

B. TMDLs/WLAs:

Technical Questions:

- o What constitutes an acceptable WLA for BOD/DO and toxic priority pollutants in estuaries?

- o What constitutes an acceptable WLA for nutrient and eutrophication impacts in estuaries?

- o What design conditions are acceptable for effluent flow and rate constants?

C. Ambient Monitoring Strategy and Guidance

Technical Questions:

- o How should ambient monitoring programs be designed:

  - to document water quality improvements due to individual water pollution control actions?

  - to document water pollution control impacts on designated uses?

  - to document trends for entire water quality limited segments?

VI. Workplan Implementation

The proposed workplan is capable of meeting the requirements laid out in the preceding sections. This section discusses our approach toward managing the Water Quality-Based Standards-to-Permits Process, resources and priorities, and some implementation issues.

1. Project Management

To act as the focal point for overall coordination and implementation of this project plan, a Water Quality Division Directors Group has been formed. This group consists of a chairman (Fred Leutner) and the directors of seven participating divisions (Monitoring and Data Support Division, Criteria and Standards Division, Office of Analysis and Evaluation, Water Planning Division, Facilities Requirements Division, Permits Division and Enforcement Division). The functions of the group are to (a) assist the Office of Water Regulations and Standards in revising and implementing the project plan, (b) oversee and coordinate implementation of the plan, including tracking milestones and resource utilization, (c) identify implementation problems and recommended solutions to the Office Directors, (d) identify areas requiring policy or management decisions and ensure that they get raised to the appropriate level; and (e) coordinate related activities such as research requirements, budget development, operating guidance development, and Regional oversight.

Regions will receive a Key oversight role. This will be initiated during the project workplan development. The four lead Regional Divisions are as follows:

Region IV - Environmental Services Division,
Region V - Water Division,
Region VI - Water Division,
Region VIII - Environmental Services Division

They will review this priority project workplan, subsequent workplan revisions, and project outputs.

An accounting system for tracking milestones, progress, and accomplishments will be developed.

2. Resources and Priorities

A necessary and preliminary step to providing practicable guidance to the States on the standards-to-permits process is a description of the relative project priorities and an analysis of the resources available to meet these priorities. The attached workplan outlines tasks necessary to accomplish this. The objective is to provide options to the Office of Water for priority setting within the standards-to-permits process.

3. Implementation Issues

(a) Level of review

The attached workplan generally assumes that EPA guidance products prepared by OWRS will go through several steps of review:

a. Internal program office (OWRS) review
b. Review by other program offices within OW
c. Regional coordinators review
d. ASIWPCA review
e. Standing Work Group review
f. OW Policy Review Group (PRG)
g. Additional steps (e.g. Red Border) determined PRG
h. Issuance by OD(s) or AA

If all of these steps are followed (especially steps c, d, and e), we can build a certain amount of consensus behind the proposed approach and increase the likelihood of responsive implementation. We believe the additional review time incurred is worthwhile, and it can be limited by imposing appropriate deadlines for comments.

(b) lack of field testing

Some of the techniques upon which the standards to permits process is based have not been carefully verified by extensive field testing or case studies; therefore, we will need to expect some changes in the guidance as we gain more experience. Examples of such techniques include applying water quality models for toxic substances, and developing wasteload allocations by the general toxicity (bioassay/biosurvey) approach. During this implementation phase, in addition to adjusting the guidance a required by new data, we will also carry out, to the extent feasible, field testing and case studies.

VII. Task Assignments and Division of Responsibilities

State Responsibilities: The States are the primary implementors of the standards-to-permits process. Although the Clean Water Act requires EPA to provide general oversight and review of certain program actions, States are responsible for identifying priority waters, developing water quality standards and wasteload allocations/total maximum daily loads, and incorporating these water quality based limits into permits. Also, the States are responsible for developing construction grant priority systems and priority lists. The States are responsible for issuing NPDES permits and recommending grant approvals, when these programs have been delegated, and for compliance monitoring and appropriate enforcement actions.

Local Role: EPA encourages local participation in the standards-to-permits process. Involving the regulated community in the process will ensure that States have access to additional existing data. As described above, EPA should encourage cooperative data collection and analysis efforts, leading to development of a better data base and better decisions. An open process attracts relevant information and promotes review of the technical background and policy assumptions made. The State or areawide agency responsible for the planning may experience substantial cost savings since it is often in the interest of the regulated parties to provide relevant data. Also, many municipalities will have a vested interest in the process because they pay for 100% of POTW O&M costs and an increasing share of the construction capital costs. Finally, open public review of the process will lead to a wider appreciation of its validity.

Another advantage is that, by placing the water quality-based standards-to-permits decision making in the planning context, the assumptions on which water quality-based controls are developed can be examined more thoroughly; also, the public can examine the costs and other consequences of meeting water quality goals and objectives. EPA expects that developing water quality-based controls in the planning process will result in fewer legal challenges than if calculations are completed without extensive public debate.

EPA Role: Under the Clean Water Act, EPA is required to carry out a number of activities involved in preparing national assessments and in implementing water quality and technology based controls. As noted above, the EPA Regions are also required to overview State implementation of the Act. Headquarters responsibilities for carrying out the individual components of this priority plan are as follows:

- Monitoring and Data Support Division, OWRS: Over all coordination and lead on standards-to-permits process, identification of priority waterbodies, development of WQ-based controls using pollutant-bypollutant and bio-monitoring techniques (i.e., development of total maximum daily loads/wasteload allocations), and monitoring the effects of controls (before and after studies).

- Water Planning Division, OWPO: Development of Water Quality Management Regulations and Nonpoint Source Program.

- Office of Analysis and Evaluation, OWRS: Budget Office for OWRS, coordination of Regional OWOGAS reviews.

- Enforcement Division, OWEP: Coordination of compliance monitoring, with priority waters.

- Criteria and Standards Division, OWRS: Water quality criteria and standards.

- Permits Division, OWEP: Development of interim guidance on EPA Regional use of water quality permitting procedures for toxics (with MDSD), direct research and provide guidance on the application of biological screening procedures in permits, development of complex effluent toxicity data base, and guidance on issuance of NPDES permits.

- Facility Requirements Division, OWPO: Construction grants, including advanced treatment (AT) reviews (with OWRS), AT policy, AT review technical guidance, revised secondary treatment definition regulations, construction grant priority systems, river reach studies for grant priorities, and POTW construction before-and-after studies (shared lead with MDSD).

VIII. Products/Outputs

Each of the OW program offices has participated in the development of this workplan. The ORD has also participated and an analysis of ORD contributions has been prepared. Discussions among the several offices plus a careful analysis of FY 83 operating plans and FY 84 program plans have demonstrated the existence of planned outputs/products responsive to each of the overall project objectives. Therefore it will be necessary only to organize and manage completion of the planned activities so that the Regional Offices and State agencies have necessary guidance available for timely and effective project implementation. As part of the on-going project implementation, the completed and planned products will be carefully analyzed for consistency with project objectives, timeliness, costs and priorities to confirm that there are no major gaps in the needed guidance.

Table 2 lists workplan tasks consistent with the project flowchart elements of Figure 1. Each task is a key element in the implementation of the water quality-based standards-to-permits project. Each of the eleven tasks is detailed in Attachment A, which provides a description of the tasks: purpose, method, end products, subtasks, and responsible division(s). Each subtask is further described by subtask summary sheets, which give the following information:

- Task (number and name) of which the subtask is a part,
- Subtask (letter and name),
- Regulations supported by the subtask,
- Office, division, and individual responsible for the subtask,
- Purpose and description,
- Schedule,
- Intended audience and agency consultation,
- Resource needs,
- Contractor support,
- Nature of policy decisions needed by AA,
- ADP support requirements.

These subtask summaries are on file with the MDSD and the divisions responsible for doing the work. Attachment B is a sample subtask summary.

TABLE 2. MAJOR ELEMENTS OF THE WATER QUALITY-BASED STANDARDS-TO-PERMITS PROCESS

I. Identify WQ Limited Segments and Set Control Priorities;

Task #2*: Provide Guidance for Identifying and Prioritizing WQL Segments.

II. Review and Revise (or Reaffirm) Water Quality Standards

Task #3: Issue Revised Water Quality Standards Regulations and Supporting Guidance.

Task #4: Issue Water Quality Criteria Guidance and Interpretation Document

III. Develop WQ-Based Control Requirements

Task #5: Revise Regulation and Supporting Guidance for Wasteload Allocations/Total Maximum Daily Loads

IV. Incorporate Identified WQL Segments, Priorities, Revised/Reaffirmed Standards, TMDLs, and Effluent Limits into updated WQM Plans

Task #6: Provide Guidance for Updating CPPs and WQM Plans, and Priority Systems

V. Issue Water Quality-Based Permits and Make Water Quality-Based Construction Grant Decisions

Task #7**: Provide Guidance for Issuing Water Quality-Based Permits

Task #8: Issue Regulation and Supporting Guidance for Making Water Quality-Based Construction Grant Decisions

VI. Monitor Municipal and Industrial Sources for Compliance***; Perform Ambient Monitoring to Document Protection of Designated Uses

Task #9: Provide Guidance on Water Quality Monitoring and Local Cooperative Monitoring Programs

Task #10: Issue Revised Water Quality Management Regulation and Supportive Guidance on the Overall Margin of Safety

Task #11: Provide Data Management Support

*Task #1 is Project Implementation and Management
**Task #7 is not covered under the Office of Water Operating Guidance and Accounting System
***Separate Priority Project Workplan (OWEP)

IX. Resource Requirements

Tables 3 and 4 show estimated EPA Headquarters resource requirements to complete the necessary policy and guidance documents for Regional Office and State implementation of the water quality-based standards-to-permits project. As stated above, the several participating program offices already have completed or have planned products responsive to each of the project objectives. Consequently, most of the estimated resource requirements were obtained directly or by inference from the 1984 Office of Water Budget/Program Plans submitted to OPRM on July 7, 1982. ORD requirements are not included but will be added when they become available. ORD activities will be discussed in the report entitled "Office of Research and Development Support to the Office of Water for Water Quality Based Controls."

Table 3 shows estimated resource requirements for each project task. Requirements for FY 1983 are shown, as are projected requirements for FY 1984. Total project requirements, excluding ORD, are estimated at about 45 FTE plus 1 million for contract support. The largest requirements are related to regulations and guidance for water quality standards (Tasks 3 and 4) and TMDL/WLA guidance (Task 5). Again, it is important to understand that these are Headquarters Office of Water requirements only.

Table 4 shows the estimated resource requirements for each of the participating offices, excluding ORD. The largest requirements are for MDSD (11.43 FTE and 0.787 million) and CSD (27.44 FTE).

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Table 3
Resource Requirements for the Water Quality
Based Standards-to-Permits Project

Task	Description	*EPA Headquarters Requirements (FTE/Contracts**) FY 83	FY 84
1	Project Implementation and Management	.82/15	.22/0
2	Provide Guidance for Identifying and Prioritizing WQL Segments.	.23/25	.02/5
3	Issue Revised WQS Regulations and Supporting Guidance	14.45/0	0/0
4	Issue Water Quality Criteria Guidance and Interpretation Document	8.78/0	4.21/0
5	Revise Regulation and Supporting Guidance for WLA/TMDL	3.40/265	.39/100
6	Provide Guidance for Updating CPPs, WQM Plans, and Priority Systems	.40/0	0/0
7	Provide Guidance for Issuing Water Quality-Based Permits	.52/115	.21/10
8	Issue Regulation and Supporting Guidance for Making Water Quality-Based Construction Grant Decisions	1.75/0	1.48/100
9	Provide Guidance on Water Quality Monitoring and Local Cooperative Monitoring Programs	1.60/120	.85/50
10	Issue Revised WQM Regulation and Supporting Guidance on the Overall Margin of Safety	.67/40	.03/20
11	Provide Data Management Support	2.85/97	1.67/125
	TOTALS	35.47/677	9.08/410

* Excludes ORD requirements (to be supplied)
** $1000's

Table 4
Resource Requirements for
Participating Offices*

Office/Division	Resource Requirements (FTE/Contract**) FY 83	FY 84
OWRS		
- MDSD	8.89/527	2.54/260
- CSD	23.23/0	4.21/0
OWPO		
- FRD	2.26/20	2.33/150
- WPD	.88/15	0/0
OWEP		
- PD	.21/115	0/0
TOTALS	35.47/677	9.08/410

* ORD requirements (to be supplied)
** $1000's

X. Schedule for Completion of Headquarters Policy and Guidance Documents

Table 5 shows actual or planned completion dates for policy and guidance documents for implementation of the standards-to-permits project. Completion dates for most individual products are not shown on Table 5 but can be found in Attachment A. For clarity, Table 5 shows only the completion dates for major regulatory changes, initial or primary policy and guidance documents, and specialized or supporting guidance documents.

It is evident from Table 5 that all of the regulatory, policy, and primary guidance documents will be completed by June, 1983. Table 5 also shows that all of the specialized and supporting guidance will be completed by December, 1985.

From this information it is clear that EPA can plan on at least partial implementation (i.e., implementation of key project elements based on initial EPA policy and guidance) of the standards-to-permits project during FY 1984 and full implementation during FY 1985. Two things are needed, however, for this to happen. First, some of the completion dates in Table 5 assume that key scientific/technical work now underway will allow completion of detailed procedural guidance on many of the more complex subject areas. Second, completion schedules for at least the major regulatory, policy, and guidance documents need to be monitored and managed carefully to avoid costly "slippage" and confusion in project implementation. This work is included under Task #1, Project Implementation and Management.

Finally, many of the guidance documents will experience an iterative process of improvement through issuance, implementation, and revision/reissuance based on the latest scientific/technical and source information plus implementation experience. Thus, it should be anticipated that the need for updated and revised program/technical guidance will continue for a number of years.

Table 5
Schedule for Completion of
Headquarters Policy & Guidance Documents

Task	Completion Date
1. Project Implementation and Management	
- Water Quality Standards Costing Project	3/83
- Priority and resoruce analysis for the standards-to-permits process	6/83
2. Provide Guidance for Identifying and Prioritizing WQL Segments	
- Guidance for problem area identification and priority setting	3/83
- Guidance (screening manual) for conventional and toxic organic pollutants	2/84
- Guidance (screening manual) for toxic metal pollutants	5/85
3. Issue Revised WQS Regulation and Supporting Guidance	
- Revised WQS regulation	5/83
- Guidance on use attainability analysis	5/83
- Guidance on benefit cost assessment	5/83
- Guidance on procedures for analyzing factors impacting use attainability	12/84
- Guidance on levels of protection	2/85
4. Issue Water Quality Criteria and Interpertation Document	
- Guidrnce on dissolved oxygen criteria	4/83
- Guidance on ammonia and chlorine criteria	7/83
- Guidance on sediment criteria	2/85
- Guidance on marine and estuarine criteria	1/85
- Guidance on site-specific criteria development	5/83

Table 5 Con't

Task	Completion Date
5. Revise Regulation and Supporting Guidance for WLAs/ TMDLS	
- WLA/TMDL portion of WQM regulation	2/83
- General guidance on standards-to-permits process	9/84
- WLAs for streams and rivers	
o BOD/DO, ammonia toxicity	1/84
o Nutrient/eutrophication	9/84
o Toxic pollutants	9/84
- WLAs for estuaries	
o BOD/DO, ammonia toxicity	9/85
o Nutrient/eutrophication	9/85
o Toxic pollutants	12/85
- WLAs for lakes and impoundments	
o BOD/DO, ammonia toxicity	9/85
o Nutrient/eutrophication	1/84
o Toxic pollutants	6/85
- Design conditions	9/85
- Innovative permits (time variable WLAs and permit(s)	9/85
- Guidance on general toxicity approach	12/83
6. Provide Guidance for Updating CPPs, WQM Plans, and Priority Systems	
- FY-83 Guidance on CPP and WQM plan updates	1/83
- Guidance on State priority systems for c.g.	12/82
- FY-84 Guidance on Section 205(j) grant eligibilities (FY-82 and 83 guidance is developed and available)	3/83

Table 5 Con't

Task	Completion Date
7. Provide Guidance for Issuing W.Q.-Based Permits	
- Interim guidance for use of biological testing procedures in NPDES permit issurance	7/83
- Guidance on selecting permit averaging periods	6/84
8. Issue Regulation and Supporting Guidance for Making Water Quality-Based Construction Grant Decisions	
- POTW advanced treatment funding policy	12/82
- POTW chlorination facility funding policy	6/83
- Advanced treatment review technical guidance	6/83
- CSO control handbook and strategy	3/83
9. Provide Guidance for Water Quality Monitoring and Local Cooperative Monitoring Programs	
- Program guidance on monitoring and WLAs	3/83
- Monitoring and WLA resource analysis	3/83
- Guidance for preparing 305(b) reports	12/82
- Guidance on Monitoring for water quality trends	9/83
- Guidance on staff quality assurance programs	12/83
- Guidance on documenting water quality improvements due to advanced treatment construction	6/83
10. Guidance on the Overall Standards-to-Permits Process: Issue Revised WQM Regulation and Supporting Guidance on the Overall Margin of Safety	
- Promulgate revised WQM regulation	2/83
- Guidance on overall margin of safety for standards-to-permits process	9/84
11. Provide Data Management Support for the Standards-to-Permits Project	
- Complex effluent toxicity information system	3/83
- Provide reach file water quality analytic capabilities	12/84
- Initiate BIOSTORET capabilities	12/84

Attachment A

TASK DESCRIPTION #1

Title: Project Implementation and Management.

Purpose: To coordinate the work being done on the project, track progress and accomplishments, and account for resource expenditures.

Method: Under the leadership of the Project Coordinator, a Water Quality Division Directors Group will act as the focal point for coordinating and implementing this project plan.. The functions of the group will be to: (a) assist in revising and updating the project plan, (b) oversee and coordinate implementation of the plan, including tracking milestones and resource utilization, (c) identify implementation problems and recommend solutions to the Office Directors, (d) identify areas requiring policy or management decisions and ensure that they are raised to the appropriate level, and (e) coordinate related activities such as research, budget development, operating guidance development, and Regional oversight.

End Product.: Project management and coordination, progress and milestone tracking, accounting of resource expenditures.

Subtasks:	Start	Finish
A. Develop, revise, and update the priority project plan (PPP); oversee and coordinate plan implementation.	7/82	Continuing
B. Prepare priority and resource analysis for standards to permits process.	10/82	10/83
C. Water Quality standards costing project	9/82	3/83
D. Develop and implement an accounting system for tracking milestones, progress and accomplishments, including Regional reporting of percentage number of segments meeting designated uses.	10/82	Continuing

Responsible Divisions: Water Quality Division Directors Group
Chairman - OWRS/MDSD
Members - OWRS/CSD, OAE
OWPO/FRD, WPD
OWEP/PD, ED

TASK DESCRIPTION #2

Title: Provide guidance for identifying and prioritizing WQL segments.

Purpose: To provide technical and policy guidance to EPA Regions and States on: how to identify waters where the established technology-based effluent limitations are not adequate to implement water quality standards, and how to develop control priorities for these waters.

Method: Water quality analysis and, in some cases, modeling are used to predict the level(s) of water quality that would be achieved by implementing technology-based effluent limitations. Control priorities are based on the severity of the problems and specific national priorities.

End Products: Program policy technical and program guidance documents.

Subtasks:	Start	1st Draft	Finish
A. Develop guidance for problem area identification and priority setting	6/82		3/83
B. Develop guidance (screening manual) for conventional and toxic organic pollutants	2/82	2/82	2/84
C. Develop guidance (screening manual) for toxic metal pollutants	2/83	8/83	5/85

Responsible Division: OWRS/MDSD

TASK DESCRIPTION #3

Title: Issue Revised Water Quality Standards Regulations and Supporting Guidance

Purpose: To issue a revised water quality standards regulation and supporting program guidance.

Method: In addition to following prescribed Agency procedures for regulation and guidance development, ASIWPCA, industrial and enviromental groups will be consulted in developing early drafts of the regulation and guidance prior to publication for formal public comment. In addition, the guidance will be field-tested and modified appropriately prior to publication. Public meetings on the Regulation will be held during the formal comment period.

End Products: Federal Regulation and supporting guidance.

Subtasks:	Start	Final
A. Issue revised water quality standards regulations	7/78	7/83
B. Develop guidance on water body survey and assessments/use attainability analysis	10/81	7/83
C. Develop guidance on benefit-cost assessment	5/82	7/83*
D. Develop guidance on procedures for analyzing physical, chemical, and biological impacting use attainability	7/82	9/84
E. Guidance on levels of protection	7/82	9/84

Responsible Divisions: Subtasks A-B OWRS/CSD
Subtasks C OWRS/OAE and CSD
Subtasks D-E OWRS/CSD

TASK DESCRIPTION #4

Title: Issue Water Quality Criteria and Interpretation Document

Purpose: To develop and issue more flexible criteria guidance whereby the user can make scientifically supportable judgments in attempting to solve specific water quality problems.

Method: To restructure the way water quality criteria guidance is developed under Section 304(a) of the Clean Water Act by providing greater emphasis on information affecting actual implementation as opposed to a narrow, limited, scientific decision. The first examples of the new criteria approaches will be in the development of criteria guidance for dissolved oxygen, ammonia and chlorine.

End Products: Revised water quality criteria.

Subtask:	Start	Finish
A. Interpretation and implementation guidance for dissolved oxygen criteria	7/80	1/83
B. Interpretation and implementation guidance for ammonia and chlorine criteria	1/81	6/83
C. Interpretation and implementation guidance on sediment criteria related to harmful pollutant concentrations		9/84
D. Guidance on marine and estuarine criteria development		9/84
E. Guidance for site-specific criteria development	1/82	5/83

Responsible Divisions: ORD and OWRS/CSD

TASK DESCRIPTION #5

Title: Revise Regulation and Supporting Guidance for Wasteload Allocations/Total Maximum Daily Loads.

Purpose: To revise the WQ Management Regulation placing greater emphasis on wasteload allocations/total maximum daily loads, and to provide technical guidance on WLA/TMDL techniques.

Method: Either pollutant-specific techniques or bioassay/biosurvey techniques can be used to establish what levels of pollution control are needed in order to meet the applicable water quality standards. These two wasteload allocation approaches are an important part of the standards to permits processes described in the revised WQ Management Regulation.

End Products: A revised WQ Management Regulation and supporting technical guidance on WLA techniques.

Subtasks:	Start	1st Draft	Fini
A. Revision of WLA/TMDL portion of WQM regulation	6/82		2/83
B. Develop WLA guidance on the pollutant-specific approach			
B1 Book I - General Guidance			
o Chapter I - Standards-to-Permits Process	12/82	4/83	9/84
o Chapter II - Program Guidance	7/82	8/82	6/83
B2 Book II - WLAs for Streams and Rivers			
o Chapter I - BOD/DO and Ammonia Toxicity Impacts	10/81	1/82	1/84
o Chapter II - Nutrient/Eutrophication Impacts	1/82	8/82	9/84
B3 Book III - WLAs for Estuaries			
o Chapter I - BOD/DO and Ammonia Toxicity Impacts	6/83	2/83	9/85
o Chapter II - Nutrient/Eutrophication Impacts	6/83	2/84	9/85
B4 Book IV - WLAs for Lakes and Impoundments			
o Chapter I - BOD/DO Impacts	6/83	2/84	9/85
o Chapter II - Nutrient/Eutrophication Impacts	10/81	1/82	1/84
B5 Book VI - Design Conditions			
o Chapter I - Stream Flow	3/82	8/82	6/84
o Chapter II - Temperature	6/82	11/82	9/84
o Chapter III - pH	9/82	12/82	12/84
o Chapter IV - Effluent Flow	6/83	12/83	9/85
o Chapter V - Rate Constants	6/83	12/83	9/85

TASK DESCRIPTION #5 (cont'd)

Subtasks:	Start	1st Draft	Finish
B6 Book IX - Innovative Permits			
o Chapter I - Time Variable WLAs and Permits	6/83	12/83	9/85
B7 Chapter III - Guidance for Modeling Toxic Pollutants in the WLA Process			
o Book II	6/82	3/83	9/84
o Book III	9/83	3/84	12/85
o Book IV	3/83	9/83	6/85
C. Develop WLA guidance on the general toxicity (bioassay/ biosurvey) approach	1/81		12/83

Responsible Divisions: Subtask A - OWPO/WPD,OWRS/MDSD
Subtask B - OWRS/MDSD
Subtask C - OWRS/MDSD, OWEP/PD

* update and revise by 12/84

TASK DESCRIPTION #6

Title: Provide Guidance for Updating CPPs, WQM Plans and Priority Systems

Purpose: To organize and present the several elements of water quality based decision making for WQL segments in a planning package with which the Clean Water Act requires NPDES and construction grants consistency. This will help ensure effective implementation of point source and nonpoint source pollution control requirements.

Method: Sections 106, 205 (g), 205(j), 208, 303, and 305 of the CWA set out the planning and management activities to be undertaken by States and local governments to establish their water quality goals and to develop programs which will meet those goals. Through its CPP, the State defines its overall planning process including the development of TMDL's, priority segments, and consistency of NPDES permits and construction grants with State WQM plans. Updated CPP's consistency between WQM plans and appropriate priority systems are important to achieve an effective water quality based approach.

Subtasks:	Start	Finish
A. Develop guidance on CPP and WQM plan updates...coordinate with revised WQM regulations to assure consistency		
A1 FY 83 guidance	10/82	1/83
A2 FY 84 guidance (updated)	6/83	9/83
B. Develop guidance on state priority systems for construction grants	5/82	12/82
C. Develop guidance on Section 205(j) grant eligibilities	9/82*	2/84**
C1 FY 82-FY 83 guidance	8/82	9/82
C2 FY 84 guidance (updated)	12/82	3/83

Responsible Divisions: Subtask A - OWPO/WPD
Subtask B - OWPO/FRD
Subtask C - OWPO/WPD

TASK DESCRIPTION #7

Title: Provide Guidance for Issuing Water Quality-Based Permits

Purpose: To issue and approve NPDES permites based on WLAs/TMDLs in water quality limited segments.

Method: Wasteload allocations are implemented by incorporating them, as enforceable conditions, into NPDES permits.

Subtasks:	Start	1st Draft	Finish
A. Develop interim guidance for use of biological testing procedures in NPDES permit issuance.	11/82	5/83	7/83
B. Develop guidance for selecting 1-, 7-, 30-day permit averaging periods.	3/82	8/82	6/84

Responsible Divisions: Subtask A - OWEP/PD, OWRS/MDSD
Subtask B - OWRS/MDSD

TASK DESCRIPTION #8

Title: Issue Regulation and Supportive Guidance for Making Water Quality-Based Construction Grant Decisions

Purpose: To make construction grant decisions (e.g., advanced POTW treatment facilities funding) consistent with revised/reaffirmed water quality standards and water quality-based ELs.

Method: EPA will publish guidance and review funding applications for advanced treatment facilities, chlorination facilities, and CSO controls based on TMDLs and ELs as presented in approved, updated WQM plans.

End Products: Policy and guidance on grant applications for POTW construction.

Subtasks:	Start	Finish
A. Develop a POTW advanced treatment funding policy	6/80	12/82
B. Develop a POTW chlorination facility funding policy (included in final C.G. regulation)	5/82	6/83
C. Develop an advanced treatment review technical guidance	6/82	6/83
D. Develop a CSO control handbook and strategy	8/80	3/83

Responsible Division: OWPO/FRD

TASK DESCRIPTION #9

Title: Provide Guidance for Water Quality Monitoring* and Local Cooperative Monitoring Programs

Purpose: To provide guidance on appropriate state, local, and EPA roles in ambient monitoring, program priorities, and to promote and facilitate development and implementation of cooperative State, and local monitoring programs.

Method: Work with Standing Work Group on Monitoring and Wasteload Allocations, consisting of representatives from States, industry and environmental groups, EPA Regions and other EPA offices to develop guidance.

End Products: Improved State, local and EPA understanding of their roles in water monitoring, also, improved coordination of EPA, State, and local monitoring resources. Development of a data base for preparing Section 305(b) reports, EPA reports to Congress, and local decision making.

Tasks:	Start	Finish
A. Develop program guidance on monitoring and WLAs	7/82	3/83
B. Prepare monitoring and WLA resource analysis	10/82	10/83
C. Develop guidance for preparing section 305(b) reports	8/82	3/83
D. Develop guidance on monitoring for water quality trends	10/82	9/83
E. Develop guidance on State quality assurance programs**	7/82	12/83
F. Develop guidance on documenting water quality improvements due to advanced treatment construction	10/82	6/83
G. Provide guidance on establishing local cooperative monitoring programs	12/82	6/83
H. Develop case studies of cooperative monitoring programs	11/82	3/83

Responsible Divisions: Subtasks A-D - OWRS/MDSD
Subtask E - OWRS/MDSD
Subtask F - OWPO/FRD, OWRS/MDSD
Subtasks G&H - OWRS/MDSD

* OWEP is developing separate priority project workplans for a compliance inspection strategy and an enforcement strategy.
** Tailors ORD quality assurance guidance to specific needs and concerns of State water quality managers.

20-955 O—84——7

TASK DESCRIPTION #10

Title: Guidance on the Overall Standards-to-Permits Process: Issue Revised WQM Regulations and Supporting Guidance on the Overall Margin of Safety.

Purpose: To simplify the WQM regulations in accordance with the Administrations policy on regulatory reform, and to provide guidance on the overall margin of safety for the water quality-based standards-to-permits process.

Method: Promulgate the revised WQM regulation and issue two margin of safety guidance documents: (a) a concept paper for State and local water quality managers and decision makers, and (b) a technical guidance manual on analyzing and quantifying the margin of safety associated with developing site-specific water quality-based controls in water quality limited segments.

Subtasks:

	Start	1st Draft	Fini
A. Promulgate the revised WQM regulation.	12/81		2/83
B. Develop guidance on the overall margin of safety for the water quality-based standards-to-permits process.			
- concept paper	10/82	12/82	8/83
- technical guidance	6/82	12/82	9/84

Responsible Divisions:

Subtask A - OWPO/WPD
Subtask B - OWRS/MDSD

TASK DESCRIPTION #11

Title: Provide Data Management Support for the Standards-to-Permits Project.

Purpose: To provide data and data management techniques which EPA and the States need to: set priorities, establish water quality-based efficient limitations, prepare State 305(b) reports, write the EPA reports to Congress, and otherwise carry out the tasks of the standards-to-permits project.

Method: Provide data management files with data management techniques and capabilities that can be used by the States and locals to link ambient and point source data to water quality-based standards-to-permits decision making. Also, provide a file for managing and analyzing effluent toxicity/bioassay data. Both files will interact with other files within STORET.

End Product: Improved data management support for local decision making and reporting.

Subtasks:	Start	Finish
A. Develop complex effluent toxicity information system (CETIS)	5/81	12/82
B. Provide reach file for water quality analytic capabilities for use by States and EPA Regions	6/80	12/84
C. Initiate BIOSTORET capabilities for States	6/80	12/84

Responsibile Divisions: Subtask A - OWEP/PD
Subtask B - OWRS/MDSD

Attachment B

OFFICE OF WATER

WATER QUALITY-BASED STANDARDS-TO-PERMITS PROJECT

SUBTASK SUMMARY SHEET

Task: _____

_____

Subtask: _____

_____

Regulation(s) Supported: _____

Office/Division Responsible: _____

Individual Responsible: _____

I. Statement of Purpose and Description:

II. Schedule:

(a) Annotated outline to AA for revision and comment, or other appropriate starting date. _____

(b) First Draft _____

(c) Draft to AA's Policy Coordinating Committee _____

(d) Final Draft _____

(e) Publication, or other appropriate subtask completion date. _____

III. Audience and Agency Consultation:

Subtask: _____

IV. Resource Needs:	Total Used To Date	Projected Total for Subtask FY-83	FY-84 (if any)
(a) Professional m-days			
(b) Management m-days			
(c) Admin. Support m-days			
(d) Contract $			
(e) Travel $			
(f) Printing $			
• No. of copies: _____			
(g) Distribution $			
• Means: _____			

V. Contractor Support:

(a) Contract Planning ID No. _____

(b) Brief Work Description and Justification:

VI. Nature of policy decision(s) needed from AA, when decision(s) are needed, link to statutory/regulatory requirements:

VII. ADP Information Management (e.g., data systems support, if any required for subtask).

Date Prepared or Revised: _____

Appendix II

WATERS MEETING THE 1983 GOAL AS ESTIMATED IN

STATE SECTION 305(b) REPORTS

State	(A) Basis for Estimate	(B) Percent of (A) Currently Meeting Goal	(C) Percent of (A) Expected to Meet Goal	Primary Reason(s) for Nonattainment of Goal
Arkansas	6,239 major stream miles	Not reported	77%	Nonpoint sources
California*	27 major streams	85%	Not reported	Nonpoint sources, especially agricultural return flow
Connecticut	963 miles-major rivers	90% of total miles 70% of major rivers	Not reported	Combined sewer overflow; nonpoint pollution; industrial discharges
Georgia	20,000 total stream miles	95%	Not reported	Combined sewer overflows; urban and nonpoint runoff; WWTP discharges
Kansas	62 stream segments	97% fishable	100%	Rural runoff, natural conditions
Louisiana	113 segments	Not reported	85%	Pesticides, untreated wastes
Maine	8,600 miles	90%	Not reported	Combined sewer overflows and nonpoint pollution; also municipal discharges
Maryland	2,684 miles	90%	90%	Suspended solids, nutrients from urban runoff and agricultural runoff
Massachusetts*	1,715 assessed stream miles	45%	Nearly 60%	Nonpoint sources; industrial, municipal, combined sewer sources

Appendix II (Continued)

State	(A) Basis for Estimate	(B) Percent of (A) Currently Meeting Goal	(C) Percent of (A) Expected to Meet Goal	Primary Reason(s) for Nonattainment of Goal
New Hampshire	14,500 miles	96.5%	99%	Municipal and industrial waste, combined sewer overflows, untreated domestic discharges
New Mexico	3,500 miles	90%	95%	Point and nonpoint sources
North Dakota	47 segments	Not reported	100%	Natural conditions
Ohio	43,000 permanent stream miles in state; 3,758 miles evaluated	Over 3,048 miles are currently 1983 goals or will meet the goals by 1983. 70% of the principal streams will meet 1983 goals.		
Pennsylvania	12,962 miles	79%	82%	Abandoned mine discharge
Rhode Island	329 miles	66%	Not reported	Municipal and industrial sources, combined sewer overflows
South Carolina	88 segments	90%	Not reported	Not reported
Tennessee	13 basins	Not reported	46%	Point and nonpoint source pollution, surface mining
Texas	16,115 miles, classified	91%	97%	Sluggish flows; municipal, industrial waste
Vermont	1,126 miles assessed	84%	100% fishable 100% swimmable "where attainable"	Municipal discharges, combined sewer overflows, nonpoint sources
Virginia*	27,240 total stream miles	95%	Not reported	Kepone from industrial discharger; mine drainage; abandoned industrial plant; nonpoint sources, especially agricultural

*1980 estimates

Appendix III

USE ATTAINABILITY CASE STUDIES

COLORADO, SOUTH PLATTE RIVER

PROBLEM: Controversy as to whether current Class I warm water aquatic life use designation is reasonable or achievable

ISSUES CONSIDERED:
1. Un-ionized ammonia criteria
2. Physical obstructions and their effect on fish habitats
3. Diversions and dischargers
4. Existing and potential fish populations
5. Non-point sources

ANALYSES CONDUCTED:
1. Physical
   - flow and temperature duration analysis
   - review of factors affecting flow in the South Platte River
2. Chemical
   - review of data on un-ionized ammonia; heavy metals in water and sediment; non-point sources
3. Biological
   - review of factors affecting aquatic habitats in South Platte River
   - existing and potential fish populations
   - development of site-specific un-ionized ammonia criteria

DATA BASE: Segment 14 of the South Platte River has been under study for a number of years, and there was an extensive amount of information available. No additional field work was required.

FINDINGS:
1. A warm water fishery currently exists in Segment 14.
2. Turbidity and stream embeddedness could hinder fish spawning.
3. Insufficient data exist to establish the fact that the flow and habitat are not suitable to warrant the Class I warm water aquatic life use.

IOWA, SOUTH SKUNK RIVER

PROBLEM: River classified as "B" warmwater fishery but portion below Ames may only be marginally suitable for fish propagation.

ISSUES CONSIDERED

1. Impact of shifting sand substrate
2. Impact of agricultural runoff
3. Treatment plant effluent at Ames
4. Summer low flow

ANALYSES CONDUCTED:

1. Physical
   - -effects of temperature on system
   - -habitat suitability indices for three species
   - -low flow evaluation
2. Chemical
   - -ammonia loading into river
   - -consideration of phosphate, turbidity and COD
3. Biological
   - -survey of fish and distribution
   - -diversity indices

DATA BASE: Extensive information available on South Skunk River including fisheries data.

FINDINGS:

1. Actual uses of the River are substantially different above Ames than below, although the designated aquatic life uses are similar.
2. Physical flow and temperature limitations, especially below Ames, preclude the establishment of better natural fisheries than now exist.
3. If ammonia loading of the Ames discharge continues to increase, the passage of fish through the Skunk below Ames may be threatened.

MASSACHUSETTS, ASSABET RIVER

PROBLEM: River classified as warm water fishery, but dams and current water quality prohibit that use. An evaluation of the potential of a cold water fishery was made.

ISSUES CONSIDERED:

1. Impacts of permanent physical restrictions
2. Impacts of treated wastewater discharges
3. Natural water quality constraints

ANALYSES CONDUCTED:

1. Physical
   - -effects of dams on water quality potential of the River
   - -substrate impacts on habitats
2. Biological
   - -sampling of existing biota
   - -historical observation of biota
3. Chemical
   - -water quality restrictions to certain species
   - -potential ammonia toxicity problems

-temperature and DO evaluated to determine effects on fishery.

DATA BASE:
1. 1952 fisheries survey
2. 1969, 1974, and 1979 River quality sampling surveys, including some physical characteristics
3. 1981 Water Quality Management Plan
4. Massachusetts Division of Water Pollution Control water quality model
5. Biological observations throughout the River

FINDINGS:
1. Existing wastewater treatment plant discharges result in poor water quality throughout the River
2. Naturally high summer temperatures preclude a cold water fishery
3. Dams prevent free movement of fish in the River
4. The potential exists for a seasonal cold water fishery (through stocking)
5. The potential exists for a warm water fishery throughout the River, with limited impairment

MINNESOTA, SOUTH FORK CROW RIVER

PROBLEM: The State wanted to assess the present 2B use classification (warmwater fisheries) to determine if this use was attainable based on biological, chemical and physical characteristics of the water body.

ISSUES CONSIDERED:
1. Impacts of nonpoint source discharges
2. Impacts of point source discharges in the vicinity of Hutchinson POTW
3. Natural quality constraints

ANALYSES CONDUCTED:
1. Physical
   -effects of low flow conditions via Tennant concept
   -physical habitat assessment using Wisconsin procedures (12 physical factors used).
2. Chemical
   -evaluation of instream water quality violations
   -analysis of total inorganic nitrogen and total phosphorus
3. Biological
   -species diversity
   -distribution and composition of species
   -biological comparison to North Fork of Crow River

DATA BASE:
1. USGS flow records
2. Minnesota Pollution Control monitoring data base
3. Minnesota Department of Natural Resources (MDNR) River Survey 1978
4. MDNR River Survey 1979

5. MDNR Biological Survey, Crow River, 1974
6. MDNR Population Assessment, June 1978

FINDINGS:
1. The South Fork Crow River, like other warmwater streams in the State of Minnesota was dominated by a large rough fish population
2. Game fish and sport fish electroshocking catch percentages from the South Fork Crow River were short of the expected percentage values
3. Water level fluctuations and extended periods of low flow contributed to the impairment of the fishery potential
4. Nonpoint source runoff, and in certain areas stream bank erosion were contributing factors to normally turbid conditions
5. Point source discharges, notably below the city of Hutchinson, are resulting in instream water quality violations

NEBRASKA, SALT CREEK

PROBLEM: Classification of one of the channelized portion of Salt Creek as a limited rather than a full warm water fishery.

ISSUES CONSIDERED:
1. Fish distribution and relative abundance of fish
2. Background conditions
3. The suitability of the habitat of the limited warm water segment for a full warm water segment

ANALYSES CONDUCTED:
1. Physical habitat requirements of warm water fisheries as compared to the segments studied
2. Chemical comparisons of the limited warm water segment (channelized segment) made with the upper and lower full warm water segments
3. Biological data including fish and macroinvertebrate data were used to compare water quality, the suitability of the habitat and the integrity of the habitat and the integrity of the aquatic ecosystem in the three segments

DATA BASE:
1. Existing U.S. Geological Survey and Nebraska Department of Environmental Control monitoring data
2. Thesis from the University of Nebraska-Lincoln
3. Publications of Nebraska Game and Parks Commission

FINDINGS:
1. Water quality was degraded in the limited warm water fishery segment
2. Channelized portion of Salt Creek lacks the physical habitat conditions to attain a full warm water fishery

NORTH CAROLINA, DEEP CREEK

PROBLEM: Natural conditions and/or municipal treatment plant effluent may preclude attainment of current class C use designation.

ISSUES CONSIDERED:
1. Natural background conditions
2. Proposed level of upgrade for municipal treatment plant

ANALYSES CONDUCTED:
1. Physical
   -high summer water temperature and low flow
   -swampy area through which effluent passes before reaching River
2. Chemical
   -water chemistry analysis of receiving water at several stations
3. Biological
   -benthic macroinvertebrate surveys at several stations in receiving water

DATA BASE:
1. Self-monitoring reports of treatment plant effluent
2. Intensive 1979 water quality survey of Deep Creek
3. Intensive water quality survey of Deep Creek conducted in 1982 as part of this Assessment

FINDINGS:
1. Natural conditions preclude achievement of present water quality standard
2. Designation should be changed to swamp category which aligns aquatic use protection with a DO criteria that reflects natural conditions
3. The treatment plant effluent does not adversely effect Deep Creek.

OREGON, MALHEUR RIVER

PROBLEM: River designated as salmonid fishery but managed as a warm water fishery

ISSUES CONSIDERED:
1. Irrigation diversions
2. Quality of irrigation return flows

ANALYSES CONDUCTED:
1. Physical
   -effect of dams on water temperature and fish migration
   -sediment load and transport
2. Biological
   -resident species analysis

3. Chemical
   -suspended solids in irrigation return flow

DATA BASE:
1. Fisheries information
2. Two-year sampling program

FINDINGS:
1. High suspended solids in River and in irrigation return flow presents conditions unfavorable to salmonids
2. High water temperature, and effect of dams on River hydraulics preclude natural salmonid fishery

TEXAS, PECAN BAYOU

PROBLEM: Current use designation includes propagation of fish and wildlife, but this use is unattainable due to low DO during spawning season. Most of the flow in the river is municipal treatment plant effluent.

ISSUES CONSIDERED:
1. Water rights
2. DO, chloride, and toxic compounds

ANALYSES CONDUCTED:
1. Physical
   -flow frequency analysis
2. Chemical
   -review of data on DO, TDS, chloride and toxics
3. Biological
   -fish diversity index
   -resistance-to-change and recovery-from-stress indicators
   -DO during spawning season

DATA BASE: Extensive information was already available on Pecan Bayou; no additional field work was required.

FINDINGS: The designated use is impaired and is not being met.

VIRGINIA, BLACKWATER RIVER

PROBLEM: River designated as Class III fishery with dissolved oxygen criteria of 4 mg/l minimum. Natural background conditions may preclude use due to nature of swamp.

ISSUES CONSIDERED:
1. Nonpoint source runoff reduces dissolved oxygen levels.
2. Need for Franklin Sewage Treatment Plant (STP) to improve biochemical oxygen demand of its effluent.

ANALYSES CONDUCTED:

1. Physical
   - sediment samples for particle size analysis
2. Chemical
   - samples collected for analyses of pH, alkalinity, solids, hardness, nutrients, BOD_5, COD, phenols and heavy metals
3. Biological
   - periphyton sampling for chlorophyll a content, biomass and autotrophic index determination
   - quantitative survey of macroinvertebrates with qualitative evaluation of diversity based on knowledge of pollution tolerance for various genera.
   - species diversity index and Karr fish index.

DATA BASE:

Limited data was available for the Blackwater River thus additional field work was conducted.

FINDINGS:

The State has not reached conclusions at this point and will sample quarterly for one year. Preliminary findings are:

1. The aquatic communities are generally healthy with fair to good abundance and distribution
2. D.O. high during reproductive periods for many of the fish species found in the River
3. System is stressed by low D.O. from May through November

APPENDIX IV

SITE-SPECIFIC CRITERIA DEVELOPMENT CASE STUDIES

CALIFORNIA, NORTH COAST REGION

PROBLEM: The timber industry uses a newly manufactured form of a 2,4-D ester in aerial spraying. The State Water Resources Control Board did not have sufficient information to calculate new water quality limits for this ester. Using the site-specific protocol, the Water Resources Control Board developed site-specific water quality criteria for the 2,4-D ester to protect aquatic life in the North Coast Region.

ISSUES CONSIDERED:
1. Effect of the receiving water on the toxicity of 2,4-D ester.
2. Sensitivity of the local organisms to the 2,4-D ester.

ANALYSES CONDUCTED: The State of California, assisted by EPA, developed a site-specific testing protocol which determined the toxicity of the 2,4-D ester.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

CONNECTICUT, NORWALK RIVER

PROBLEM: A local metal finishing industry had its discharge permit up for renewal.

---Existing limits were based upon BPT for this industry .

---Both industry and State desired that the new permit reflect the limits for zinc and lead that were needed at site this for aquatic life protection.

ISSUES CONSIDERED:
1. Effect of receiving water on the toxicity of zinc and lead in the industrial discharge.
2. Sensitivity of local organisms to zinc and lead in the discharge.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: Through a cooperative effort, EPA and Connecticut developed a plan to determine site-specific water quality criteria for zinc and lead at this site.

---State utilized EPA's published ambient water quality criteria for zinc and lead as a starting point.

---Bioassays were conducted using the types of organisms found at this site with actual water from the Norwalk River to account for local environmental effects upon the toxicity of zinc and lead.

---Surveys were conducted to assess the health of the aquatic communities above, at, and below the discharge.

GEORGIA, SUWANEE CREEK

PROBLEM: A tannery was discharging ammonia and desired an ammonia limit in its permit which reflected site-specific biological and water quality conditions to protect aquatic life in Suwanee Creek.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of ammonia.
2. Sensitivity of the local organisms to ammonia.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Georgia developed a site-specific testing plan which determined the toxicity of un-ionized ammonia at this site.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

IOWA, IOWA RIVER

PROBLEM: A POTW was discharging ammonia under differing environmental conditions and desired an ammonia limit in its permit which reflected site-specific biological and water quality conditions to protect aquatic life in the Iowa River during different seasons.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of ammonia.
2. Sensitivity of the local organisms to ammonia.
3. Seasonal variation in ammonia toxicity.
4. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Iowa developed a site-specific testing plan for the Marshalltown POTW which determined the toxicity of un-ionized ammonia under different seasonal conditions.

---Bioassays were conducted on-site utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

IOWA, MILL CREEK

PROBLEM: A metal plating plant was discharging cyanide and both the State and industry desired new limits in the permit which would reflect site-specific biological and water quality conditions to protect aquatic life in Mill Creek.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of cyanide.
2. Sensitivity of the local organisms to cyanide.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Iowa developed a site-specific testing plan which determined the toxicity of cyanide at this site.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

LOUISIANA, SELZER CREEK

PROBLEM: A battery processing plant was discharging lead, cadmium and nickel and desired a lead, cadmium and nickel limit in its permit which reflected site-specific biological and water quality conditions to protect aquatic life in Selzer Creek.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of lead, cadmium and nickel.
2. Sensitivity of the local organisms to lead, cadmium and nickel.
3. Biological condition of the river above and below the discharge.

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ANALYSES CONDUCTED: EPA and the State of Louisiana developed a site-specific testing plan which determined the toxicity of lead, cadmium and nickel at this site.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

MARYLAND, PINEY RUN

PROBLEM: A POTW was discharging ammonia and chlorine and desired an ammonia and chlorine limits in its permit which reflected site-specific biological and water quality conditions to protect aquatic life in Piney Run, Maryland.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of ammonia and chlorine.
2. Sensitivity of the local organisms to ammonia and chlorine.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Maryland developed a site-specific testing plan which determined the toxicity of un-ionized ammonia and chlorine at this site.

... Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

... Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

MICHIGAN, FLINT RIVER

PROBLEM: POTW's were discharging copper and cadmium and limits were desired which would reflect site-specific biological and water quality conditions to protect aquatic life in the Flint River.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of copper and cadmium.
2. Sensitivity of the local organisms to copper and cadmium.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Michigan developed a site-specific testing protocol which determined the toxicity of copper and cadmium at this site.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

MINNESOTA, CROW RIVER

PROBLEM: A POTW was discharging cyanide and copper and desired a cyanide and copper limit in its permit which reflected site-specific biological and water quality conditions to protect aquatic life in the Crow River.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of cyanide and copper.
2. Sensitivity of the local organisms to cyanide and copper.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Minnesota developed a site-specific testing protocol which determined the toxicity of cyanide and copper and this site.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

MONTANA, PRICKLEY PEAR CREEK

PROBLEM: Prickley Pear Creek was receiving metal-rich runoff from abandoned mines. The State desired to set appropriate limitations on copper and zinc to protect aquatic life in the stream.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of copper and zinc.
2. Sensitivity of the local organisms to copper and zinc.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA, assisted by the State of Montana developed a site-specific testing protocol which determined the toxicity of copper and zinc at this site.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

NEBRASKA, SALT CREEK

PROBLEM: State desired to set appropriate limitation on lindane to protect aquatic life in the creek.
Existing national lindane criterion was not applicable to this creek because it was based on data for the brown trout. The brown trout is not indigenous to the area and it is not likely to be found in Salt Creek.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of lindane.
2. Sensitivity of the local organisms to lindane.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Nebraska developed a plan to determine site-specific water quality criteria for lindane.

---State utilized EPA's published ambient water quality criteria for lindane as a starting point.

---Bioassays were conducted using the types of organisms found at this site with actual water from Salt Creek to account for local environmental effects upon the toxicity of lindane.

---Surveys were conducted to assess the health of the aquatic communities above, at, and below several suspected dischargers.

NEW JERSEY, WALLKILL RIVER

PROBLEM: A metal plating plant was discharging nickel and chromium and desired nickel and chromium limits in its permit which would reflect site-specific biological and water quality conditions to protect aquatic life in the Wallkill River.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of nickel and chromium.
2. Sensitivity of the local organisms to nickel and chromium.

3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of New Jersey developed a site-specific testing plan which determined the toxicity of nickel and chromium at this site.
---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.
---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

NORTH CAROLINA, MULBERRY CREEK

PROBLEM: A mirror plating plant was discharging copper and desired a copper limit in its permit which reflected the appropriate amount to protect aquatic life in Mulberry Creek.

ISSUES CONSIDERED:
1. Effect of the receiving water on the toxicity of copper.
2. Sensitivity of the local organisms to copper.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of North Carolina developed a site-specific testing plan which determined the toxicity of copper at this site.
---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.
---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

OKLAHOMA, MINGO CREEK

PROBLEM: An airplane parts manufacturer was discharging chromium and zinc and desired a chromium and zinc limit in its permit which would reflect the appropriate amount to protect aquatic life in Mingo Creek.

ISSUES CONSIDERED:
1. Effect of the receiving water on the toxicity of chromium and zinc.
2. Sensitivity of the local organisms to chromium and zinc.

3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Oklahoma developed a site-specific testing protocol which determined the toxicity of chromium and zinc at this site.
---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.
---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

OKLAHOMA, SKELETON CREEK

PROBLEM: An oil refinery and POTW were discharging chromium and zinc and new limits were desired which would reflect site-specific biological and water quality conditions to protect aquatic life in Skeleton Creek.

ISSUES CONSIDERED:
1. Effect of the receiving water on the toxicity of chromium and zinc.
2. Sensitivity of the local organisms to chromium and zinc.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Oklahoma developed a site-specific testing protocol which determined the toxicity of chromium and zinc at this site.
---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.
---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

TEXAS, LEON RIVER

PROBLEM: An industrial treatment plant for Kelly Air Force Base was discharging cadmium and chromium and limits were desired which would reflect site-specific biological and water quality conditions to protect aquatic life in the Leon River.

ISSUES CONSIDERED:
1. Effect of the receiving water on the toxicity of cadmium and chromium.
2. Sensitivity of the local organisms to cadmium and chromium.

3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: EPA and the State of Texas developed a site-specific testing protocol which determined the toxicity of cadmium and chromium at this site.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

---Surveys were conducted to determine the health of the aquatic communities above, at, and below the discharge.

WASHINGTON, SPOKANE RIVER

PROBLEM: Due to smelter activities and mine drainage, zinc has been leaching into the Spokane River impacting the salmonid populations of the river. The State of Washington wanted to develop site-specific criteria for zinc for the protection of salmonids.

ISSUES CONSIDERED:

1. Effect of the receiving water on the toxicity of zinc.
2. Sensitivity of the local organisms to zinc.
3. Biological condition of the river above and below the discharge.

ANALYSES CONDUCTED: The State of Washington, assisted by EPA, developed a site-specific testing protocol which determined the toxicity of zinc.

---Bioassays were conducted utilizing the types of organisms found at the site and actual water from the site.

APPENDIX V

WATER QUALITY MANAGEMENT AND WATER QUALITY MONITORING IN THE LARIMER-WELD REGION OF COLORADO

OVERVIEW

In the Larimer-Weld region of northeastern Colorado, water quality monitoring programs supported by local government and industry provide the factual basis for cost-effective environmental protection of the region's water resources. The program includes physical, chemical, and biological monitoring with funding by municipalities and industries in the region. The program is coordinated at the regional level through the Larimer-Weld Regional Council of Governments 208 area wide water quality management program.

The 208 program has played a significant role in the development of the monitoring program. When development of the area wide plan began in 1976, deficiencies in water quality data on the complex streams of the region were recognized as a major impediment to making environmentally sound, cost-effective pollution control decisions in the region. As a result, an intensive short-term data collection program was included in plan development, with 150 locations being sampled within the region. In addition, chemical and biological data provided by Kodak/Colorado indicated the need for, and value of water quality data for decision making. Monitoring data was instrumental in developing a technically sound, cost-effective, publicly accepted water quality management approach for the region.

Development of an on-going water quality monitoring program was considered a high priority in the area wide plan. Following plan adoption at the local and state level and approval by EPA, the Larimer-Weld Regional Council of Governments sponsored development of an implementation plan for an on-going regional water quality monitoring program. Existing monitoring programs were reviewed, deficiencies identified, and recommendations were made for specific biological, chemical and flow monitoring activities. Practically all of the recommendations have been implemented with the financial support of local government and industry.

Water quality monitoring is considered a high priority by local government and industry, as indicated by the fact that the program has been expanded in recent years when other programs have experienced budgetary constraints. Water quality monitoring data has played a key role in decisions regarding proposed water quality standards for the region, and in defining the cost-effectiveness of various wastewater treatment alternatives. The water quality monitoring program will play an even more important role in the future as growth and development occur within the region, and additional pressures are placed on the quality and quantity of water resources.

2.

MONITORING AND THE REGIONAL 208 PLAN

Larimer-Weld region was designated for area wide planning by the Environmental Protection Agency in 1975. The 6600 square mile region was experiencing high growth rates in urban centers such as Fort Collins, Loveland, and Greeley. The 208 plan was to address future wastewater treatment needs, as well as impacts of non-point sources. The Larimer-Weld Regional Council of Governments (COG) was designated as the area wide planning agency. Early in the 208 planning program, lack of adequate water quality data to define point and non-point source impacts was identified as a major impediment to developing a realistic, cost-effective water quality management plan for the region. Available water quality data was considered inadequate for planning because:

1. A complex system of stream diversions and irrigation return flows resulted in regional streams being non-contiguous on a seasonal basis. Simple application of available water quality data failed to reflect this vital fact.

2. Stream flow data was infrequently collected with chemical data.

3. Pollutants of concern, such as ammonia, had not been monitored at key locations.

4. Point and non-point source impacts could not be identified or differentiated.

Recommendations by consultants (Toups, 1976) resulted in a short-term intensive monitoring program for the region. Approximately 150 locations in the region were sampled. Some locations were sampled only once, and some several times on a seasonal basis to define impacts.

Eastman Kodak-Colorado Division (Kodak/Colorado) provided information to the 208 planning program on water quality and biota of the Cache la Poudre River, one of the major streams in the region. Kodak/Colorado initiated a multi-media monitoring program in 1969, prior to constructing a major manufacturing facility at Windsor, Colorado, on the Cache la Poudre River, to monitor the impact of its facility on the environment of the region. This exemplary program proved to be invaluable in evaluating point and non-point source impacts on the chemistry and biota of complex streams in the region.

The site-specific data provided by Kodak/Colorado and the intensive short-term regional monitoring program supported several scientifically based conclusions incorporated into the Larimer-Weld 208 plan, including a finding that

> "A coordinated water quality, quantity, and biological monitoring program will be implemented to assure the necessary margin of safety (for) existing aquatic life and (to) obtain useful information to further plan water quality control measures." (LWRCOG; 1978)

3.

PLAN IMPLEMENTATION

The Larimer-Weld 208 Plan states:

> "A water quality monitoring program is a fundamental need to insure that future investments in water pollution control are made in a wise and efficient manner." (Pitts, 1978)

Because of the obvious value of in-stream water quality data, Larimer-Weld 208 Plan implementation placed a high priority on development of a long-term water quality monitoring program to support water quality decisions in the region. In 1979, the Larimer-Weld area wide planning agency (COG) established a regional water quality monitoring advisory committee which included representatives from local municipalities and industries, Colorado State University, Colorado Department of Health, Colorado Division of Wildlife, Environmental Protection Agency, U.S. Forest Service, and U.S. Geological Survey. (Trembly, 1979)

The committee, with staff and technical support, reviewed and evaluated existing programs, established regional monitoring goals, compared existing programs to those goals, developed detailed recommendations for a regional monitoring program, determined institutional responsibilities, and developed a financial plan which placed principal reliance on local government and industry for program support. (Pitts, 1980) The implementation plan included specific recommendations regarding:

1. The location of sampling stations.
2. Constituents to be analyzed at each station.
3. Frequency of sampling.
4. Modification of pre-existing Federal and State monitoring programs to comply with regional monitoring goals.
5. Expansion of biological monitoring programs.
6. Use of site-specific bioassays to determine appropriate numeric criteria for aquatic life.
7. Collection of flow data with all chemical samples.
8. Establishment of a statewide bioassay/biosurvey committee by the State of Colorado to recommend scientifically sound procedures for biological monitoring and bioassays.

In 1981, the region's monitoring program was significantly expanded to meet regional water quality monitoring goals (Pitts, 1981) at a time when other programs were budgetarily constrained (Pusey, 1982). Practically all of the recommendations included in the regional plan for water quality monitoring needing the support of local government and industry were implemented. The City of Loveland, Hewlett-Packard, City of Fort Collins,

and Kodak/Colorado agreed to provide funding and technical support for the program. The Larimer-Weld Regional Council of Governments 208 Planning Agency agreed to provide coordination. On the Cache la Poudre River, biological surveys were expanded in the vicinity of Fort Collins. The City of Fort Collins and Kodak/Colorado initiated a cost sharing agreement for biological surveys on the Cache la Poudre River. In addition, several new water quality stations were established, including some operated by the U.S. Geological Survey (U.S.G.S.). The City staff and staff of Kodak/Colorado agreed to implement weekly monitoring of several constituents of concern, including monitoring of flow in the river. The City of Loveland and Hewlett-Packard initiated weekly monitoring programs for selected constituents on the Big Thompson River. Several new water quality stations were established on the Big Thompson River through agreement with U.S.G.S., and biological surveys were initiated on a routine basis.

The City of Loveland, with partial funding from Hewlett-Packard, and the City of Fort Collins entered into inter-governmental agreements with Larimer-Weld Regional Council of Governments to provide funding for a coordinated U.S.G.S. sampling program in the region. The Council of Governments subsequently entered into an agreement with the U.S. Geological Survey for cooperative flow and water quality stations in the region. In addition to the long-term monitoring program, the City of Loveland and Hewlett-Packard sponsored bioassays to assist in establishing numeric criteria for silver and copper on the Big Thompson River.

WATER QUALITY STANDARDS

In July, 1980, the Colorado Water Quality Control Commission conducted hearings on water quality standards for the Larimer-Weld region with the objective of assigning specific designated use classifications and numeric criteria. Municipalities and industries in the region supported recommendations for use classifications recommended in the regional 208 plan. In addition, site specific bioassays were conducted to support recommendations for specific numeric criteria (Morrison, 1980). Bioassay results and physical, chemical, and biological data (Morrison, 1978, 1979) provided a conclusive set of evidence supporting appropriate designated uses and numeric criteria for key constituents. The development of the technical data supporting water quality standard recommendations was jointly sponsored by the cities of Fort Collins, Greeley and Loveland, Town of Windsor, Kodak/Colorado, and the Cache la Poudre Water Users Association (Pitts, 1980). Each entity also provided recommendations and supporting site-specific data to the Commission on specific concerns. (Houck, 1980; Reitz, 1980). In 1981, the Commission adopted water quality standards for the Larimer-Weld region which were substantially in agreement with the recommendations of the area wide planning agency and local government and industry. (Commission, 1981) These standards were approved by EPA in 1982. (Durham, 1982) Water quality monitoring data and additional site-specific data were decisive in developing recommended classifications and numeric criteria, and subsequent adoption and approval of appropriate water quality standards.

5.

MONITORING PROGRAM COSTS

The 1981 estimated cost to each participant, including U.S.G.S. cooperative support, is shown in Table 1. The Cache la Poudre River, approximately 48 miles of river are being monitored and on the Big Thompson River approximately 10 miles of river are included in the monitoring program. The data on both rivers is augmented by other U.S.G.S. stations sponsored by other co-operators. The costs include in-house costs for direct program support for water quality sampling and laboratory analyses. The distribution of costs for various program elements is provided in Table 2.

Table 1

Water Quality Monitoring Program Costs for 1981

Cache la Poudre River	
Municipal/Industrial	$145,300
U.S.G.S. (Poudre River Cooperative Program)	$ 22,000
Subtotal - Cache la Poudre River	$167,800
Big Thompson River	
Municipal/Industrial	$ 48,300
U.S.G.S. (Big Thompson Cooperative Program)	$ 10,700
Subtotal - Big Thompson River	$ 59,000
TOTAL	$226,800

Table 2

Cost Distribution for Monitoring Program Elements

Item	1981 Cost	% of Total
U.S.G.S. Cooperative Monitoring Program*	$ 65,400	29%
Biosurveys (Fish & Benthic)	$ 46,400	20%
Bioassays	$ 15,000	7%
Water Quality Sampling and Analysis	$100,000	44%
	$226,800	100%

* Includes 50% Municipal share

These costs may seem high for the number of river miles monitored, however, the hydrologic complexities of the Cache la Poudre River and Big Thompson River warrant more extensive monitoring than would be the case in most streams. Biological monitoring, a fairly significant cost item, is considered essential to the program. It provides the "margin of safety" specified in the 208 plan and the Federal Water Pollution Control Act. The biological monitoring program includes both fish and benthic surveys, conducted up to eight times per year at several locations on the Cache la Poudre River, and twice a year on the Big Thompson River.

The municipalities and industries expanded the program considerably in 1981 and this expanded program is being maintained by those municipalities and industries on the Cache la Poudre River.

FUTURE OF THE REGIONAL MONITORING PROGRAM

The commitment to water quality monitoring by local government and industry is significant and long-term. The site specific water quality data has proven its value in the planning and standards setting elements of the water quality management process; it is expected to be even more valuable as a tool for setting NPDES permit limits. Near term plans for the program include implementing an automated data processing system for more efficient storage, access, and analysis of water quality data, and continued annual program effectiveness reviews. Water quality standards reviews are anticipated in the mid-1980's, and the water quality data will play an increasingly important role in that process.

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TESTIMONY OF FREDERIC A. EIDSNESS, JR., ASSISTANT ADMINISTRATOR FOR WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY STEVEN SCHATZOW, DIRECTOR, OFFICE OF WATER REGULATION AND STANDARDS; AL RUBIN, CHIEF, WATER QUALITY CRITERIA SECTION, CRITERIA BRANCH; DAVID SABOCK, CHIEF, CRITERIA BRANCH; OFFICE OF WATER REGULATIONS AND STANDARDS; EPHRAIM KING, ATTORNEY ADVISER, OFFICE OF LEGISLATION; AND TUDOR DAVIES, DIRECTOR OF POLICY, OFFICER OF WATER

Mr. EIDSNESS. Thank you and good morning, Mr. Chairman and members of the subcommittee. I would like to introduce members of my staff present today who may or may not assist me, depending upon the depth of your questions and the scope of your questions. To my right is Mr. Steven Schatzow. Mr. Schatzow is the Director of EPA's Office of Water Regulations and Standards.

Immediately to my right and behind me is Mr. David Sabock. He is the branch chief for water quality standards and was involved in all 11 public meetings we held around the country on this important subject.

To his right is Dr. Al Rubin, who is a scientist of some renown in our agency and who developed some of the specific criteria and protocols that we will discuss later in our testimony.

On my left I would like to introduce Dr. Tudor Davies. He has just joined my staff as the head of the water policy staff. He was formerly director of the Narragansett Laboratory, under the research and development program, where he has had extensive experience in marine pollution. Also, Tudor was the father of the Chesapeake Bay program, so to speak, within the Environmental Protection Agency, and I am glad to have Tudor on my staff. He is going to be a great asset to us.

I would also like to introduce Ephraim King from the Office of Legislation. He was very instrumental in developing the long version of the testimony that the members have this morning.

I do apologize for the lateness of the submittal of our testimony. It was largely because, on returning from London, where I was attending the London Dumping Convention. I got involved in rewriting the final draft which we are going to discuss this morning.

Mr. ROE. If the gentleman would yield for a moment, it is the intent of the committee and we consider this to be an extraordinarily important issue, as I am sure you are aware, and we are asking you for your initial overview today, and then we will be calling on general public witnesses and other organizations and we will no doubt be calling you back when we get to that point.

Mr. EIDSNESS. I look forward to that opportunity, Congressman. I am going to be reading this morning from a lighted version of my short testimony. I hope all of you have copies of it. Some of you, I understand, might like to track it, so if you read the highlighted version that is what I am going to read. I hope you will have time to study the remaining part, but I am abbreviating this so we can get to your questions and answers.

Mr. ROE. The gentleman's statement will appear in full in the record.

Mr. EIDSNESS. Thank you.

Also, I should ask that, as you know, Dr. Hernandez is ill today and I hope I can do as good a job as he would have done had he been here. I would like to introduce for the record a brief statement that he would have presented to you this morning had he been here.

Mr. ROE. No objection, it is so ordered.

[The prepared statement of Dr. Hernandez follows:]

PREPARED STATEMENT OF DR. JOHN HERNANDEZ, DEPUTY ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Good morning, Mr. Chairman and Members of the Subcommittee. I am John Hernandez, Deputy Administrator of the United States Environmental Protection Agency. With me today is Eric Eidsness, EPA's Assistant Administrator for Water. As always, I am glad to be here with you, particularly since the Subcommittee has played such a key role in formulating the basis of our national clean water policy and in working with various administrations toward mutually shared environmental goals.

To those of you with whom I have had the great privilege of working during the 97th Congress, I would like to say that I look forward to continuing our relationship and to providing any and all assistance in your review of the proposed modifications to regulations that guide States in establishing their water quality standards and in your review of the Clean Water Act. To those of you who are new on the Subcommittee, let me say that I welcome the opportunity to work with you, to understand and respond to your concerns, and to help in whatever way possible in explaining the Act and EPA's efforts to implement it.

Under your able leadership, Mr. Chairman, the reforms of the Construction Grants program were enacted into law on December 29, 1981. Through the past summer and fall, Congress has held detailed hearings on the Administration's recommendations for reauthorization of the remainder of the Clean Water Act.

This Committee is now considering those recommendations. During this same period, EPA published revised regulations implementing the Construction Grants Amendments of 1981 and the proposed revisions to the Water Quality Management regulations that will be discussed today. We have also made major strides in the issuance of technology-based guidelines in accordance with the schedule we provided this Committee last year. These are complex rules to ensure that all American industry will provide the best treatment for their waste water that is technologically available for the removal of toxic materials. With the development and issuance of these industry-by-industry technology-based guidelines well underway, we proposed in October 1982 a series of administrative and regulatory modifications to our water quality standards program.

Today we are here at your request to discuss EPA's proposals in the water quality area. Let me say at the outset that we believe that technology-based standards must form the foundation of an effective pollution control program. We see the essential role of the water quality standards approach as building on that foundation to bring us closer to the ultimate goals of the Clean Water Act. Let me further be clear, as I am sure Eric Eidsness will stress in his discussion, that our proposals are designed to strengthen the Act, not to undercut it. Water quality standards should be periodically reviewed and revised as our science and data base improve in order to give the States another tool in their efforts to improve their surface waters and to manage their water resources most effectively. The 1981 amendments to the Clean Water Act directs the States to go through such a review

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process by January 1, 1985. EPA has proposed a revised guidance for this process.

In this regard, Mr. Chairman, we are aware of your concerns that our proposals may allow States too much leeway so that clear progress to the goals of fishable/swimmable waters may not be made and that the proposal may not follow the original intent of the 1972 Act. Mr. Chairman, that was neither the rationale nor, in my opinion, will it be the effect of our proposed changes.

I have gone on record, the Administrator has gone on record, and the Administration has gone on record as being committed to the Clean Water Act's fundamental objective of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters. We strongly believe that the Act's dual approach of first requiring that industry and municipals provide, as a minimum, technology-based treatment and second that site-specific water quality based standards are met in all of America's surface waters. This is a sound and effective strategy and is the basis of the Clean Water Act. It has resulted in substantial progress, and we are working to continue that progress.

Our purpose this morning is to explain to the Subcommittee the intent and objectives underlying our proposals. Eric Eidsness will do this in more detail. When we are finished I hope you will agree that our intent goes in the right direction. We believe that approach which we are trying to improve is the approach specifically laid out in the Clean Water Act. You should know that many State water pollution control agencies

have long sought changes in EPA's water quality regulations to allow for flexibility needed to address the very real and very different situations and water uses that are found in our 50 States and Puerto Rico - differences that range from clear perennial alpine streams to flood-fed intermittent flows over and across deserts.

What I am most concerned about, Mr. Chairman, is that we avoid misunderstanding as to what it is we are trying to accomplish. And what I most hope for, Mr. Chairman, is that we can achieve a dialogue, based on an understanding of commonly accepted goals, as to the most effective means of achieving those goals.

Let me be frank, it is entirely possible that we may not have been as clear as we should have been as to what we are trying to accomplish. If we haven't been clear, then there is no question that the burden is on us to work with you and all other interested parties in developing a mutually acceptable approach that we all can agree strengthens and improves the operation of this vital program.

With your permission Mr. Chairman, I would like to turn to Mr. Eidsness for a detailed explanation of our recent initiatives in this area. I know that Eric agrees with me as to the vital importance of the Clean Water Act's dual approach to water pollution control and the need to ensure that both parts of this strategy are operating as effectively as possible.

Again, I appreciate the opportunity to be here and to outline our position.

Mr. EIDSNESS. In response to your request, I will discuss this morning EPA's water quality management program and the regulatory and administrative modifications that we have proposed to improve it. With your permission also, Mr. Chairman, I would like to submit a longer statement for the record which will expand on my comments in more detail.

Mr. ROE. No objections, it is so ordered.

Mr. EIDSNESS. At the outset, let me emphasize that our proposals to improve the water quality standards program in no way affect our commitment to technology-based controls under the Clean Water Act. The strategy underlying the Clean Water Act includes the two approaches of both technology and water quality based controls as integral components of the same effort to reduce water pollution.

I believe that the combination of our water quality proposals, together with our substantial progress in issuing technology-based guidelines, clearly demonstrates the agency's continuing determination to implement this strategy.

I. BACKGROUND

The Federal Water Pollution Control Act Amendments of 1972 contemplated a strong Federal-State partnership in the renewed effort to control water pollution. EPA was given the initial job of establishing national technology-based effluent limitations and a national permit program by which they could be enforced.

At the same time, however, States were charged with the primary responsibility for preventing, reducing, and eliminating pollution through the development of water quality management programs including the establishment of water quality standards.

The act's technology-based limitations prescribed minimum standards of performance for municipal and industrial discharges without regard to the quality of receiving waters. By contrast, water quality standards identify intended uses of particular water bodies and, on the basis of national guidance developed by EPA, set forth the conditions that must exist in the receiving body of water to sustain those uses. These conditions are referred to as water quality criteria.

Designated uses, together with supporting criteria, constitute water quality standards. Generally, technology-based standards set minimum control requirements which all point source discharges are required to meet. Where those limitations are not adequate to achieve a particular State designated use, then State water quality standards come into play and mandate the additional controls necessary to meet the designated use.

Water quality standards serve three important functions under the Clean Water Act. First, they, in effect, establish a goal for a particular stream or water body by the assignment of a designated use and a level of desired water quality.

Second, water quality standards serve as a basis upon which States make management decisions to control nonpoint sources of pollution to the extent feasible. Finally, and most importantly, water quality standards serve as an enforceable tool to supplement

technology-based standards and further reduce pollutant loadings from point source discharges.

Following the adoption of standards the States embark upon a planning process involving the development of monitoring data, the allocation of wasteloads to point and nonpoint sources of pollution discharging into specified water bodies, plans for the prevention and control of such pollutants and, in the case of point source discharges, specific permit limitations based upon the calculation of such wasteloads.

There is a considerable amount of predictability and interpretation involved in relating a pollutant discharge into a particular water body to the protection of a designated beneficial use based upon adopted instream numeric criteria. Section 303(d)(1)(C) provides specific instructions on how a State is to take into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

Specifically, section 303(d)(1)(C) states such (waste) load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

The margin of safety provision of the act has been incorporated into other aspects of the standards adoption process and the translation of standards into enforceable permit limitations. The concept of providing for an adequate margin of safety is sound and is one to which EPA subscribes.

Currently, all 57 States and jurisdictions have approved water quality standards. All States have developed plans, and are currently updating those plans, which prescribe point and nonpoint source control requirements that are needed to meet water quality standards. States and EPA have written NPDES permits on the basis of State water quality standards, as well as the applicable technology-based requirements.

Examples of the results of such permits are advanced treatment [AT] processes for municipalities. This is a subject that I will address later in my testimony.

The pollutants that have been most commonly regulated on the basis of water quality standards are biochemical oxygen demand [BOD], dissolved oxygen, fecal coliform, suspended solids and temperature. Toxic pollutants, such as heavy metals, have not traditionally been a focus for regulation under water quality standards.

While we have considerable experience in regulating the conventional pollutants, additional effort will be needed to develop and apply these techniques to toxic substances, where they are not otherwise regulated on the basis of technology standards.

As I mentioned earlier, States have the primary responsibility for developing these water quality standards. However, under the act, EPA has final review and approval authority over all States adopted standards.

II. PROBLEMS

The adoption and implementation of water quality standards under the 1972 act has not been without difficulty and controversy.

I would like to briefly describe some of the problems the regulated community, States, and EPA have encountered under water quality standards. Some of these difficulties were the result of EPA policies and/or attitudes toward States, and others were the results of inadequate analytical and technical procedures, criteria, and guidance.

A. SOME WATER BODIES MAY HAVE BEEN INAPPROPRIATELY CLASSIFIED

Immediately after the passage of the 1972 Clean Water Act amendments, most States adopted fishable and swimmable use classifications for their rivers, lakes, and streams. This was sometimes done without adequate analysis concerning what constituted a fishable use given the chemical, physical, and biological characteristics of a particular water body. Experience has shown that, in some cases, a particular use, such as a trout fishery, cannot be attained because of hydrologic conditions or physical modifications of the stream. In some instances the occurrence of pollution prevents the use from being attained.

B. EPA'S PRESUMPTIVE APPLICABILITY POLICY

Under section 304(a) of the Clean Water Act, the EPA is to recommend national water quality criteria for incorporation, as appropriate, into State water quality standards. In 1976 EPA published the so-called Red Book containing recommended water quality criteria for a large number of pollutant parameters including dissolved oxygen, heavy metals, organic pollutants, and others.

These criteria were considered recommended allowable concentrations in the ambient stream which were adequate to protect sensitive aquatic organisms as determined under laboratory conditions. Between 1978 and 1980 EPA implemented a policy of "presumptive applicability." This policy, in effect, required States to adopt EPA laboratory derived national criteria unless the State could adequately justify another number. However, EPA provided no guidance on what would constitute adequate justification.

This was a controversial policy. Some States and members of the regulated community viewed this policy as (1) a preemption of States' rights and responsibilities, under section 303 of the Clean Water Act, to establish water quality standards, and (2) arbitrary, as there was no authority for EPA to impose this requirement on States.

In practical terms this policy was contrary to good science. EPA's laboratory-derived national criteria did not account for local factors, such as variations in water chemistry, pH or biological communities. In many Western streams the section 304(a) criterion for copper is inappropriate because there is a high suspended particulate content in the stream which renders the copper biologically inactive.

The data base from which the national copper criterion was developed used water free from suspended solids. If the national criterion is used in the water quality standard for a stream with a high particulate content, the permit limitation for copper on that stream may be unnecessarily stringent.

Because of the controversy surrounding this issue, EPA published a Federal Register notice on November 28, 1980, rescinding its policy of presumptive applicability. However, some States had by that time already adopted a number of EPA's recommended criteria. The need remains to provide specific procedures for States to use that are scientifically valid, and that allow for site specific modifications.

C. LACK OF PRIORITY

EPA's past policies concerning water quality standards revisions and water quality management planning, under section 208 of the Clean Water Act, lacked focus and any sense of priority. For example, EPA's regulations and guidance concerning water quality management planning under section 208 placed an unreasonable burden on States and areawide planning agencies to develop plans to control point and nonpoint sources of pollution.

While a number of noteworthy achievements resulted from such planning efforts, areawide plans, in order to meet the national requirements, sometimes addressed issues which were really not significant or important with respect to local water quality.

D. MANDATED 3-YEAR REVIEW AND REVISION OF WATER QUALITY STANDARDS

EPA's existing water quality standards regulations have been interpreted to require that States review and revise, if appropriate, all water quality standards on a 3-year cycle. This is a totally unreasonable burden to impose upon States.

Most States would prefer to review water quality standards on only those streams where there is considerable public interest, insuring that such standards reflect the goals and policies of the respective States, or where major regulatory actions are being contemplated.

E. ADEQUACY OF DATA AND ASSUMPTIONS IN ADOPTING AND APPLYING STANDARDS

As stated previously, there is a considerable amount of predictability involved in developing and applying water quality standards as a regulatory tool. Acquisition of data is an evolutionary process. EPA's past policies concerning water quality standards and planning have focused on the development and use of chemical quality data.

Experience has shown that physical and biological information is also essential to properly characterize the use and control strategies which will attain or enhance the designated use. In recent years, States and EPA have been developing such data and are now beginning to incorporate it into the decision process.

F. ANALYTICAL PROCEDURES AND ASSUMPTIONS

The fiscal year 1979 Appropriations Committee report for the construction grants program, which is a program we fund, directed the Administrator to personally determine that treatment greater than secondary treatment—otherwise known as advanced treat-

ment—required by the State under approved water quality standards will definitely result in significant water quality and public health improvement.

Since 1979 the Administrator has reviewed 80 advanced treatment projects: Changes were made in 52 percent of the projects, amounting to a capital cost saving of about $0.8 billion. As a result of these reviews, and experience gained by States and the regulated community, EPA has identified a number of technical and analytical areas where guidance is needed. I will share briefly with you some of the problems we have encountered in conducting these reviews.

As mentioned earlier, some of the numeric criteria adopted in States' standards, upon which advanced treatment requirements were based, were inappropriate in terms of the chemical, physical, and biological characteristics of the stream. While in some cases there was concern about the appropriateness of the numeric criteria, in other cases the criteria were not properly applied.

A long-term chronic number may have been used with short-term low flows, when an acute value should have been used. Quite often, extremely conservative wasteload allocation models were used or the models were not properly verified and applied to the receiving waters.

The point of these examples is that many of the assumptions were made somewhat inconsistently and without benefit of peer review and policy determination by the appropriate State rulemaking body.

It is within a State's prerogative, subject to EPA approval, to make whatever policy decision it feels is appropriate in adopting and applying water quality standards as a regulatory and management tool. However, EPA's congressional mandate makes it incumbent upon the administrator to assure that there will be definite water quality and public health improvements resulting from the expenditure of public funds through the construction grants program.

Assuming that States and local governments are equally concerned with the benefits derived from such expenditures, additional analytical procedures and guidance are needed so that States can select, from among the technical options, those which meet their policy needs.

G. WIDESPREAD ECONOMIC IMPACT

Under EPA's current regulation, the States may establish less restrictive uses than those contained in existing water quality standards, only where States can demonstrate, among other things, the following:

Mr. ROE. Will the gentleman hold for a moment?

Mr. EIDSNESS. Of course.

Mr. ROE. On page 8, as we were tracking you along to the top of page 9, just for clarification, I am going back now to the bottom of page 8. "The fiscal year 1979 Appropriations Committee report for the construction grants program directed the administrator to personally determine that treatment greater than secondary treatment—otherwise known as advanced treatment"—the third step is

what I am talking to—"required the State under approved water quality standards will definitely result in significant water quality and public health improvement."

You brought in some figures. What were those figures you brought in?

Mr. EIDSNESS. These figures are in the long version of the testimony, Mr. Chairman. The total capital cost of these 80 projects for advanced treatment itself was approximately $1.67 billion.

Mr. ROE. Right.

Mr. EIDSNESS. The result of these reviews conducted by EPA, under the Appropriations Committee language, was a cost savings of approximately half of that $1.67 billion, or roughly $0.82 billion. Because those dollars are not showing any significant water quality——

Mr. ROE. We will discuss that later. The figures are $0.82 billion?

Mr. EIDSNESS. Yes, sir. Those figures are discussed in detail in my long testimony.

Mr. ROE. The gentleman will proceed.

Mr. EIDSNESS. Thank you.

Under EPA's current regulation, the States may establish less restrictive uses than those contained in existing water quality standards, only where States can demonstrate, among other things, the following:

The adverse economic and social impacts resulting specifically from imposition of controls and reflected in primary and secondary unemployment impacts, plant closures, changes in Government fiscal base and other area economic indicators are substantial and widespread in comparison to other economic factors affecting the area's economy, to national economic conditions and fluctuations, and can be expected to persist for periods longer than provided for by adjustment payments such as unemployment compensation; and they are detectable in an area appropriate for measurement at least as large as a county or SMSA and, if appropriate, any larger economic area such as defined by the Bureau of Economic Analysis, U.S. Department of Commerce. In making a determination of substantial impact the positive economic and social impact of enhanced water quality must be evaluated.

Two problems resulted from this particular policy. First, at the time States adopted their standards, information on the cost of pollution control resulting from standards was not available. Such information, as I have explained earlier in my testimony, is developed in the context of water quality management planning under sections 303 and 208 of the Clean Water Act.

Second, the test appeared to be difficult, if not impossible, to meet and in practice become an insurmountable one. Our experience in conducting advanced treatment reviews, as you just mentioned, coupled with an affordability analysis EPA and grantees conduct as part of the construction grant program, suggest that this test is unreasonable and unworkable. We are looking for an alternative, preferably one that is used elsewhere in the act.

III. APPROACH

The technical issues I have been discussing reflect a broader problem that must be recognized in reviewing the water quality standards program. The fact is that with the high priority and urgency attached to the development of technology-based standards, there has been less emphasis at the Federal level on the water quality approach. This has resulted in both inadequate and often inflexible direction from Washington and also uncertainty among States as to their specific responsibilities and prerogatives.

In the past, policies, regulations, guidance, and testing were developed by agency offices independent of one another. To deal with this we have had to integrate our expertise and resources into a systematic drive to develop solutions to both the technical and more general problems that I have discussed.

At my direction, a combination of policy initiatives, regulatory reforms, and guidance materials have been identified and a schedule for their development laid out. We are well on our way to completing that schedule. For your reference and information, a copy of the schedule is attached to my longer statement for the record.

On October 29, 1982, EPA proposed revisions to the water quality standards regulations. We also have proposed reforms to the water quality management regulations which describe the procedures and requirements that States and areawide planning agencies must meet to implement standards under sections 303 (d) and (e), and 205(j) of the Clean Water Act. Draft guidance describing technical approaches that States might follow in adopting and implementing water quality standards has also been made available to the public.

I would like to emphasize, Mr. Chairman, that the purpose of the proposed changes to the water quality standards and water quality management regulations, and draft technical guidance, was not to unilaterally declare water quality policy by fiat. It was to inform all interested parties as to the issues that are confronting us and to request the reviews and experiences of others in assisting us in perfecting the design of a water quality standards-based approach.

These proposals were developed in concert with the States. The States played an active role from the beginning in revising the regulation on water quality standards. Starting in October 1980, a subcommittee of the Association of State and Interstate Water Pollution Control Administrators [ASIWPCA] revised five drafts of the regulation and met with EPA on numerous occasions.

In addition to the 10 States and interstate agencies serving on the subcommittee, all States received at least two drafts of the proposed revisions before they were published. Eighteen States assisted in the development and testing of the guidance supporting the regulation. Environmental, business and industry groups were also consulted and received drafts of the proposals.

Following the proposed rulemaking, we held 11 public meetings nationwide specifically to solicit reactions and comments. Nine hundred and twenty people attended those meetings. We have received 1,400 letters on the proposal, and we are carefully evaluating all recommendations. We have succeeded in stimulating the debate and interest that we wanted.

Questions have been raised on the feasibility of the water quality-based approach in general and specifically on the approaches outlined in the proposed revisions to the water quality standards regulation. I wish to address these questions directly as a means of clarifying our initiatives for this subcommittee.

In summary, the questions are:

(1) Will there be widespread revisions to State water quality standards under EPA's proposed program?

(2) Given the apparent technical complexity of the water quality standards-based controls, how are the water quality standards review requirements of the 1981 Clean Water Act Amendments and section 303(c) of the acting going to be met?

(3) Will the technical tools and guidance themselves be available in a timely manner to accomplish the standards revision task?

(4) What are the implications of a focus on protection of uses particularly in relationship to high-quality waters?

(5) What is the EPA trying to achieve in incorporating a cost-benefit consideration in the adoption of standards?

One, will there be widespread revisions to State water quality standards under EPA's proposed program?

We do not believe that there will be widespread revisions to State water quality standards, principally for three reasons. As indicated by State submissions for the 1982 national water quality inventory report to Congress—see appendix I—technology-based controls have improved the quality of many of the Nation's rivers and streams.

Overall trends toward continuing improvement in water quality are cited by 21 of the 33 States submitting trend information in their 1982 water quality reports. Twenty States also provided estimates of their progress toward the Clean Water Act's 1983 goal of fishable/swimmable water quality.

These 1982 estimates of waters currently meeting the fishable/swimmable goal range from a low of 66 percent of Rhode Island's 329 miles of streams to a high of 97 percent of New Hampshire's 14,500 stream-miles. While it should be noted that no precise national conclusions about the percent of waters meeting the goal can be drawn because of varying methods of assessing goal attainment, these estimates do indicate that a majority of the Nation's waters now meet the 1983 goal, and hence that a relatively small proportion will require consideration for additional water quality-based controls.

As discussed earlier, technical problems encountered in translating a State's water quality standards into an enforceable permit limitation has resulted in expensive, and sometimes controversial, water pollution control requirements on municipalities for which there were no direct or discernable public health or water quality improvements.

These are conclusions we reached as a result of reviewing these 80 advance treatment projects and other information. As stated earlier, these problems were identified during the course of EPA's review of the 80 advanced treatment projects. While developing the agency's use attainability technical approach, we have conducted a number of case studies across the country. These studies have further confirmed that many of the problems associated with water

quality standards are not so much in their adoption but in their implementation.

Acting under the fiscal year 1983 Operating Guidance for the Office of Water, States are actively updating their continuing planning process [CPP] documents, under section 303(e) of the Clean Water Act, to incorporate technical procedures and policies dealing with the translation of water quality standards to enforceable permits. Adoption of such policies and technical criteria will, we believe in many instances, obviate the need to modify the water quality standards themselves.

For these reasons, it is my view that States will probably not be making major changes in uses. In fact, ASWIPCA has gone on record stating that they do not believe there will be major changes in the uses unless it can be demonstrated that the standards were inappropriate. Governor Matheson of Utah, chairman of the National Governor's Association, wrote:

> There have been charges that these proposed modifications will result in "pollution shopping" by industry. I believe that the integrity, sophistication and expertise demonstrated by State water quality programs renders these charges meaningless, and I repeat my assurances that there is no intention to relax the standards in Utah.

I wish also to emphasize the legal obligation EPA has to assure that State water quality standards meet the requirements of EPA's regulations and otherwise serve the purposes of the act. With much clearer technical guidance on an acceptable procedure for modifying water quality criteria, and an emphasis on the consideration of biological and physical data, as well as the traditional chemical analysis, any standards revisions which would have the effect of lessening water quality will meet a very difficult scientific test.

Additionally, EPA will focus its reviews of States standards revisions on the impact of such revisions on the ability of downstream States to meet their water quality standards.

Two, given the apparent technical complexity of the water quality-based controls, how are the water quality standards review requirements of the 1981 Clean Water Act amendments and section 303(c) of the act going to be met?

As you know, the 1981 amendments to the Clean Water Act preclude the award of Federal grants for the construction of publicly owned treatment works after December 1984, unless the water quality standard for the receiving water has been reviewed and, where necessary, revised.

To insure the most effective management of this review, the proposed approach encourages States to prioritize their efforts and focus first on those waters where technology-based controls have proved inadequate to achieve designated uses.

Our proposal provides that, where the State determines that technology-based controls are sufficient to meet the applicable designated uses, no further review will be necessary. States will thus be able to concentrate their efforts on addressing priority stream segments where water quality standards are needed and have a direct and immediate impact.

To assist in the review of high-priority waters, we have recommended that the State water quality agencies work with other State, Federal, areawide, and local planning agencies, as well as

the regulated community, in assembling the necessary data and in performing the analyses. Presently, although water quality data is being collected, it is collected by different groups—EPA, Geological Survey, State agencies, municipalities, local and areawide planning agencies, universities and the regulated community—for different reasons.

To assist States in establishing a coordinated monitoring program to develop data for this effort, we are preparing guidance on the institutional and technical factors to be considered in establishing such a program. From my own personal experience in Colorado, I have found that municipalities and industries are willing to assist States in gathering data for intensive water quality standards reviews.

From discussions with industrial representatives and statements made at the water quality standards public meetings, I believe that industry will assist States and that States will accept this assistance. States will, of course, need to outline explicit quality assurance and quality control procedures to be followed to insure good quality data.

In the final analysis, those who bear the cost of implementing control requirements under State water quality standards have the greatest stake in the water quality data that is considered in the decisionmaking process. Therefore, I am confident that, if a State so chooses, many of the data collection costs of revising standards can be passed on to the regulated community.

I might add in some cases I know of examples where that is occurring today.

Three. Will the technical tools and guidance themselves be available in a timely manner to accomplish the standards revision task?

For the past 2 years EPA has been developing technical guidance in support of States' water quality standards revisions. As mentioned earlier, EPA published, in October 1982, a Water Quality Standards Handbook designed specifically to clarify technical methodologies in carrying out water quality standards reviews.

In addition, the Agency has developed scientifically valid protocols for modifying recommended national water quality criteria on a site specific basis. Much of this work, in addition to other technical guidance currently under development, is described in a priority project plan "Standards to Permits" which we have appended to this testimony.

Four. What are the implications of a focus on protection of uses particularly in relationship to high-quality waters?

The proposed regulation on water quality standards focuses on uses to be made of the water. It is evident from research and experience gained over the years in implementing water quality standards that physical and biological, as well as chemical, data are appropriate in the determination of an appropriate water quality standard. For this reason we propose a new conceptual approach which focuses on uses themselves rather than on purely water chemistry.

In this regard we received substantial comment on the fact that the proposed rule no longer provides special protection for high-quality waters. High-quality waters are those waters where water quality is better than that needed to protect a fish, wildlife, or rec-

reation use. The current requirement specifies that a public hearing must be held before a State allows for water to degrade to the point of impairing the use. This is an issue of great concern to the public that will be addressed as we revise the regulation. I would appreciate the views of this subcommittee.

For the record, some explanation of EPA's reasoning for modifying this particular requirement is in order. Practically speaking, there are only two circumstances where the current regulation would affect high-quality waters and public hearings.

First is the introduction of a new source discharge into a particular stream reach where there is high water quality. Second is the renewal of a permit for an existing source where consideration is being given to increased wasteloading due to growth or economic development. There are at least two other existing public hearing requirements associated with such decisions.

First, States have adopted in their continuing planning process documents, in accordance with EPA's existing water quality management regulations, public participation provisions in the adoption of total maximum daily loads and incorporations of such wasteloads into State and areawide water quality management plans.

Second, when the permitting authority issues a new permit, or modifies an existing permit, public participation is afforded at the draft permit issuance stage. Clearly, then, our proposed modification of the existing requirement concerning, high-quality waters was not intended to eliminate public participation.

Five. What is the EPA trying to achieve in incorporating a benefit cost consideration in the adoption of standards?

Another provision of our proposed regulation that received substantial public comment was the cost-benefit assessment. As mentioned earlier in my testimony, we believe that the current economic test is unworkable and perhaps unrealistic. We are looking for an alternative, preferably one that was used elsewhere in the act. Although used in a different context, section 302 of the act does require balancing of economic and social costs and economic and social benefits to determine whether there is a reasonable relationship between the two in establishing more stringent limitations based on water quality considerations.

The rule, as proposed, allows, but does not require, States to conduct a cost-benefit assessment in determining whether there is, or is not, a reasonable relationship in requiring more stringent controls, after meeting the technology-based requirements, to achieve water quality standards.

This led people to believe that a cost-benefit ratio would be the basis of a water quality standards decision. This is not what we have in mind. Rather, we wanted a process that provides State decisionmakers and the public with information on impacts—the environmental and economic gains and the costs of the standards decision.

We did not conceive of a benefit-cost assessment as an academic exercise to quantify and assign a monetary value to all benefits. What we had in mind was a commonsense approach for determining what is economically obtainable in a specific location. This is

similar to what at least 15 States use as part of their water quality standards-setting process.

It is important to recall that States' standards are adopted by independent rulemaking bodies appointed by the Governors. These rulemaking bodies represent a broad cross section of interests within the State. Just as Congress makes tradeoffs, so do these relemaking bodies.

As we consider the cost savings that have resulted from our advanced treatment reviews—$.82 billion of projected capital cost deferred on 80 projects and an annual operation and maintenance savings of over $220 million—coupled with the potential backlog of $3.77 billion (as indicated in EPA's 1982 needs survey), we are simply looking for a more workable approach for considering economic impacts and costs in the State standards-setting process.

IV. CONCLUSION

Congress designated a partnership between EPA and the States in carrying out the Clean Water Act. This administration is trying hard to make that partnership a reality. EPA is responsible for the technology-based approach. EPA develops uniform technology-based effluent guidelines to ensure a minimum level of treatment nationwide. States have primary responsible for water-quality standards and the water quality-based approach. It is within this framework that EPA revised the water quality standards regulations.

States set their own water quality standards by deciding the uses to be made of the waters and by setting criteria to protect those uses. EPA's responsibility is to ensure that States' standards "protect public health or welfare, enhance the quality of water and serve the purposes of the act."

We believe this to mean that in reviewing States' standards, EPA must carefully review any changes that might in any way adversely impact public health or welfare, the quality of water or the goals of the act. States will have to demonstrate that any lowering of their water quality standards is appropriate and scientifically valid.

EPA will critically evaluate the analyses States submit as justification of one, changes in criteria which might adversely affect designated uses, or public health or welfare; two, uses which appear inconsistent with section 303(c) of the act; or three, uses which might preclude attainment of the goals of the act where these uses are attainable.

In carrying out these responsibilities, EPA will work closely with States in supplying them with the latest information on criteria and methods to evaluate the attainability of uses.

In this way we believe that we will be assisting States to set appropriate water quality standards, rather than setting State water quality standards for them.

Mr. Chairman, this concludes my statement. I would be happy to answer any questions that either you or members of the subcommittee may have.

Mr. ROE. We want to thank you for your presentation, and we are also pleased to note, members of the committee, that you have

gone into the issue in depth, and let me offer a compliment to you, representing EPA, at the opening of these hearings, which is a little hard to come by today——

Mr. EIDSNESS. Thank you, sir.

Mr. ROE. I think you have been somewhat evenhanded. Although I don't agree with your conclusions in toto, you have been evenhanded in recognizing that all of the decisions made over the years by EPA may have not been sacrosanct unto themselves in the area of technology that we are dealing in.

So I think you have tried to present some kind of a reasonable balance here as to why you are making certain recommendations for changes in those rules and regulations.

Having said that, I would defer to the distinguished gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

Mr. Eidsness, again I want to compliment you on an excellent presentation. I am anxious to get into it in more depth in the future hearings, which the chairman has said we will have.

Mr. Chairman, the thought occurs to me, that, for many of us who are fairly new in this area on the committee, at some point in time it might be helpful to us to be walked through the system step-by-step. It might be good to take a specific body of water, such as a specific lake, river or stream in some State, and just have us see how the whole program is designed and functions to protect the quality of the water. We need to fully understand how the quality standards are set, when they started, and where we need to go with them.

I just suggest this for your consideration. I think it would be helpful to me to better understand some of the things we are talking about, and I think it would be helpful to many of the new members who aren't as conversant and familiar with this subject as you, the chairman, and some of the more senior members might be.

Mr. ROE. Very good.

Mr. STANGELAND. Mr. Eidsness, when did the Agency begin the regulatory review activities that culminated with publication on October 29, 1982, of the proposed regulations?

Mr. EIDSNESS. My understanding, sir, was that the origin of this was a notice in the Federal Register calling for public comment on July 10, 1978. I came on board approximately a year ago, and that is when I became involved in this particular issue.

Mr. STANGELAND. What prompted the Agency to initiate the process? Did the EPA receive any formal requests for proposed rulemaking concerning the regulations, and if so, by whom?

Mr. EIDSNESS. I will have to ask Mr. Schatzow to answer the second part of that question, since I wasn't here back in 1978 when that notice was sent out.

Steve, do you recall any specific request for changes?

Mr. SCHATZOW. I don't recall any specific formal request at that time. There were a variety of concerns both internally within the Agency as well as outside the agency with the water quality standards program, in terms of its coverage, of numerical criteria, in terms of use, in terms of the downgrading provisions. That sparked our interest at that time.

Mr. EIDSNESS. If I could elaborate, sir, from my perspective, there are really at least two major reasons why we are moving forward. One is that EPA does see, hopefully, the light at the end of the tunnel with respect to meeting its commitments to establish national technology-based standards, particularly with respect to best available technology for the control of toxic substance discharge from industry.

We have a good track record in the last year of getting 29 draft and final EPA guidelines for the major industries out, and we are in fact writing guidelines for the basis of those requirements. It is clear to me, as a professional area for this in the last 15 years, that we are going to have to rely more on water quality standards as designed in the act to make further control decisions, and we want to be sure that States have adequate guidance and technology assistance to do that.

Second, in 1981 the Congress and the President signed an Act amending the construction grant program which I made reference to earlier in my comments this morning that basically says that, after December of 1984, no construction grants will be awarded within a State to those particular facilities that are discharging into a receiving stream, unless the water quality standards for that particular stream have undergone a review and revision, if necessary.

The impetus behind that, in my view, was at least in part the concern expressed, from the Appropriations Committee charge to us that the Congress is worried about the effectiveness of spending Federal taxpayers' dollars in the construction grant program. We fund 70 percent of the sewage treatment plants. If the States address those kinds of problems initially, their water quality standards would be better off overall.

With that short time, for those States to do those reviews—we are talking about a year and a half—clearly a lot of this technical guidance is needed now.

Mr. ROE. Will the gentleman yield?

Mr. STANGELAND. I will be happy to yield.

Mr. ROE. One of the issues facing the committee is based upon whether or not the committee should extend the BAT situation, or best available technology, or any one of those standards, simply because the agency has not completed its technological analysis. I think it was 34 different groups you were to work on.

You say you have 29 going now and there was some controversy before you came here over the last 10 years that it took too long to get that done.

Now, if we are at 29 and we are getting to that point, what is the push and shove? Why wouldn't you wait until you finished the BAT situation, the best available technology analysis of the 34 elements?

How can you expect the States to make a judgment? I am asking this as a question. How can you expect the States to make a judgment if you don't have the technical data before them? That is one of the reasons why industry is importuning this committee and the Senate to extend this whole program by 3 years or 48 months, whichever the case may be. I am sure you are aware of that.

Mr. EIDSNESS. Yes.

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Mr. ROE. In other words, what is the rush to judgment here? What is the immediate need to change the regulations, because fundamentally—and I didn't want to ask these questions initially; maybe I should have—fundamentally you are changing the exact direction in which the Congress meant this bill to go in the first place. That is my opinion.

Mr. EIDSNESS. Well, sir, that is certainly not the intent.

Mr. ROE. Having helped to write the law in 1979.

Mr. EIDSNESS. That is certaintly not my intent. The water quality standards regulations in no way affects our obligations under the Clean Water Act to set technology-based standards; for example, BAT guidelines.

Mr. ROE. If the gentleman would yield, that is not really quite accurate, is it, because we are coming back and saying that there are two things that people have to accomplish. They have to accomplish the best available technology. That is what we said they had to do, and then we had other particular elements of the bill which had to do with pretreatment on different types of chemicals, heavy metals and things of that nature, many of which regulations have not been written on as yet.

The fact of the matter is industry has been held up all over the country as to what they should or should not be doing, waiting for some kind of a definitive direction to go.

Now we are coming back and saying that we are going to reverse the emphasis, we are no longer coming back and saying that we are dealing in fishable, swimmable waters, regardless of what the States did or did not adopt. We are coming back and saying that we are going to be dealing in the assimilated load that the receiving waters may be able to sustain.

Basically, that is what you are saying in this, and then you are coming back and saying: Well, OK, maybe we don't have to look too far at those that are not really problems now. We will only look for those that are in trouble now, and so forth and so on. That is what I am hearing from your testimony.

Mr. EIDSNESS. Congressman, I appreciate your concern. I think I understand the question more clearly now. I think I can clear this issue up. When EPA establishes a national technology-based control, such as an effluent guideline, the statutory test that we must meet is consideration of available or demonstrated technology and costs.

Mr. ROE. Right.

Mr. EIDSNESS. EPA does not look and does not know whether the resulting regulations are adequate to protect water quality under State water quality standards, because we don't look.

Mr. ROE. I am thoroughly aware of that.

Mr. EIDSNESS. OK, the second point is that once——

Mr. ROE. How do you judge what the best BAT is going to be if you don't look?

Mr. EIDSNESS. That is because of the way the law is written. Very simply, the only thing we look at——

Mr. ROE. You are supposed to write the criteria.

Mr. EIDSNESS. Well, that is part of the confusion, unfortunately. The statutory tests for a technology standard are the cost and tech-

nology. We do not look at environmental benefits as a statutory basis for that decision.

Mr. ROE. Do you think the law ought to be changed on that if we are not looking to the environment: What is the whole purpose of the bill, sir? The purpose of the bill is to protect the health and the quality of the water supply for the people.

Mr. EIDSNESS. Yes, sir.

Mr. ROE. It is the environment that creates that issue?

Mr. EIDSNESS. Yes, sir, I think the answer to that question has to come in somewhat of a historical context. Prior to 1972, as you know, there was no effective enforcement program under the Clean Water Act, Public Law 660, for example. There was no technology-based requirement, there was no enforceable permit requirement.

Mr. ROE. We are aware of that.

Mr. EIDSNESS. In 1972 Congress said we are going to have technology-based controls, and EPA is going to set them uniformly and nationwide by classes of industry and municipalities. We have done that and we are doing that now for the last classes of industry.

In the process of doing that, looking at the technology and cost, we come up with limitations which are put in permits, but whether or not in these particular limitations there is any real relationship to what is needed to protect a stream is not part of our statutory mandate. That is where water quality standards come into play.

Mr. ROE. If the gentleman would yield.

Would you think, then, that you would have the right to rewrite the regulations without getting statutory authority, or are you interpreting what you believe your statutory authority to be? It is a legitimate question.

You talked about the light at the end of a tunnel, that we are making progress, and that is why I asked you specifically about the $1.67 billion versus the $0.82 billion saving, because you looked at the cost, is what you said, in improving that situation, on the 80 cases that you reviewed. Isn't that a correct interpretation of what you said?

Mr. EIDSNESS. We looked at the cost and the water quality.

Mr. ROE. Therefore, you make some judgmental values as to whether or not it was achieving the goals intended with the investment that was involved, and we could save taxpayers' money, is that what you said?

Mr. EIDSNESS. That is in effect what the Appropriations Committee required.

Mr. ROE. Where does the agency believe it has the authority? If you say it is not statutory in nature, which is what I understood you to say, where do you believe you have the authority to change the law by issuing new regulations?

Mr. EIDSNESS. Well, Congressman, we are really not changing the law.

Mr. ROE. We happen to think you—but go ahead. There is a lot of disagreement.

Mr. EIDSNESS. What we probably need is a good lawyer here. I am not a lawyer. Perhaps you are. My understanding is that there is no statutory link between section 303 of the Clean Water Act, which is the water quality standards provision, and those other provisions of the act where EPA sets national technology-based

standards. In other words, anything we do with the water quality standards regulation in no way modifies, or alters what we are required to do, and are in fact doing.

Mr. ROE. Then, why are you making the regulations in the first place?

Mr. EIDSNESS. The reason is, Congressman, that we have, through 10 years of experience in this program, learned about a number of problems that have arisen, and I tried to cover them in my testimony. In addition, we have a new law, 1981 amendments to the——

Mr. ROE. I helped write that law. I know what was in the law, and that law has been partially thwarted by EPA.

Mr. EIDSNESS. We felt it made sense to go forward to try to circumscribe an approach to regulating under water quality standards which reflected the experience States, EPA and others have accumulated over the last 10 years.

Mr. ROE. Didn't the gentleman say that in the present methodology under the law, that there wasn't as much emphasis placed on the cost of making, of constructing or building plants, advanced technology, and so forth, and now we are coming back and saying that we have to look at that more assiduously? Isn't that what you were saying in part?

Mr. EIDSNESS. Well, that is in effect what the Appropriations Committee report said in so many words, and we have been following that mandate since 1979.

Mr. ROE. Yes; but they are not the authorizing committee. But go ahead.

Mr. EIDSNESS. We view it as a legal obligation.

Mr. ROE. You have a requirement that you do that, that is right.

Mr. EIDSNESS. It does create somewhat of a dilemma, Congressman, because those advance treatment projects were determined on the basis of State-adopted and EPA—approved water quality standards, and clearly in my mind the Appropriations Committee was saying: Let's be sure that notwithstanding how those standards were written or interpreted, that when the rubber meets the road and we have a public financial decision on the line, are there going to be any environmental results, water quality improvements that bear a reasonable relationship to the cost.

EPA has proceeded to review 80 projects, as I mentioned, and we have learned that there are some technical problems and some past policy problems associated with the way in which standards were adopted and implemented. Many of these problems are problems that States are fully aware of and are correcting today.

Our proposed regulations and the technical guidance are designed to try to remedy some of these problems so that, hopefully, one day EPA will not have to conduct such advance treatment reviews because State standards are in fact a very good regulatory tool which do take into consideration cost.

Mr. ROE. Do you observe your proposed change in the regulations only to relate to advanced treatment?

Mr. EIDSNESS. Yes; because by definition——

Mr. ROE. You are not speaking about secondary treatment or primary-secondary treatment?

Mr. EIDSNESS. No, sir, secondary treatment is the analogy to BAT or BCT or BPT. It is a technology-based standard for municipalities, so what our regulations do has no effect on the secondary treatment definition or how it is to be applied.

Mr. ROE. You are not talking about changing anything in the secondary treatment aspects?

Mr. EIDSNESS. Not now, sir. As you are well aware, however, because of the 1981 bill, we are directed by Congress to revise the definition of secondary treatment, which is a technology-based standard, and we are in the process of doing that and hope to publish a proposed rulemaking in the next couple of months in that area.

But in terms of the water quality standards regulation, the advanced treatment processes that we are talking about here are requirements that result from water quality standards adopted by States.

The secondary treatment requirement is an EPA national uniform technology-based standard. Nothing in the water quality standards regulations impinges, alters or modifies the requirement to meet secondary treatment under law and EPA regulation.

Mr. ROE. The gentleman from Minnesota.

Mr. STANGELAND. Thank you.

Mr. Eidsness, under the new regulations is there anything that a State or anyone else will be able to do that can't currently be done under existing regulations? If so, could you explain?

Mr. EIDSNESS. I would like to provide, for the record, a specific written response to that, but I will give you a couple of examples. Generally the answer is there is very little real substantive change concerning the existing regulation and the future regulation.

Probably the most significant of all changes that we are bringing about is to adopt a downgrading policy in our new water quality standards regulation. The issue of downgrading has been a very controversial one, and I have learned that EPA does not now have, under its current water quality standards regulations, a legal downgrading policy. The one that EPA has is invalid. It is invalid because in 1975, when EPA proposed the initial water quality standards regulations, it reserved the discussion of downgrading.

But when it promulgated a final rule, it included a downgrading policy, and in the context of a lawsuit or a court action that we got involved with in the State of Ohio in the last couple of years, EPA learned that we had not acted legally. Therefore, the policy that EPA has been operating under in terms of downgrading is invalid. So one of the significant things we are doing is trying to have in our regulation a downgrading policy which we do not now have.

[The question posed and the response received from Mr. Eidsness follow:]

Question. What activities are allowed the state under the proposed regulation that are not allowed under the current regulation?

Answer. The current regulation could be interpreted under sections 35.1550 (a)(3) and (c)(1) as allowing the development of site-specific water quality criteria and the analysis of attainability of uses, perhaps including a benefit-cost assessment. Unquestionably, EPA's interpretation and application of its regulation, and the lack of definitive guidance offered to the States precluded the States from executing those policies.

In order for EPA to issue and implement the major policy changes described in its proposed regulation, the Agency would have had to follow virtually the same procedures as are necessary for developing a regulation (i.e. Agency review, OMB clearance, public notice and comment). This is due to two factors: (1) current Administration procedures, and (2) previous court decisions have not looked with favor upon Agency actions based on policy guidance which was not clearly supported by a regulatory provision or was not subject to public notice and review.

Overall the proposed regulation is more descriptive and definitive in what is required and expected in the standards program. Under the current Regulation supporting guidance on 10 specific subjects is needed to describe Agency policy and requirements on a variety of issues. This operating guidance did not receive the same level of distribution, review and comment as the Regulation. The support guidance on the proposed regulation, although extensive, covers only 3 subjects, so there is a reduction in the use of guidance as de facto regulation. It also received considerable public review.

The proposal more adequately spells out the appropriate State and Federal roles and explicitly extends Federal review and authority over all general policies applicable to State standards which may affect their application and implementation. In addition, the proposal also provides for the consideration of seasonal uses and the adoption of subcategories of the aquatic protection use.

The proposed regulation provides three additional factors which may allow a stream use to be modified. NOTE: Section 35.1550(c)(3) of the current regulation specifying factors to be considered in justifying stream downgradings was not subjected to public comment when promulgated and is thus invalid.

Mr. STANGELAND. This is, I guess, one of the concerns that some States have. Some—the State of New York, for instance—have expressed concern that the proposed regulations may be interpreted by States as an opportunity to allow for the downgrading of water use based on a liberal reading of the new regulations. How does the agency intend to prevent this from happening? In what kind of specific instances would you want to be downgrading?

Mr. EIDSNESS. Well, I think there are two issues to answer that question, sir. One that I have personally noted with great interest, having attended two of these hearings myself, and that has generated a great deal of concern about modification of the policy on high-quality waters, dates to public hearings. There seems to be widespread support for retention of a policy that would require a specific public hearing be held before a State would allow high-quality waters to be degraded even though it would not impair the use itself. I am impressed by the depth of that controversy and the wide scope of it, and I am very persuaded by that personally.

The other issue with respect to downgrading, is that some States, when they initially adopted their standards in 1972, did so without benefit of any real analysis of what the streams could support in the way of uses.

For example, a State might have adopted a standard for a cold-water trout fishery on a particular stream, and found as a result of subsequent field monitoring data that because of temperature, or because of other physical conditions, there was no way in which you could in fact have a cold-water trout fishery. So our policy would allow them to correct that. But I don't view that as a downgrading. It is more of a correction——

Mr. ROE. Come on, come on, there are people here that are technically trained. Cut that out. That is only an analysis that you are making if somebody wants to put in a trout fishery, and that can also—if the gentleman would yield—mean there would be 20 other things that people want to do in that stream. Now, don't kid us on

that. That is not fair play and that is not intelligent coming from you.

Hear me out. The gentleman is simply asking you, why does EPA want to participate in any downgrading? That gets to the nub of what the change in this policy is truly about. What this policy is you are trying, you, generically speaking, your agency is attempting to set a new set of standards that will achieve the following. It will come back and say that we will no longer look to BAT and technological solutions to the situation.

What we are going to be looking to—you keep shaking your head, sir. If you want to come up here and testify, then I would like you to do it. What I am trying to get at, what are the assimilation capabilities of those waters for more pollution that is involved? To what level do we want to do that economically?

That is, basically, what this issue is about. What the committee is coming back and saying is that we have gotten this far and there is a light at the end of the tunnel, and so forth. Why do we want to denigrate or why do we want to reduce the quality of the waters in the country? That is the question that the gentleman is specifically asking you.

To what benefit does the country derive by doing that, and doesn't that change the ultimate policy that we had involved in the 1972 law?

Mr. STANGELAND. Mr. Chairman, if I can reclaim my time and phrase the question in another way?

Mr. ROE. Go ahead.

Mr. STANGELAND. Has there been indication under the present regulations that States have set water quality standards on a stream, river, or lake, that were far too high, and unattainable, and perhaps unnecessary? We have heard testimony time and again from various individuals who describe a system wherein the water coming from their system is far cleaner than the water receiving the discharge.

Have you found instances where you just can't attain the water quality levels established by the State, requiring a more realistic level of water quality standard for that body of water? Is that the purpose of this? Forget the trout stream. I think that is an extreme example. Is that the purpose?

Mr. EIDSNESS. If I understood the question correctly, sir, yes. There would be instances where a State would be able to modify its standards so that it would take care of the concern that you mentioned.

However, I must also say that the policy, as we proposed it, says that whatever the use and the quality of water necessary to protect that use that is either in effect today or as it relates to November 28, 1975, which is the date of the last regulation, or would be attained as a result of the imposition of national technology-based standards; in other words, secondary treatment gets on-line or BAT get on line for a particular industry in that stream, then that use and that quality must be maintained.

By the way, if you will permit me, that extreme example I gave you gentlemen really wasn't that extreme. It was my own personal experience in Colorado. I spend 5 years studying that very issue

and it was a real life example that had very major environmental and public finance implications.

Mr. ROE. The gentleman from New Jersey doesn't mean to be facetious either, but by the same token are we just going to take one particular example for any particular river—and there's 1 million things to discuss here yet today and in the next ensuing days—and if it doesn't meet that then we will degrade the river.

Mr. EIDSNESS. Yes, sir; in the appendix to the long testimony we have examples that will clarify the question you asked, sir, on this issue of making modifications.

Mr. STANGELAND. I have just one more question, Mr. Chairman, and then I will yield to some of the other members. Isn't it true that nothing in these regulations changes the technology-based requirements of the Clean Water Act?

Mr. EIDSNESS. Yes.

Mr. STANGELAND. Thank you.

Mr. ROE. The gentleman from Michigan.

Mr. ALBOSTA. Thank you, Mr. Chairman.

I would like to remind our witnesses here this morning that last December the Subcommittee on Investigations Oversight had hearings in Texas pertaining to the Clean Water Act and the continuation of it, and the problems that might be encountered there in that State, with reducing the amount of funding, pulling the grant money on the Federal level from States to complete their particular systems, and that we found from the testimony of the mayors there that it would not be feasible to try to meet the clean water standards set under the act in a full funding way.

Furthermore, that there was a lot of pressure put on, I believe, States or the departments of natural resources, whoever is implementing the act in those States, from industries that are located in those States. I noticed in your statement you have a quote from Governor Matheson, I believe, from Utah.

Mr. EIDSNESS. Yes, sir.

Mr. ALBOSTA. It may very well be that the Governor would not intend to relax his regulations to accommodate industry in that particular area, but it could be that other States would find that they may have such high rates of unemployment and so forth that they would have to relax their particular positions in order to accommodate that industry, so that it would not threaten to move or actually move out of that State and go somewhere else.

I would like you to comment in your own personal opinion as to whether or not you think the States can pick up the costs of implementing the Clean Water Act, continue to improve and build the structures necessary to meet the standards or the quality of water under the act, and whether or not you think there is any particular problem with States relaxing their positions pertaining to pressure that might be put on them by some industry.

Mr. EIDSNESS. I would be very happy to, Congressman. With respect to the question of "industry shopping," that is the term that you typically read about in the paper, would industry look for a State that had weaker standards or, alternatively, would a State lessen its standards somehow and by doing so attract an industry so it could help an unemployment problem that they were facing in that particular State.

I personally believe, having been in this field for 10 years now, more than that, actually 15, that industry shopping under the Clean Water Act of 1972 is an academic issue. It is not a real live issue, and let me tell you why.

Industries must meet the national technology-based standards, wherever they go. It doesn't matter where they locate. They must comply with EPA's regulations or its limitations imposed on their facilities.

Second, industry shopping implies a new source, a new industry. Usually, under the Clean Water Act, new source standards are more stringent than existing source standards. In fact, under a number of the effluent guidelines that EPA has proposed or finalized in the past year for toxic control, there are a number of subcategories where the new source standard is zero discharge. So you can't get any more stringent than that, no matter how hard you try.

A third reason is that industries—and this comes from my own background and experience as a consultant in this field as well as comments made at public meetings by industry representatives—industry considers a wide range of things before they make a decision to locate a new facility. Among them are, obviously transportation availability, communications, a cheap labor force, social local amenities in terms of housing and infrastructure to support their own employees and pollution control, of course.

So I think that the effect that the cost of pollution control has on their decisions, based on their own words, are very minimal. I don't see this as a real, practical issue at all, because really, we are talking about a case where industries are regulated very strongly by the Federal Government no matter where they locate. If they go any further than what the Federal requirements are, it will be based on State water quality standards, and I think that is the area of concern that you are really expressing.

Now with respect to the costs, and will States be able to carry out the standards approach. I can only say that they have been very successful for the past 10 years, not without some problems and not without some controversy.

But they have been doing so. States have developed a great deal of expertise, although I know they don't have all that they would like to have, and I certainly hope you will ask State representatives at your hearings next week, or whenever you hold them, as to what their views are on this.

Mr. EDGAR. Would the gentlemen yield?

Mr. ALBOSTA. Yes; I would yield.

Mr. EDGAR. To the question of cost, which I think is an important one that the gentleman is raising, on page 28 of your detailed statement, you indicate that 10 to 14 percent of the States water quality budget would be required for most States to carry out the review you would require of their water quality standards.

Which budgets are you talking about, the current budget or one that is left after EPA cuts back its State grants by 56 percent, as proposed by the 1984 budget? How can States do what we are asking them to do, if we cut back their funding at the same time we are asking them to use more of their budget?

Mr. EIDSNESS. The 1981 Clean Water Act established a new funding provision, section 205J which is specifically earmarked for just this sort of thing. It provides up to one percent of the State allocation of construction grant funds. In 1983 we had $2.4 billion nationwide, for construction grants so we have $24 million to allocate to this sort of activity.

Mr. EDGAR. You said $24 million. For 1984, haven't you dropped from $54 million to $24 million, and in Section 106 grants?

Mr. EIDSNESS. I am not sure those are the correct figures. It sounds about right, but there are three funding sources under the Clean Water Act that can be applied to this sort of thing, and that is the problem in the confusion on the budget. One of them is section 106. The other is section 205G, which supports the construction grant administration.

Mr. EDGAR. That has been cut.

Mr. EIDSNESS. The other one is 205J. No, the 205 G and J are tied to the construction grants authorization, which has not been reduced. We are proposing reductions in the 106 funds, but I might add that overall, at least last year, the States had available for funding activities collectively under 205J and 106, $98 million, which was about $50 million more than they had the previous year. I am not so certain I see a hardship in terms of the dollars that I am responsible for allocating.

Mr. EDGAR. I was just going to ask one followup question as to whether or not the States in their reaction to your proposed rulemaking indicated any distress about the cost.

Mr. EIDSNESS. Yes, sir, and we will provide that for the record.

[The following was received for the record:]

Mr. EIDSNESS. Of the 47 States and territories commenting on the proposed Regulation, 22 mentioned the availability of both State/Federal resources as a potential problem. These 22 were about evenly divided between States tending to favor the proposal and those who don't.

Mr. EIDSNESS. There certainly is some concern about the cost of implementing our approach, but let me also make one note of clarification. States are under an obligation to review their water quality standards. They revise them as appropriate. As appropriate is their determination. Fundamentally, unless we see that they have a standard which does not meet the purposes of the act. Then we have an overriding authority to do something. So I think as the States establish a priority for which streams they are going to look at first, second, and third, and follow that priority carefully, then they will be able to over time conduct the kinds of reviews that they need to.

It may be just a question of timing more than it is resources, in my mind.

Mr. ALBOSTA. What pollutants do you consider now, or toxins do you consider now that are detrimental to the water quality? Which ones have you identified?

Mr. EIDSNESS. Well, just about any pollutant in a sufficiently high enough——

Mr. ALBOSTA. Pollution could be organic pollutants. I am talking about toxins.

Mr. EIDSNESS. Yes, sir, EPA has in the Federal Clean Water Act what we call priority pollutants. It includes heavy metals, organic

chemicals, inorganics, a lot of things that you read off of periodic tables if you ever had a chemistry class in school. That is what we are regulating under the National Technology Standard, but I might also add that States and EPA currently are requiring industry discharges in some regions of the country to monitor their effluent, to find out what toxic substances are there that the EPA regulations are not adequate to control, and therefore, would need further regulatory controls under State water quality standards.

Mr. ALBOSTA. Then you are saying there are toxins there that the EPA does not control, such as dioxins?

Mr. EIDSNESS. Well, EPA does regulate the priority pollutants, the toxic pollutants under the National Technology Standards, but once again when we do that, we only look at the cost and technology. We do not know whether the degree of reduction of pollutants resulting from that technology is adequate to protect the stream on a site-specific basis, because we are not authorized to make that determination.

Mr. ALBOSTA. Do you know of any way that any of our advanced technologies can separate from water quality dioxins that are in there in parts per billion?

Mr. EIDSNESS. I don't know personally, sir, but I will get a response for the record on that one. I don't believe I have one that you want to hear in answer to that question.

[The following was received for the record:]

Dioxins are highly insoluble, highly adsorptive organic chemicals which by virtue of their chemical structure are difficult to destruct. The most prevalent dioxin (TCDD derived from 2,4,5-T) enters the environment by adsorption on particulate matter.

Dioxin enters the waterways through point and non-point sources adsorbed on solid particles. If it is formed in the water from other chemicals as a result of unusual existing conditions, it will be removed most likely almost immediately by adsorption on suspended matter due to the very low solubility. Therefore, the most expedient and effective way to remove dioxin from water is by removal of suspended matter. If there are insufficient adsorption sites available, then flocculant materials such as ferrous salts or clays, followed by settling and/or filtration could be used.

In view of its chemical nature, and insolubility, dioxin is not destroyed by aerobic bacteria, but by analogy to PCB's, it has the potential of being destroyed by anerobic bacteria and also, under chemical or electrochemical reducing conditions and high temperature incineration or pyrolysis. Ultraviolet radiation can readily destroy dioxin after it has been extracted from water by organic solvent. Once again, its high water insolubility enhances its removal by solvent extraction, as well.

Mr. ALBOSTA. I want to elaborate just a little bit further on the problem that I see with implementing the law itself. The mayors of cities like Austin, Tex.; like San Antonio; like Houston; like Port Arthur, Tex.; all testified that there was no way if we cut off federal funding that they would be able to build and bond themselves and increase the cost for the sewer service itself to be able to provide those sections of their city, which are the lower income parts of their city, with sewer service.

It would not work. They would have to go up seven or eight times, maybe even further that that in the cost of that service, so it seems to me like there is a necessity for us to continue the percentage of funding by the Federal Government to accomplish our goals under the Clean Water Act.

I think that there has been recommendations by the Environmental Protection Agency to cut back on the funding for the grants program, and that it will not be accomplished it that happens.

Mr. EIDSNESS. Congressman, the President has requested for fiscal year 1984, $2.4 billion for financial aid to municipalities for the construction of sewage treatment works.

Mr. ALBOSTA. I am not sure that I know the exact figure, but do you know what it was three years ago?

Mr. EIDSNESS. It was the same.

Mr. ALBOSTA. Do you think just the same amount today will build the same structure it would have been built two years ago?

Mr. EIDSNESS. Well, with the rather dramatic lowering of inflation it is going to cost a little bit more, but I think that obviously the cost of sewage treatment control is a concern in municipalities. I have professional experience in public finance, working for municipalities doing facility planning and public financial, and I know from personal experience that good sound public financed policies can indeed pass on some of these costs to new growth and new residences at a reasonable price, and not penalize existing customers in such a way that local governments bear a greater burden.

Mr. ALBOSTA. Are you saying that all of the mayors who testified in Texas during that hearing, which is part of our record, testified falsely that they really could pick up that cost, and they won't have to raise their rates as much as seven times or more.

Mr. EIDSNESS. I have no personal knowledge of what they said. I just state from my own experience that there is a great deal of creativeness that is yet to be tapped in local government to find ways of financing their infrastructures including sewage treatment facilities. EPA, as you probably well know, in the past has financed reasonable sewage treatment facilities for substantial new growth. What that means is the Federal Government has subsidized new growth, and the Congress in 1981 amended the act.

It basically said that after 1984 the Federal Government would not be subsidizing new growth.

Mr. ALBOSTA. Let me interrupt you, if I can.

Mr. EIDSNESS. Yes, sir.

Mr. ALBOSTA. What happened prior to the Clean Water Act? What happened prior to the clear water grant program? What did we do 15 or 20 years ago?

Mr. EIDSNESS. Fifteen to 20 years ago, I think there was a grant program that was at a lower percentage rate, at 33 percent, as I recall. There was a Federal grant program.

Mr. ALBOSTA. What happened to our water quality during that period of time?

Mr. EIDSNESS. I don't know, sir.

Mr. ALBOSTA. You don't?

Mr. EIDSNESS. I wasn't here in the job 25 years ago.

Mr. ALBOSTA. I know, but you must know that our water quality dropped drastically in the last 20 years.

Mr. EIDSNESS. Well no, sir, I don't believe that our information shows that overall, but what I would like to do is provide a written response to that question. We have substantial information, I don't know how far back it goes, that shows what the improvements in water quality are.

As a matter of fact, States under section 305B of the Clean Water Act are required every 2 years to submit a report to EPA which we then compile and submit to the Congress. I would be very happy to provide a summary of that information for the record. I think it is a better picture than perhaps you might think.

In fact, as I mentioned in my written testimony and my oral statement this morning, based on the recent information we received from the States under section 305B concerning the status of water quality, it appears that the great majority of streams do in fact meet what we call the fishable, swimmable goals of the Clean Water Act.

[The following was received for the record from Mr. Eidsness:]

Our limited water quality trend information going back to 1963 shows that we have been successful in cleaning up gross, overt pollution in many of the Nation's waters over the past 20 years. A study of water quality trends between 1963 and 1972 for 22 of the Nation's major waterways indicated that levels of 20 of the 28 water parameters analyzed—primarily conventional pollutants such as suspended solids, turbidity, and ammonia—had improved over that time period. This study showed that, while more rivers were moderately polluted in 1972 than in 1963, fewer rivers were highly polluted.

The 1982 State reports submitted pursuant to Section 305(b) of the Act show that water quality is improving in many of the Nation's rivers and streams. Thirty-three (33) States reported water quality trend information; of these, 21 cite generally improving trends, and 12 report generally stable trends. Twenty-three (23) States report some localized examples of degradation, but none cite Statewide degrading trends.

Estimates of progress toward the Act's "fishable and swimmable" goal were provided by 20 States. These 1982 estimates range from a low of 66 percent of Rhode Island's 329 assessed stream miles to a high 97 percent of New Hampshire's 14,500 stream miles. Goal attainment was assessed differently by different States, and therefore no precise national conclusions about percent of waters meeting the goal can be drawn. However, these estimates do indicate that a majority of the Nation's waters already meet the 1983 goal.

In addition, 35 States cite improvements in their waters as a direct result of the construction of wastewater treatment facilities, and 18 States report improved water quality due at least in part to pollution controls implemented by industry.

Thus, while there continue to be some persistent water quality problems such as toxic substances, the 1982 reports indicate that progress in cleaning up our Nation's waters has been made, and is continuing.

Mr. EIDSNESS. That says in my mind that we have very high quality water. Clearly, there are a lot of areas where we do not, and you would expect to find those areas below a municipality or below an industry.

Mr. ALBOSTA. If that is the case, and it is so easy to do, why are you proposing that we relax the regulation?

Mr. EIDSNESS. We are not proposing that, sir. We are trying to strengthen the effectiveness of water quality standards to regulate pollutants where technology based standards are inadequate to do so.

Mr. ALBOSTA. Not in the secondary treatment?

Mr. EIDSNESS. That is right. What we are doing here has no relationship to the secondary treatment definition, sir.

Mr. ALBOSTA. I have no further questions.

Mr. ROE. The gentleman from New York.

Mr. MOLINARI. Thank you, Mr. Chairman.

I am sorry I missed the earlier part of your statement and some of the questions. I hope I am not repetitive. I am a little confused. I didn't study chemistry back in my academic days, so you will have

to bear with me, but a brief perusal of the proposed modifications leaves me with the impression that indeed the net effect would be a lessening of water quality in certain bodies of water in this country.

Am I correct in that assumption?

Mr. EIDSNESS. I certainly hope not. My own personal view, and I believe it is one shared by the administrator, is that we ought to be getting the highest water quality we can possibly achieve in this land. What we are trying to do is focus the regulations in such a manner that States can on a priority basis clean up streams that are of great importance to them and get the job done and move on to the next stream. It is not to relax water quality.

Mr. MOLINARI. Did I understand you to say that you believe that the States have shown and demonstrated the capability of doing so and the willingness to do so?

Mr. EIDSNESS. Oh, absolutely. I think that States have been very vigorous in regulating pollutants under the Clean Water Act under their water quality standards, and enforcing such requirements, yes, sir. I am very pleased. That is a commentary on the effectiveness of the Clean Water Act and the wisdom of Congress when it passed it in 1972.

Mr. MOLINARI. And as a consequence, you believe in turning more of the decisionmaking process over to the States?

Mr. EIDSNESS. I don't think we are talking about turning over more decisionmaking, sir. I think we are trying to follow what the law says as we understand it, which is to say there is a partnership between EPA and States.

Mr. MOLINARI. How does New York State fit into your classification of the States that have performed well?

Mr. EIDSNESS. I don't have any specific examples to give you of where they have performed well, but I have no reason to believe that the State of New York is not an effective regulatory agency, under the Clean Water Act. They, in fact, issue permits, enforce those permits, and so far as I know they are doing a good job, sir.

Mr. MOLINARI. I guess sometimes we can only relate to those problems that we have within our own district, and certainly my experience is somewhat different than what you are saying in your testimony here today. I have a memorandum from CRS, which is dated March 4, 1981, almost 2 years ago, which was in response to my concerns that the water quality standards of New York State were not being met, and the State of New York was not doing what it was supposed to do to comply with the Clean Water Act. In the response that I received from CRS, I found that water quality standards were adopted in New York State in 1974, and as late as early this year they had yet to update those standards, even though the Clean Water Act called for revision every 3 years.

We are talking about 9 years, so I am at a loss to understand how at this point we are going to say to the States we are going to give you a greater role in the decisionmaking processes.

Mr. EIDSNESS. Sir, the intent is not to give them a greater role but to more carefully circumscribe what that role is so they understand what their responsibilities are. To answer in a historic context when the 1972 act was passed, EPA's attention was focused primarily on the new technology performance.

Mr. MOLINARI. May I interrupt?

Mr. EIDSNESS. Yes, sir.

Mr. MOLINARI. How about the funding? Is there any concern that you have that they would have the necessary funding to perform the job?

Mr. EIDSNESS. Yes, I course, I am concerned, but I am a manager, and any manager will tell you that funding problems, resource problems, can be resolved if you set clear priorities and you follow those priorities. I believe that States have the ability to do that.

Mr. ROE. If the gentleman would yield.

Mr. MOLINARI. I will be glad to yield, Mr. Chairman.

Mr. ROE. I let you go quite far afield and maybe it is because of the questions but if we are going to get into that, there is a great difference of opinion in this committee and the administration on that issue.

I mean I can't let some things go in the record unchallenged. Before we even got into the 1981 change of law, we were allocating, I believe, the figure was $3.6 billion a year that sticks in my mind or thereabouts for the grant-in-aid program.

Am I right on that figure? Wasn't it around that figure?

Mr. OBERSTAR. $6 billion.

Mr. ROE. So that what this administration has already done is to cutback at least $1 billion in eligible funding for the municipalities to carry out, their communities and regions to carry out their work. That is No. 1.

If the gentleman would yield further, that this definitely is a direct relationship from the quantitative dollars that are made available under the grants program as to what we are doing in this particular change of direction here.

How long have you been here; a year did I hear you say?

Mr. EIDSNESS. Approximately a year, sir.

Mr. ROE. The battle that was fought last time, and I didn't want to take the time this morning, but we have to do it to get the record straight, the battle that was fought the last time was based fundamentally upon the point of view of whether or not the Federal Government was going to provide what level of grants to the States to achieve the goals that were established by EPA, and by the law.

EPA was the one who approved the drawings, the plans, and the specifications in every single project throughout the country. That was their responsibility, and the funding that was made available was at least $3.4 billion or higher than that.

This administration came and cut those funds back to $2.4 billion. In the meantime what they had done, so you know the next time you testify; they, the administration and EPA had approved segmented contracts and partial contracts. They come to a project that could be $400 or $500 million. They come back and say, "We will approve the interceptors this year. I am not faulting this. We will approve the digesters next year. We can't give you all the money in one year and you, city or municipality, go ahead and build these plants or facilities."

That is what has happened to 10,000 projects, throughout this Nation, many of them left undone. The fact that the EPA has come back and the administration has cut those costs has seriously de-

layed the completion of regional sewage systems throughout this entire Nation. That, sir, is a matter of fact and on record 50 times both here and in the Senate.

Now when you are coming back and you are saying here what you are going to—why do we want to downgrade receiving waters? That is the question the gentleman has asked. That is what has been asked all morning. What is the point of it? If we are to improve the water supply and the water quality for this country, why is the EPA moving to provide a mechanism to downgrade the quality of those streams that are not yet polluted? Is that a fair question? Is that what the gentleman is trying to get at in part?

Mr. MOLINARI. I think that will lead me into the area of question that I have started out on, Mr. Chairman.

Mr. ROE. Can you answer that? Why should we create a mechanism to downgrade?

Mr. EIDSNESS. Sir, the EPA is not advocating or promoting downgrading of waters, but we clearly——

Mr. ROE. But that is what you just got done saying, sir. Either that or I am not hearing you.

Mr. EIDSNESS. No, sir. There has historically been a perception and a reality that there was a policy in EPA regulations to allow on a case-by-case basis, subject to EPA's review and approval, a State to downgrade a particular stream segment in terms of their standards and it was fairly carefully circumscribed.

The point I was making was that we have since found that that policy was not legal, and we are trying to introduce a policy that is legal, because there is a need and there is a statutory basis for such a policy under the Clean Water Act.

We are looking for suggestions. We have had 11 public meetings. We have 1,400 comments. I asked this committee what it thinks is an appropriate approach. If you want to argue the merits of whether or not we need a downgrading policy, I think that would probably be a good discussion as well.

Mr. ROE. That is precisely the point that this gentleman is trying to argue. I don't want to take the time.

Gentleman from New York.

Mr. MOLINARI. I guess I am more confused than I was before, Mr. Eidsness. Let me try to ask you a theoretical question. Assume that we have a reach of water which has been designated for industrial use. An industrial discharger is located on that body of water. The Clean Water Act water quality standards for that body of water are not being met. Under your proposed regulations, therefore, is it true that a cost-benefit analysis would be performed, and if it concluded that the cost of this industry complying could not result in attaining the standards that had been in place, then industry in that particular case would not be forced to spend the amounts of money that they were being required to under the Clean Water Act. Is that correct on my part?

Mr. SCHATZOW. I think if I can try, Congressman Molinari, to distinguish between what the existing use of the water is and the designated use in the State standard. Under the EPA proposals, all existing use of the water must be maintained. If a water now supports a warm water fishery——

Mr. MOLINARI. Does that in any way permit industry to increase the amount of pollutants as long as the standards are still being met?

Mr. SCHATZOW. The industry must meet all the technology-based requirements such as BCT and BAT. If the water quality in a particular stream were better than the minimum necessary to protect the use under this proposal, it would allow a State to increase the amount of pollution on that particular water body.

Mr. MOLINARI. That was my reading of it.

Mr. SCHATZOW. However, let me just try to make this clear. That can also be done under the existing regulations.

Mr. MOLINARI. Maybe there is a fault in the existing regulations, but that doesn't mean to me that we should perpetuate it in revised regulations. Should we not consider plugging the hole in existing regulations, if that is going to help to clean up the quality of our waters?

Mr. SCHATZOW. I think the problem that we were trying to deal with, in these proposed regulations, was in those areas where the States designated a water body for a particular use back in 1972, a use that is not now being attained and has not been attained in that particular water body.

In those situations where we are meeting the national technology standards, both for municipalities and for industry, but would not attain that use, nor is it being attained now, under what circumstances, and with what guidance could the States consider or reconsider the appropriate designation of that water body.

Now under the existing regulation, they are allowed to reconsider it, and under these regulations they would also be allowed to reconsider it. The question is, I think what caveats and what guidance would the EPA give to the States in making that consideration?

Mr. MOLINARI. I guess I know——

Mr. ROE. If the gentleman will yield, if you are saying that it is applicable and I think it is a germane point, in either one of the regulations, why are we changing the regulations?

Mr. SCHATZOW. There are a few specifics that I think Eric has mentioned in his testimony. One specific was in terms of the economic test. Under the existing regulations, were we to lower the designated use, the State would have to substantiate the fact that meeting that use would result in widespread social and economic harm. That test, many people including the States, believe to be a much too rigorous test.

Mr. ROE. Can the gentleman yield on that specific point, and this may help us clarify something. Just a few months ago we had hearings on the 301H section, on the waiver section of the discharge to ocean and tidal waters. Do you recall that issue? This was maybe three or four months ago.

Mr. EIDSNESS. I was here.

Mr. ROE. Then you understand what I am talking about. I recall that as we were debating that particular issue, tremendous concern arose. What methodology would EPA follow vis-a-vis the point of waivers. Do you recall that issue?

Mr. EIDSNESS. Yes, sir.

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Mr. ROE. Immediately after that hearing, or just before it because of actions that had been taken, and I mean this with the greatest of respect, in the northern regional district of EPA there was a whole plethora of communities from Hudson County, and I speak now authoritatively, because it is my State, that felt they negated their regional system.

They virtually negated it. They had their bonding set. They had $140 million, they had floated the bonds on the whole, but they negated the entire thing and communities all along that river now are putting in for waivers. I do compliment EPA because I know you have been very strict and haven't granted those waivers as yet, but by the same token they said why should we be on the economic test, if we are going to be putting higher quality water into the Hudson River, vis-a-vis the tidal flow and the pollutants coming from New Jersey and New York, which was precisely the issue. Why should we spend the money to clean up the effluent that we are going to be putting into the Hudson River. That was specifically the issue.

Now we are coming back and saying here, as the gentleman, Mr. Schatzow, was saying, "Yes, if we change these regulations, and bear me out if I am right or wrong, that we would be able to, the streams where they were changed would be able to assimilate a higher level of bio-oxygen demand." Isn't that correct?

In other words, they would be able to accept more pollutants. Now the question that is before us is, do we want to go on that same course, when we are mightly concerned about the 301H section which has yet to be dealt with by this committee in depth when we get into that hearing. Or do we want to set another thing going where we are coming back and saying it is the economic test involved. I know in my own State, and I know in New York, New York City rebuffing when they should have to put in that other major plant that they were working on and going into secondary treatment.

Why should they do that now? They are saying we don't have enough money available to be able to do that secondary treatment. Now we can't sell the committee that if we start going down these relaxation routes that apparently this speaks to. We are not going to be helping to denigrate that system, and we are coming back and no longer saying it is fishable and swimmable waters we are looking for.

We are coming back and saying, "Well, we are only going to be able to do that which we can do with the amount of economic funds that are available." Is that a fair analysis to make?

Mr. EIDSNESS. I would like to respond to that, and I think I can clear up some of your concerns. I hope so, and I will try very hard.

One is that on the 301H waiver process, economics and cost are not considerations that EPA takes into account. We do not for statutory reasons, consider costs. The test that has to be met on a 301H waiver is that whatever level of treatment that EPA ultimately would agree to, must be sufficient to assure protection of balanced population of fish, shellfish, and wildlife in that receiving stream, and also meet water quality standards, if there is a State-adopted water quality standard.

Now as I understand it, from a legal interpretation point of view, if you meet the balance test of fish and wildlife in the 301H waiver, you have met the use under a State standard. However, State standard, under section 510 of the Clean Water Act, can also be even more stringent. I do not view that there is any relationship between 301H in terms of any opportunity for relaxation——

Mr. ROE. Nor did the gentleman from New Jersey say there was, but I know darn well what happened when EPA started in that direction. I don't know what your intent was, but I can tell you flat out that Hudson County canceled its entire regional bond issue, and 18 of those communities came in for a waiver under the system, and the whole program is now delayed again another 3 or 4 years. Now they are going to go into court and the whole bit.

The point I am trying to get at is if you go in that direction here, and you are making the economic test, you have a partial economic test in there now and they are coming back and saying it is going to cost an extra $400 million to do that job. Therefore we don't want to do this; that is what is concerning this committee because that is not want you meant to do.

That is precisely what has happened in New Jersey, so something has got to be wrong in between on part of that.

The gentleman from New York.

Mr. MOLINARI. I would like to pick up where you left off, Mr. Chairman. I happen to know that there are 31 applications for waivers in region 2, and those have been filed primarily by the States of New York and New Jersey, and by municipalities located in both of those States. Nobody, including EPA can tell us what the impact would be if all those waivers were granted.

As a matter of fact, they can't tell us what the impact will be if six were granted. My understanding is it is going to take at least 18 months before region 2 will be able to make a decision. In the meantime, what Mr. Roe is describing is what is happening—the municipalities that have filed their applications for waivers are sitting back and not spending any more dollars in proceeding to secondary treatment because they figure maybe the waivers are going to be granted. If this is true, in effect New York is hurting the environment and we are retarding the point at which at least some of them will be required to move forward and spend some more money and that has me deeply concerned.

I would like to pick up where I was before and ask: with the cutback in funding, how do we expect the cost-benefit analyses to be done? Who is going to finance it?

Mr. EIDSNESS. Congressman, the cost-benefit analysis, as I mentioned in my statement, is an optional consideration. Let me explain the origin of this. Most State standards are adopted by a body appointed by a Governor or legislature of lay people. They are part-time, nonprofessionals in the field, representing a cross-section of that particular community.

In other words, it is in effect a legislative body perhaps such as the Congress here in Washington. When anybody at this level—I hope you will agree—makes decisions. They are made in the context of what is it going to cost? and what are we going to get for that.

What we are simply suggesting is that rather than have that sort of faint thought process going on inside people's heads, that the State agency could, if they chose, develop more information on a structured basis and present that to the responsible decisionmaker or board appointed by the Governor or legislature.

There are a few States that don't have commissions or boards. New Jersey does not have one. I assume, all their regulatory policies are made by paid civil servants as opposed to appointed bodies. What we were trying to get at is to provide better structure and better information for that lay body to set State policies in water quality standards.

Mr. MOLINARI. Are you aware, Mr. Eidsness, about the monitoring of water quality in the New York-New Jersey region?

Mr. EIDSNESS. Not in any great detail, no, sir.

Mr. MOLINARI. Do you know who monitors it?

Mr. EIDSNESS. Well, I assume that the State pollution control agencies do. We fund them to do some of that, so if they are not we have a problem. Also, the discharges as a condition of their permit conditions have to monitor their effluents so we know whether or not they are meeting their requirements.

Mr. MOLINARI. What about the role of the Interstate Sanitation Commission?

Mr. EIDSNESS. I am not familiar with that group, sir, but I hope that they are doing some, because that is where we need to spend some of our effort, getting some of this data together.

Mr. MOLINARI. I have and I would like to introduce into the record, Mr. Chairman, four yearly statements and they are entitled, "Percent of Time Interstate Sanitation Commission Dissolved Oxygen Requirements Were Met at ISC Remote Automatic Water Quality Monitoring Stations." The earliest covers the period of October 1, 1977, through September 30 of 1978. The others cover the three years following that.

[The material referred to follows:]

Cong. Millinni. Info.

PERCENT OF TIME INTERSTATE SANITATION COMMISSION DISSOLVED OXYGEN REQUIREMENTS WERE MET AT I.S.C. REMOTE AUTOMATIC WATER QUALITY MONITORING STATIONS FOR THE PERIOD OF OCTOBER 1, 1980 THROUGH SEPTEMBER 30, 1981

MONTH	STATION 1 AK/CE	STATION 2 ER/CE	STATION 3 ER/TN	STATION 7 KVK/USG
October 1980	79.6	100.0	100.0	100.0
November 1980	100.0	100.0	100.0	100.0
December 1980	100.0	100.0	100.0	100.0
January 1931	100.0	100.0	100.0	100.0
February 1981	100.0	100.0	100.0	-
March 1981	100.0	100.0	100.0	100.0
April 1981	100.0	-	100.0	100.0
May 1981	100.0	100.0	100.0	100.0
June 1981	89.0	100.0	100.0	100.0
July 1981	38.5	96.9	79.5	95.7
August 1981	21.5	73.4	8.0	96.8
September 1981	54.2	88.5	57.8	94.2

PERCENT OF TIME INTERSTATE SANITATION COMMISSION DISSOLVED OXYGEN REQUIREMENTS WERE MET AT I.S.C. REMOTE AUTOMATIC WATER QUALITY MONITORING STATIONS FOR THE PERIOD OF OCTOBER 1, 1979 THROUGH SEPTEMBER 30,1980

MONTH	STATION 1 AK/CE	STATION 2 ER/CE	STATION 3 ER/TN	STATION 7 KVK/USG
October 1979	97.6	100.0	99.1	100.0
November 1979	100.0	100.0	100.0	100.0
December 1979	100.0	100.0	100.0	100.0
January 1980	100.0	100.0	100.0	100.0
February 1980	100.0	100.0	100.0	100.0
March 1980	100.0	100.0	100.0	100.0
April 1980	100.0	100.0	100.0	100.0
May 1980	86.0	100.0	100.0	100.0
June 1980	0.8	100.0	100.0	100.0
July 1980	0.0	97.2	73.7	35.5
August 1980	4.5	39.8	23.2	68.2
September 1980	63.1	98.2	12.2	96.0

PERCENT OF TIME INTERSTATE SANITATION COMMISSION DISSOLVED OXYGEN REQUIREMENTS WERE MET AT I.S.C. REMOTE AUTOMATIC WATER QUALITY MONITORING STATIONS FOR THE PERIOD OF OCTOBER 1, 1978 THROUGH SEPTEMBER 30,1979

MONTH	STATION 1 AK/CE	STATION 2 ER/CE	STATION 3 ER/TN	STATION 7 KVK/USG
October 1978	62.8	100.0	100.0	99.8
November 1978	91.1	100.0	100.0	100.0
December 1978	100.0	100.0	100.0	100.0
January 1979	100.0	100.0	100.0	100.0
February 1979	100.0	100.0	100.0	100.0
March 1979	100.0	100.0	100.0	100.0
April 1979	100.0	100.0	100.0	100.0
May 1978	100.0	100.0	100.0	100.0
June 1979	97.0	100.0	100.0	100.0
July 1979	40.4	53.0	57.1	71.0
August 1979	34.3	76.4	29.6	81.5
September 1979	31.5	88.7	50.8	95.3

PERCENT OF TIME INTERSTATE SANITATION COMMISSION DISSOLVED OXYGEN REQUIREMENTS

WERE MET AT I.S.C. REMOTE AUTOMATIC WATER QUALITY MONITORING STATIONS

FOR THE PERIOD OF OCTOBER 1, 1977 THROUGH SEPTEMBER 30,1978

A. KILL AT CON ED. EAST RIVER AT THROGS NECK B.

MONTH	STATION 1 AK/CE	STATION 2 ER/CE	STATION 3 ER/TN	STATION 4 RR/VB	STATION 6 NAR/FT WD	STATION 7 KVK/USG
October 1977	68.3	100.0	89.3	91.7	-	99.0
November 1977	98.2	100.0	100.0	100.0	100.0	100.0
December 1977	100.0	100.0	100.0	-	100.0	100.0
January 1978	100.0	100.0	100.0	-	100.0	-
February 1978	100.0	100.0	100.0	-	-	100.0
March 1978	100.0	100.0	100.0	-	100.0	100.0
April 1978	100.0	100.0	100.0	-	100.0	100.0
May 1978	76.9	100.0	100.0	-	100.0	100.0
June 1978	19.7	100.0	100.0	-	100.0	100.0
July 1978	40.1	58.0	77.2	-	89.3	90.7
August 1978	1.1	2.4	9.0	-	-	4.3
September 1978	24.2	59.9	72.1	-	-	86.2

Mr. MOLINARI. If you take a look at the figures, I believe that you will find shocking the percent of time that indeed the standards were met.

For instance, we see that during the summer months when there is a particular problem, the percentages drop sharply. And now I have learned that the Interstate Sanitation Commission, due to a cutback in funding, is going to cut their monitoring in half, and I say to myself good God, who in the world is going to really look at the water quality? We have a hepatitis outbreak in this area. It is unexplained. Nobody has been able to say what is accountable for that outbreak of hepatitis.

However, we do know that we have had serious problems with contamination of clams, and of course the suspicion is that it is caused by the pollution of the water. With the raw sewage that we have abounding in the waters surrounding New York, I would guess that it is no great wonder why this occurs. Nevertheless, here is a body that we look to, and it has a good reputation; ISC. It is a tristate commission; and yet they are telling us that with the cutback in funding, only half of the monitoring that they did before is going to be accomplished today. So when we take all these things into consideration, what Mr. Roe said about your waivers and what-not, I wonder in what direction we are heading.

I am very much concerned. If I read these correctly, and I apologize because I didn't have enough opportunity to study them, but from a quick perusal, I am somewhat convinced that we are heading in a direction opposite to the one in which we should be going. I hope to God when I finish making my study that I am wrong in that assessment, because EPA has come under a lot of fire in the last month or so, and I don't think we need to continue that course here. I certainly don't want to suggest that that is a conclusion on my part, but it is certainly a concern on my part.

We have a serious problem in our area. I am sure it is not unique to our area, and I would like, Mr. Chairman, to get an idea as to when there is going to be a second part to this hearing. I am wondering if you can give this gentleman an idea as to when it is so I can be better prepared the next time around.

Mr. ROE. We are obviously not going to be able to conclude your part of the hearing today because a host of members have other questions and there are two or three hearings going on at the same time which is not your fault, so I would think what we will do is hear from a couple more of our members and then recess this session, and then we will call Mr. Eidsness and Mr. Schatzow back again after we have had a chance to do so.

Mr. MOLINARI. Under those circumstances, I will cease my questions.

Mr. ROE. Mr. Weber.

Mr. WEBER. As a new member I am looking to an educational process so I won't take a whole lot of time, but I am interested in one aspect of the regulations and maybe it was discussed before I was here. As I understand it, the reason for the minimal standards, or one of the reasons in all of our laws, is to try to prevent the kind of competition among the States that might lead the pollution becoming an economic development tool, if you will. For example,

we see States, particularly in the Northeast and Midwest, in very dire financial straits, including my State of Minnesota.

I am not familiar with your proposals to the extent that some of the other members of the committee are, but I just wonder if you can try and explain to me how the proposed changes in regulations might affect the ability of States to use water quality standards as a tool to compete for industry. The source of my concern relates to the fact that some States are increasingly unable—at least in the short term—to compete economically through changes in the tax law, because they have incredible revenue needs. I know in such cases they are looking for every other opportunity they can find to compete and that competition is becoming very fierce.

Will your changes in regulations affect that? Will they result in the creation of "pollution havens"?

Mr. EIDSNESS. That is an excellent question, sir. I will try to make my answer as brief as possible on this.

I think that the opportunity for States changing standards which would have the effect of attracting industry are almost nil. For one reason, I don't believe States are going to modify their standards, downgrade them as people say they will under our proposals. I think they will continue to have good strong effective standards as a regulatory tool. Regardless of what a State might do with its standards, an industry must meet the national technology requirements. Under these technology based requirements, the percent removal of pollutants may be somewhere from 73 to 90 percent.

If it is a new source, a new discharge, the requirements are more stringent than those of existing sources. In some cases, our regulations for national technology standards for industry require zero discharge. You can't get more stringent that that, so I really don't believe that there is going to be a problem.

Also industry representatives have stated that, the cost of pollution control is not a significant issue as compared to all of the other issues that they take into account in deciding where to locate. Transportation centers, job market availability, local infrastructure; whether they have a nice environment for their own employees, communications, transportation are as important, I really believe it is more of an academic issue.

Mr. MOLINARI. Would the gentleman yield?

Mr. WEBER. I will be glad to yield to my colleague.

Mr. MOLINARI. That question was asked before and I understand your answer.

Mr. EIDSNESS. Yes, sir.

Mr. MOLINARI. The question comes to my mind, what would prevent a corporation that wants to take advantage of an advantageous economic situation, from buying the stock of a corporation, which owns an existing source? You are talking about new sources, and I understand that, but how about going in and buying an older building someplace, where it would not be a new source. Simply buying a stock in the corporation, it is going to be called the same name and there is no patent change as far as the public is concerned.

Mr. EIDSNESS. Yes, sir, they are still regulated by the HPDES discharge permit system, and that permit would require that they meet national technology-based standards. If they wanted to in-

crease their flow and buy an old factory, that industry would have to get a Federal permit or a State permit as the case may be. The permit would be based on the national uniform technology-based requirements.

Mr. MOLINARI. Would the technology be different?

Mr. EIDSNESS. No; it would be the same for that industry category. It if was iron and steel it would be the same. If it was textiles, it would be the same.

Mr. MOLINARI. Excuse me, but wouldn't one be a new source and have stricter requirements than the existing source?

Mr. EIDSNESS. I am sorry, sir. What was the question?

Mr. MOLINARI. The new source; building from the beginning, a new source; am I not right in assuming that the standards would be stricter than somebody who would be buying an existing structure somewhere?

Mr. EIDSNESS. Not in all cases, but generally.

Steve, do you want to respond to that? He set the effluent guidlines here.

Mr. MOLINARI. My counsel back here keeps saying yes, yes to the answer, and I have a lot of confidence in him.

Mr. SCHATZOW. Any source would have to meet best available technology requirements. A new source would have to meet new source performance standards, or an existing source that substantially modified and expanded its production.

Mr. MOLINARI. Stricter than existing, that is the point I am getting at.

Mr. EIDSNESS. They are in some cases stricter. In some cases they are not. It depends. The statutory tests are somewhat different for existing sources than new sources. In some areas, in some industrial processes, where for instance the cost of retrofit might be prohibitive for an existing source the standards for new sources are more stringent, but I think one of the things I was saying to keep in mind, when we are talking about toxic removal, through BAT processes, we are talking in a range of over 90 percent removal. What we are talking about is that shading on the last 10 percent in terms of where a new source standard may actually be more stringent than an existing source standard. We are talking about that range.

The most significant costs are the costs that all facilities have to bear, and then there are some smaller incremental costs that might apply to new facilities.

Mr. EDGAR. Thank you. I have no more questions.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman.

As I have reviewed the proposed regulations, I personally applaud the effort to move more and more of the responsibility to the States, and I think most of the States, certainly my State, is taking a greater and greater responsibility in controlling the water quality.

I personally feel that the quality of the water is the primary issue, and as long as we set standards for it and the States are meeting those standards, how and who does it is not as important.

One of the concerns I have relates to the fact that I represent an area that is near the border of Mexico, an area where there are

rivers and the ocean. How do you address the situation in which there are no standards or weaker standards across the border with respect to rivers or ocean waters that effect U.S. waters?

Do your regulations take into account in any way the situation involving a border city that cannot meet the standards, simply because it doesn't have full control of the effluent that goes into the waters that affect them?

Mr. EIDSNESS. Congressman Packard, that is an excellent question. I have to say that is the first time I ever heard that question. It is a very interesting one you pose.

Mr. PACKARD. The Tijuana River is a case in point.

Mr. EIDSNESS. I agree.

Mr. PACKARD. Tijuana dumps into the Tijuana River but so do some of the border cities that are in and around my district. If you run your tests on that water, there is no way those border cities in the United States could meet the qualifications.

Mr. EIDSNESS. There are two issues that are presented. One is, does the EPA water quality standards regulations and whatever the States subsequently adopt as their own regulations under our guidance allow your community on the U.S. side to somehow take into account that no matter how much they clean up they are not going to be able to do very much because of pollution from across the borders.

I think the answer to that is basically no, because once again national technology standards have to be met. Your municipalities would still have to meet secondary treatment no matter what our regulation does here; but probably more important, this is a critical international issue.

In the case of Canadians, for example, we have an agreement with them, an International Joint Commission, to jointly coordinate and regulate pollutants going into the Great Lakes. We also have an agreement with the Government of Mexico on salinity as you are probably well aware, but I don't know that we have any agreement specifically dealing with the issue you mentioned, but I would be very happy to look into this.

Mr. WEBER. Would the gentleman yield? Isn't this the same issue that we have with the Canadians on air quality, which is not resolved? I don't expect that that is necessarily your area, but isn't that a controversy that we have with the Canadians over how we regulate emissions from smokestack industry?

Mr. EIDSNESS. Yes; there is a controversy. I wish the Canadians were doing as good as we were, although they accuse us, I think unjustly, of not doing our job over here on this side of the line. We do have water agreements which are very effective with the Canadians. I might add that the whole basis for the agreement on the Great Lakes, is water quality based, just as we are talking about here. It has been very, very effective; and the accomplishments achieved in the last 10 years in cleaning up phosphorus-lead products has just been phenomenal.

Mr. WEBER. I thank the gentleman for yielding.

Mr. PACKARD. I think further research ought to involve the outflow going into the oceans because, obviously, the currents will affect the effluent. There should be testing of the water all up and down the southern California beach, to just right at the border.

One other question. As you turn more and more responsibility of water quality over to the States through revising your regulations, if a specific State does not meet those qualifications, what kind of sanctions or requirements are built into your approach?

Mr. EIDSNESS. Under the act if the State has adopted a standard, under their own rulemaking procedures that does not meet the requirements of the act, EPA has an overriding authority and must theoretically within 90 days promulgate its own standard. EPA has exercised this authority in the past and I would expect we would do so in the future in the case of a State that modifies a standard that we cannot accept as meeting the intent of the law.

Mr. PACKARD. Thank you. I have no further questions.

Mr. ROE. Thank you.

What we are going to do, because we have another hearing coming up this afternoon, is recess this hearing at the call of the Chair, and then coordinate with you so you can return, because there are a number of other members who have dual hearings and they couldn't be here and they wanted to ask additional questions.

I want to thank you very much for being with us this morning. As you can see, there is a great, considerable interest and a lot of learning perhaps both ways to go, so we do appreciate your patience and your indulgence and we look forward to seeing you back at our next hearing.

The gentleman from Minnesota.

Mr. STANGELAND. I would just ask unanimous consent that I might be allowed to submit a series of written questions to Mr. Eidsness for the record. I would also request that all committee members be allowed that privilege.

Mr. ROE. There is no objection. It is so ordered.

[The questions posed and the responses received from Mr. Eidsness follow:]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
THE ADMINISTRATOR

Honorable Arlan Stangeland
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Stangeland:

Enclosed are the Agency's responses to thirteen questions you submitted following the Water Resources Subcommittee's Water Quality Standards hearing on February 23, 1983.

Thank you for the opportunity to respond to these questions. If we can provide any additional information or respond to further questions, please do not hesitate to contact me.

Sincerely yours,

Leland E. Modesitt, Jr.
Director
Office of Legislation

Enclosure

cc: Mr. Joseph A. Italiano

1. I BELIEVE THAT MOST STATES WOULD AGREE THAT EXISTING DATA ARE OFTEN -- AND MANY WOULD SAY USUALLY -- INADEQUATE TO MAKE VALID USE ATTAINABILITY DETERMINATIONS. GIVEN THE FACT THAT NECESSARY STUDIES ARE QUITE EXPENSIVE, HOW CAN ANYONE BE SURE THAT THERE WILL BE ADEQUATE FUNDING TO PERFORM THIS WORK, ESPECALLY IN LIGHT OF THE MAJOR BUDGET CUTS THAT HAVE BEEN PROPOSED IN FY 84 FOR BOTH STATE GRANT ASSISTANCE AND EPA'S WATER QUALITY PROGRAM? WHO WILL DO THESE STUDIES AND ANALYSES AND WITH WHAT FUNDING?

A. According to the most recent information submitted by States under section 305(b) of the Clean Water Act, the vast majority of our nation's streams meet the fishable, swimmable goals. A relatively few streams are water quality limited and therefore possible candidates for review as to the appropriateness of water quality standards.

EPA in its FY 1983 and 84 Operating Guidance requested States to establish priority water bodies as a basis for ranking which streams will receive attention with respect to use attainability analysis and water quality standards reviews. Setting priorities is a basic management tool and a necessary step for States to make the best of limited resources in managing for environmental results. We encourage States to identify priority water bodies--that is, water bodies for which pollution abatement and control decisions are most needed to prevent or reverse the impairment of a designated use--and to organize State efforts to focus on these waterbodies. Grants under section 205(j) of the Clean Water Act are negotiated on the basis of these priority water bodies to assure that adequate funds are dedicated to conducting analysis related to water quality standards revisions.

Resides applying priorities, EPA is also strongly encouraging States to develop local cooperative monitoring programs as another way to obtain maximum benefit from limited resources. We encourage States to involve local groups, dischargers, and other federal agencies in cooperative monitoring programs to implement the water quality based approach. Of course, we and the States will insist on adequate quality control procedures, and States will have the responsibility to interpret the data.

Additional resources for water quality program related work were also made available through Section 205 (j) of the 1981 Construction Grants Amendments. This section set aside one percent (1%) of a State's construction grant allotment for a variety of water quality planning purposes. Although our data are still preliminary, States indicate that they plan to use this money for detailed reviews of their water quality standards, and to conduct the type of scientific and technical analyses we recommend.

Based on the work plans EPA has received from 15 States for use of the Section 205(j) grant funds authorized in FY 1982 and 1983, the majority of the $45 million to be obligated this year will be related to site specific analyses associated with treatment reviews and water quality standards reviews. This $45 million, along with the $24 million available for Section 205(j) in FY 1984, will provide States with substantially greater resources for water quality standards and related monitoring work than in 1982, when about $6 million of Section 106 grants were used for these purposes.

Overall State grant obligations[1]/ for activites traditionally funded by Section 106 grants will increase from a $50-53 million level in FY 1980-1982 to $107 million level in FY 1983 and decrease to $56 million in FY 1984. Because FY 1983 Section 205(j) grants have not yet been awarded, actual expenditures against those grants will occur in FY 1983, 1984 and possibly 1985. This will result in a leveling out of expenditures by States for traditional Section 106 activities in FY 1983 and 1984 to a level of between $73 and 78 million.

In addition, States will have in FY 1984 approximately $207 million in Section 205(g) funds. Since States have been encouraged to reserve up to three years 205(g) funds to complete the the construction grants program, a maximum of $25 million of this reserve (in eleven States with more than three years reserve) could be used in FY 1984 for 106 activities.

In order to evaluate the procedures for conducting use attainability analyses and deriving site specific criteria, EPA conducted nineteen site specific criteria case studies (see Figure 1) and nine use attainability studies (see Figure 2). These case studies were jointly developed between EPA and the State water quality agencies. Based on their experience with the EPA procedures for deriving site specific criteria, the WQS Subcommittee of Iowa's Department of Environmental Quality proposed that criteria modification should be adopted as a normal part of the States water quality standards review and revision process.

An important feature of EPA's use attainability and criteria modification procedures is the transferability of data and information. Once a State has conducted such analyses on their priority streams, the resulting information can be applied to other streams with similar physical and chemical characteristics. EPA's guidance proposes that States "group" water bodies with similar characteristics to facilitate more cost effective use of data. As States gain experience in generating data and in transferring data to other water bodies, the cost of doing the analyses will be reduced dramatically.

1/These include all section 106 and 205(j) obligations as well as expected section 205(g) obligations except those for construction grant management activities.

Finally, the use and application of the use attainability and criteria modification procedures are at the discretion of the States. In accordance with the 1981 amendments to the Title II Construction Grant Program, States must identify and review their standards for stream segments that may require treatment greater than secondary treatment. For such standards reviews, States may use the criteria modification and use attainability analyses. Whenever appropriate, EPA will provide technical assistance and support for such analyses.

A costing study has been conducted by EPA with three States to determine the resource needs of initiatives dealing with conducting use attainability studies and developing site-specific criteria. For use attainability studies on simple segments the average range of costs is $4,200-$7,400 depending on the amount of available scientific data base. For use attainability studies on complex segments the range of costs is $5,760-$9,800 depending on the adequacy of the scientific data base. The resource implication of site-specific criteria modification is dependent on the number of water quality parameters evaluated. For a one chemical constituent, the criteria modification average cost is $18,275 which includes conducting acute bioassays. For two constituents the average cost would be $37,100.

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Figure 1: Site-Specific Criteria Development
(Field Testing)

Region	State	Site	Source	Pollutants	Acute Toxicity Water Effect Ratio
I	Connecticut	Norwalk River	wire manufacturer	Pb,Zn	Zinc=1.8 Lead=4.1
II	New Jersey	Walkill River	metal finisher	Ni, Cr	Chromium=1.1 Nickel=0.9
III	Maryland	Piney Run	POTW	Ammonia, Chlorine	Ammonia=1.3 Chlorine=1.4
IV	North Carolina	Mulberry Creek	mirror finishing	Cu	Copper=2.5
IV	Georgia	Suwannee Creek	tannery	Ammonia	Ammonia=2.1
V	Michigan	Flint River	POTW	Ammonia,Cd,Cu	Cadmium 1.0 - Copper 1.0
	Minnesota	Crow River	POTW	Cyanide,Cn	Study in progress
VI	Texas	Leon River	POTW	Metals, DDT	Cadmium 4.9 - Chromium 2.8
	Louisiana	Selzer Creek	battery processing plant	Pb	Study in progress
	Oklahoma	Mingo Creek	airplane parts manufacturer	Zn,Cr,Cyanide	Study in progress
		Skeleton Creek	Oil refinery, POTW, Fertilizer manufacturer	Zn,Cr	Study in progress
VII	Iowa	Marshaltown	POTW	Ammonia	Ammonia 0.25 (winter study)
		Mill Creek	Machine tools manufacturer	Cyanide	Cyanide=1.0
	Nebraska	Salt Creek	suspected POTW	Lindane	Study in progress
VIII	Montana	Prickley Pear Creek	mine drainage	Cu,Zn	Copper 1.2 - Zinc 1.2
		Silver Bow Creek	mine drainage	Cu,Zn	Copper 1.2 - Zinc 1.2
IX	California	North Coast Region	silvaculture	2,4D ester	Study in progress
X	Washington	Spokane River	mining, smelters	Zn	Study in progress
ORD	Minnesota	St. Louis River		Cadmium	Cadmium 3.8

Figure 2: WATER BODY SURVEYS AND ASSESSMENTS GUIDANCE CASE STUDIES

REGION	SITE	PURPOSE OF STUDY	INITIAL SITE VISIT	WORKPLAN COMPLETE	FIELD WORK	STATE ASSESSMENT AND REPORT	FINAL REPORT TO EPA	COMMENTS
Region I	Assabet River, Massachusetts	Site calls for full fishery with a D.O. of 5; however, a lower level of aquatic protection seems more appropriate.	5/12-13	5/20	No field work	9/15	10/4	Completed.
Region II	Cuckels Brook, New Jersey	Effects of 1 municipal discharger and 1 industry on aquatic protection use	5/6-7	not applicable	Field work end of August	12/15	2/15	Completed.
Region III	Blackwater River, Franklin, VA	Comparison of least disturbed control to sites with one secondary treatment plant and one paper-pulp industry to evaluate potential aquatic use	4/20	4/26/82	early June and mid-Aug.	10/14	10/30	Completed.
Region IV	Deep Creek, North Carolina	Appropriateness of D.O. limits and AWT for Scotland Neck Plant	6/1-2	6/11	Completed by 7/15	8/16	10/15	Completed.
Region V	South Fork of Crow River, Minn.	Classified as warm water fishery; suspected limited warm water fishery	6/14-15	6/19	no field work	9/30	10/15	Completed.
Region VI	Pecan Bayou, Brownwood, Texas	Water body misclassified due to hydrological/low flow problem due to inadequate dam release	5/6-7	5/14	no field work	7/15	10/15	Completed.
Region VII	Salt Creek, Lincoln, Nebraska	Classified limited warmwater fishery; suspected full warmwater	5/3-6	5/12	no field work	6/31 to Regional Office	7/5	Completed.
Region VIII	South Platte River Colorado	Applicability of guidance document	5/4-5	5/14	no field work	July	10/14	Completed.
Region IX	---	----------	---	---	-----	---	---	Region [illegible] not recommend any sit[illegible] or this project
Region X	Malheur River Oregon	Stream classified as salmonid and non salmonid; State feels that it can only be a warm water fishery	4/26-29	not applicable	no field work necessary	8/15	early October	Completed.

2. THERE HAS BEEN CONCERN THAT INDUSTRIES MAY "SHOP" FOR POLLUTION HAVENS IF WATER QUALITY STANDARDS ARE PERMITTED TO VARY TOO MUCH. WOULD YOU DISCUSS HOW NEW SOURCE PERFORMANCE STANDARDS FIT IN AND IF THEY MAY PRECLUDE THIS? ALSO, WOULD YOU PROVIDE FOR THE RECORD HOW NEW SOURCE PERFORMANCE STANDARDS COMPARE SPECIFICALLY WITH BPT, BCT, AND BAT REQUIREMENTS?

A. There are two degrees of regulatory requirements included in the Clean Water Act (CWA). Congress designed a partnership between EPA and the states in carrying out the requirements within the CWA by having EPA develop a ' ensure a minimum level of treatment nationwide, and having the states responsible for establishing water quality standards and implementing the water quality based approach. The mechanism provided to enforce all pollution control standards is to require dischargers to obtain a permit.

The technology based standards set uniform national requirements by specific industrial categories based upon explicit considerations of cost and available or demonstrated technology. These standards may vary from industry to industry and between municipal systems; however, they result in mass or concentration base limitations which in gross terms control, on a technology basis, greater than ninety percent of the pollutants. These technical requirements are embodied in federal regulations and further, they are incorporated into permits controlling the discharges from all direct dischargers. Where these technology based controls are inadequate to meet water quality standards, additional treatment of the pollutants, based upon explicit consideration of water quality, can be applied. Under the CWA (Section 303), states adopt water quality standards to define the uses to be made of water and the criteria to protect the uses. These standards are also intended to reflect specific local conditions and priorities such as site-specific physical, chemical, and biological characteristics of the receiving stream and to assure that the "use" is attained. The water quality based approach applies to the relatively few segments that will not meet water quality standards after installation of the technology based controls.

For most of the industries, existing dischargers must meet technology based control requirements for greater than ninety percent of their pollutant discharges regardless of location, while others must meet more stringent water quality limiting requirements. Many of the issued standards require existing dischargers to reduce the quantity of discharge (flow), thus significantly reducing the mass of pollutants when meeting the best available control technology (BAT) requirements. The New Source Performance Standards (NSPS) represent the best demonstrated control technologies for each of the industries. In many cases the higher removals of pollutants in NSPS over BAT result from the ability of new plants to effect greater efficiencies in water use, in addition to using more efficient process and pollution control equipment without retrofit problems.

Six of the eleven industrial categories for which NSPS standards were recently promulgated require more stringent controls than the discharge standards that have been established for existing plants, including, in some cases, zero discharge to surface waters. The remaining 5 categories have promulgated NSPS equal to BAT discharge standards where existing plant technologies have already been found to achieve the higher levels of pollution control that are normally associated with NSPS standards.

NSPS is applicable to any new source constructed after publication of the proposed standards. A new source is defined as a new plant construction (a greenfield plant) or major changes in processes, pollutants, or volumes of waste flow at an existing facility using certain criteria to determine if the modification constitutes enough of a difference to be considered a new source.

With respect to concerns that industries may tend to "shop" for pollution havens where water quality standards vary, we believe that it will be unlikely for the following reasons:

° all new plants and most major modifications at existing facilities would have to comply with national NSPS standards -- these NSPS discharge standards may be as stringent or more stringent than what water quality standards would require;

° the decision to relocate may be more costly in meeting NSPS discharge standards (i.e., due to labor costs, taxes, transportation costs, occupational skills training, etc.) compared to the cost required for upgrading the equipment at an existing plant in order to meet the water quality standards;

° all existing plants must be achieving BAT/BCT discharge standards by 1984/85 no matter where the plant is located or exists; if water quality standards require stricter control, and the industry wants to move, it must compare the cost of meeting national NSPS standards with either the BAT/BCT and/or the water quality standards; and

° for cases where BAT or BCT = NSPS, the industry would have to consider the balance of the incremental cost of installing new equipment to meet stricter water quality standards over the total impact and cost of moving.

3. HOW AND WHY DID EPA COME UP WITH THE "PRESUMPTIVE APPLICABILITY" TEST AT THE TIME IT WAS DEVELOPED? WHAT MAKES IT LESS APPROPRIATE TODAY?

A. On January 16, 1978, the Director of the Criteria and Standards Division announced the presumptive applicability policy in a memo to all regional offices. On July 10, 1978, in the Advance Notice on Proposed Rulemaking on water quality standards, EPA included a description of the policy of presumptive applicability and the supporting rationale. No public comment nor State input was sought. The policy was simply initiated by the Agency. On November 28, 1980 (45 FR 79318), EPA rescinded that policy "... because it has proven to be too inflexible in actual practice."

EPA developed the policy to provide guidance on two issues: (1) the use of the Agency's Quality Criteria for Water (Red Book) in water quality standards and (2) the nature of the criteria to be promulgated when a State water quality standard is disapproved. However, EPA never provided the necessary supporting guidance to the States and the Agency rarely acceded to a State's request to develop a criterion different from the Agency's recommendation.

The proposed policy of site-specific criteria development provides both policy and technical guidance to the States as well as providing the States a clear option to either use EPA's national recommendations or develop alternative criteria.

EPA develops national criteria recommendations as guidance to the States under Section 304(a)(1) of the Clean Water Act. Under Section 304(a)(1), these water quality criteria are based solely on data and scientific judgements on the relationship between pollutant concentrations and environmental and human health effects. Criteria values do not reflect considerations of economic or technological feasibility.

The Section 304(a) laboratory-derived criteria may not accurately reflect the toxicity of a pollutant because of the effect of local water quality characteristics or varying sensitivities of local aquatic communities. In other cases, adaptive processes may enable a viable, balanced aquatic community to exist in water with high natural background levels of certain pollutants. Similarly, certain compounds may be more or less toxic in some waters because of differences in temperature, hardness, and other parameters. Developing site-specific criteria is a method of taking local conditions into account. This determination ensures that criteria will be adequate to protect the designated use and that they will not be more stringent than needed.

There are water bodies that support the designated uses even though the Section 304(a) numerical criteria included in the State's standard are exceeded. EPA believes that if, after surveying the water body, States determine that the water conditions are acceptable for the use even though the criteria exceeded, States should be able to modify the criteria.

We are able today to provide States with scientific procedures to develop site-specific criteria - this knowledge simply was not available when the presumptive applicability policy was announced.

4. REGARDING "PRESUMPTIVE APPLICABILITY", I AM AWARE THAT NEW JERSEY IS IN FAVOR OF RETAINING IT. WHAT IS THE POSITION OF OTHER STATES AND THE ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS REGARDING PRESUMPTIVE APPLICABILITY? HOW MANY BELIEVE IT HAS OUTLIVED ITS USEFULNESS?

A. New Jersey and Maine are the only two States who support retaining the presumptive applicability policy, however, both States also support the concept of site-specific criteria development.

Other States expressed a number of concerns with the policy proposal allowing the development of site-specific criteria, but even though offering criticisms, concerns, and technical comments on the concept, they stopped short of advocating a return to the presumptive applicability policy.

5. ON PAGE 10 OF YOUR STATEMENT, YOU MENTION THAT ALL 57 STATES AND THE JURISDICTIONS HAVE APPROVED WATER QUALITY STANDARDS, FOR THE RECORD, WOULD YOU PLEASE PROVIDE THE COMMITTEE WITH A COMPLETE STATE-BY-STATE BREAKDOWN OF THOSE WATER QUALITY STANDARDS THAT ARE CURRENTLY IN EFFECT?

A. Each of the 57 jurisdictions included in the national water quality standards program adopts standards by following their own administrative and legal procedures. Therefore, all States present their standards in different formats. We have available for public review in our offices all approved State water quality standards. The committee or committee staff is welcome to review those documents. My staff will assist in any way possible.

In 1980 we compiled a series of reports on the various standards adopted by the States. [redacted]. Of course, there have been various types of revisions to State standards since that time. For example, New Mexico made several changes in the use classifications assigned to the Rio San Jose, New Jersey amended its antidegradation policy and Indiana revised several water quality criteria affecting the Grand Calumet.

6. ON PAGE 7 OF YOUR STATEMENT, THE FOLLOWING CLAIM IS MADE:

"THE WATER QUALITY BASED APPROACH APPLIES TO THE RELATIVELY FEW SEGMENTS THAT WILL NOT MEET WATER QUALITY STANDARDS AFTER INSTALLATION OF THE TECHNOLOGY BASED CONTROLS"

WOULD YOU INDICATE TO THE SUBCOMMITTEE HOW MANY OF THESE SEGMENTS WE MAY BE TALKING ABOUT? WHAT PERCENTAGE OF THE TOTAL IS THIS? WHERE ARE THESE WATER QUALITY LIMITED SEGMENTS, BY STATE AND LOCATION WITHIN EACH STATE?

A. Preliminary EPA staff estimates indicate that 10 percent or less of the waters in the U.S. fall into this category; however, it is difficult to give an exact estimate of the number of water quality limited segments. Part of the reason for this difficulty is that, although States generally completed lists of such waters in their earlier water quality management plans, they were done at a time when much less was known about toxic pollutants. Furthermore, the definitions of some technology-based controls such as BAT are just now becoming available and the lists are generally undergoing continual revision.

In addition to our preliminary estimates, 20 States, in their 1982 305(b) reports, provided estimates of the waters presently meeting the fishable, swimmable goal of the Clean Water Act. These estimates from the States range from a low of 66 percent of Rhode Island's 329 assessed stream miles to a high of 97 percent of New Hampshire's 14,500 stream miles. While it should be noted that no precise national conclusions about the percent of waters meeting the 1983 goal can be drawn because of varying methods of assessing goal attainment, these estimates do indicate that a majority of the Nation's waters already meet the 1983 goal. Hence, a relatively small proportion will require additional water quality-based controls after technology controls are in place.

7. HOW DO BEST MANAGEMENT PRACTICES TO CONTROL NONPOINT SOURCES OF POLLUTION RELATE TO THE WATER QUALITY STANDARDS SETTING PROCESS?

A. The Nationwide Urban Runoff Program (NURP) is in the process of writing its final report. Our general conclusion that is emerging is that impacts, or actual impairment to use, is a function of duration and frequency of the pollution event. The duration of the runoff, or pollution event, is critical. Less than 90 percent of events in this country last less than 16 hours. Half of all events last less than 6 hours. Study results indicate that fish can tolerate higher concentrations of pollutants for short periods of time. Not only are the durations short, but occur frequently. On an annual basis it rains less than 8 percent of the time.

One of the products of the NURP program is a screening methodology which uses those 2 factors, duration and frequency, to predict effects on use and the result of the use of controls. States will be able to use this screening methodology to make initial determinations as to whether or not nonpoint sources, hydrologically related pollution events, are significant factors with respect to attaining standards and if so, necessitate further site-specific studies to determine the extent of degradation and appropriate control.

One of the basic provisions of our proposal is that States may not modify or reclassify a designated use if the "use will be attained by implementing cost-effective and reasonable best management practices for nonpoint source controls."

Information generated by a State relating to the impact of BMP's in meeting water quality standards may be used in a number of different ways. The data may be used to demonstrate that the adopted standards are appropriate as are the prescribed BMP's. The data may also show that either the standards are unattainable for the water body or the BMP's are not appropriate, in which case, either may be changed. Our proposal, however, does not force States to adopt mandatory nonpoint source controls in place of voluntary arrangements.

8. DO YOU HAVE ANY INFORMATION ON THE NUMBER OF STATES THAT WERE FORCED TO DEVELOP STANDARDS WITH INSUFFICIENT DATA AND ANALYSIS?

A. In 1972, the law expanded the coverage of water quality standards to include intrastate as well as interstate waters. The States had only 180 days to adopt intrastate standards and submit them to EPA for review and approval. Given the short time frame involved, and the limited availability of water quality data existing at that time, States generally adopted "fishable/swimmable" standards with little or no consideration of the feasibility of a water body to support such standards. Since that time, States have been reviewing their standards and making revisions including changes in both criteria and use designations.

9. EVEN THOUGH EPA FORMALLY RESCINDED THE POLICY OF PRESUMPTIVE APPLICABILITY IN NOVEMBER, 1980, ASIWPCA HAS STATED THAT THE POLICY HAS BECOME INSTITUTIONALIZED IN THE EPA REGIONS, IS STILL APPLIED, AND SHOULD BE CLARIFIED AS IN EPA'S PROPOSED REGULATIONS. WOULD YOU AGREE WITH THIS ASSESSMENT?

A. The presumptive applicability policy was rescinded in November 1980. However, the requirement still exists for States to adopt criteria appropriate to protect designated uses. Such criteria must be based on sound scientific analysis, and are subject to EPA review and approval after formal adoption by the State. The problem lies in EPA providing adequate scientific and technical guidance to a State that establishes acceptable means for a State to develop criteria on a site-specific basis without precluding the use of existing or innovative State techniques which may be equally as scientifically and technically acceptable as EPA's guidance. The guidance and regulation also must recognize that a State may choose to adopt EPA's national recommendations or to develop and adopt alternative criteria. We believe our proposed guidance and regulation do recognize these issues and is sufficiently detailed yet flexible enough for the State's use. One element of presumptive applicability will always survive - any criteria designed to protect a specifc use must be developed on a sound scientific basis.

10. DO YOU HAVE ANY INFORMATION ON THE NUMBER OF STATES THAT HAVE DIFFICULTY WITH REVIEWING ALL THEIR STANDARDS ON A THREE YEAR CYCLE? HOW DETAILED ARE THESE THREE YEAR REVIEWS?

A. If the question means an in-depth analyses of all their standards, virtually no State has claimed they can do that within 3 years. There is no single answer to how detailed current 3-year reviews are. The level of detail varies greatly given the number of States, the difference in administration of the program, and the priority assigned in a State. The concept of reviewing the standards in detail on priority water bodies is supported widely by the States. Periodically, a State will undertake a major revamping of their standards, a process which took Colorado eight years to complete.

11. YOU NOTED THE INVOLVEMENT OF ASIWPCA IN THE PROPOSED REGULATIONS STARTING ON OCTOBER 1980. DIDN'T THE WORK ON THIS RULEMAKING ACTUALLY BEGIN IN JULY, 1978? COULD YOU BRIEFLY OUTLINE THE MAJOR STEPS IN THE PROCESS OF ISSUING PROPOSED REGULATIONS?

A. On July 10, 1978, the Agency published an Advance Notice of Proposed Rulemaking for public comment. The Agency then analyzed the public comments and in 1979 and 1980 began developing a series of issue/option papers on major policy initiatives and a draft strategy for the future course of the water quality standards program. The availability of this material was announced to the public in the Federal Register (45 F.R. 77780, November 24, 1980).

Starting in October 1980 we worked closely with the ASIWPCA Subcommittee on Water Quality Standards in developing several drafts of the proposal which was eventually published in October 1982. These various drafts were also widely distributed to the States and others. In that two year period, we actively sought opportunities to discuss our ideas with environmental, business, and industry groups.

After publication, of course, we had 11 public meetings with over 900 attendees and have received over 1,400 written comments.

12. YOU NOTE THAT THE IMPLEMENTATION OF TECHNOLOGY BASED CONTROLS HAS, "IMPROVED THE QUALITY OF MANY OF THE NATION"S RIVERS AND STREAMS." ARE THESE IMPROVEMENTS REFLECTED IN CURRENTLY DESIGNATED USES OR PRESENT WATER QUALITY STANDARDS? IF NOT, DO YOUR PROPOSED REGULATIONS PROVIDE GUIDANCE TO THE STATES FOR ADDING USES OR UPGRADING WATER QUALITY STANDARDS?

A. In many cases technology-based controls has resulted in meeting established water quality standards, thus no State action relative to their standards is needed. States are continually reviewing and revising their water quality standards to reflect both the latest scientific knowledge available as to the effects of various pollutants and to reflect water quality improvements. We believe our proposed regulation and the accompanying supporting guidance does provide sufficient guidance and direction to the States to add or upgrade water quality standards. The policies with respect to use attainability analysis, site-specific criteria development, and benefit-cost assessments, provide adequate information to support either an upgrading or downgrading decision. As the State of California noted in their official comments, they support the concept of a uniform test for making standards more or less stringent.

13. DOESN'T YOUR "BENEFIT-COST ASSESSMENT" REALLY AMOUNT TO AN ECONOMIC REASONABLENESS STANDARD SIMILAR TO, BUT MORE FLEXIBLE THAN, THAT EMBODIED IN THE CURRENT REGULATIONS AND DESCRIBED IN SECTION 302(B) OF THE ACT?

A. Yes. We believe that the current economic test is unworkable and perhaps unrealistic. We are looking for an alternative, preferably one that was used elsewhere in the Act. Although used in a different context, Section 302 does require balancing of economic and social costs and economic and social benefits.

The controversy over the inclusion of a benefit-cost assessment in our proposed regulation centered primarily on three issues, namely: (1) that a cost-benefit ratio would be the basis of a standards decision, (2) that a benefit-cost assessment is a requirement in adopting a revising standards, and (3) that we were proposing a typical water resource project classical type analyses. None of these are what we had in mind.

We envision a structured though common sense type process that provides State decision makers and the public with information on impacts - the environmental and economic gains and the costs of the standards decision. We see this analyses as an option available to the States and flexible enough to cover a variety of situations.

There are alternative ways of describing these economic impacts. Perhaps a test of economic reasonableness, as is currently in use in some States, may be more appropriate. Another possibility is an economic impact anaysis.

Mr. ROE. The committee will stand recessed to the call of the Chair. We will meet again this afternoon in joint committee at 2 o'clock.

[Whereupon, at 12:05 p.m., the subcommittee adjourned subject to the call of the Chair.]

ADDITION TO THE RECORD

Statement of
The Minnesota Pollution Control Agency
1935 West County Road B-2
Roseville, Minnesota 55113

Before the
Subcommittee On Water Resources
Committee On Public Works and Transportation
U. S. House Of Representatives

April 6, 1983

Mr. Chairman and members of the Subcommittee, I am Sandra Gardebring, Director for the Minnesota Pollution Control Agency. It is a pleasure to be here today. I appreciate the opportunity to relay to you Minnesota's position with regard to the U. S. Environmental Protection Agency's (EPA) proposed Water Quality Standards Regulation.

The Minnesota Pollution Control Agency (MPCA) was created in 1967 by the State Legislature. It consists of a nine-member citizen Board, whose members are appointed by the Governor, and an Executive Director, also appointed by the Governor, plus a staff of 325 people. The Agency Board is the decision-making body. The MPCA has been given broad authority by the Minnesota Legislature to control pollution and establish standards relative to water, air and solid and hazardous wastes. The MPCA administers the programs mandated by federal pollution laws such as the National Pollutant Discharge Elimination System (NPDES) permit program of the Clean Water Act.

It is no secret that Minnesota is blessed with abundant water resources of high quality. Our car license plates have for years proclaimed Minnesota to be the land of 10,000 lakes. In fact we have over 12,000 lakes 10 acres or larger. Minnesota is

also in the enviable position of being "upstream" of most of our neighboring states and provinces. Three major watersheds have their headwaters within our borders - the Mississippi, the St. Lawrence, and the Red-Rainy which drains to Hudson Bay. We have an obligation to our neighbors to protect the quality of the water leaving our state. In addition, we are the stewards for waters of national importance, such as the many lakes and rivers in the Boundary Waters Canoe Area and Voyageurs National Park, Lake Superior and the cascading rivers along its north shore, and the St. Croix River, a national scenic and recreational river.

Minnesota has a very high stake in its water resources and literally cannot afford to allow its waters to become polluted. Tourism, much of it water oriented, is a two billion dollar plus industry in Minnesota. Tourism is our third largest employer and it generates over 150 million dollars in revenue for the state each year. Thus, the MPCA has taken an active interest in EPA's proposed Water Quality Standards Regulation. The MPCA has submitted written comments to EPA Office of Water Regulations and Standards in the form of three letters which are attached to this statement.

I would like to start by stating our general reaction to the proposed Regulation and follow that with some specific comments and examples of how we anticipate the Regulation will impact our water quality programs.

In the final analysis the MPCA opposes the proposed Regulation because it will not improve our ability to conduct our

water quality programs and, to the contrary, it could be a hindrance.

1. It could place impossible burdens on the human and monetary resources of the MPCA.

2. It appears to offer states greater flexibility but, in reality, it may be more restrictive than the current Regulation.

3. It has the potential to promote water quality standards "shopping" by industries looking for the best deal in the current atmosphere of intense competition between states for jobs and business.

4. It relys heavily on benefit-cost analyses, an area that should be left entirely to the discretion of the states; and,

5. Most importantly, it is a Regulation that appears to reflect a philosophy of opposition to real environmental protection.

I will now expand on some of these points.

First of all, the issue of increased demands on state resources.

The use attainability surveys, criteria modification bioassays, and benefit-cost analyses suggested by the proposed Regulation are typically very labor intensive and costly activities. If such surveys and studies are going to be useful, they will have to be of sufficient detail and duration to add new

information to what is intuitively known, or what can be surmised from regional data. Cursory studies are not likely to help decision makers and may be misleading.

While the site specific studies themselves can add a substantial burden to state resources, it is the site by site rule making process EPA suggests should follow these studies that is of much greater concern to the MPCA. In Minnesota the administrative rule making process requires at least a year to develop new water quality standards. If site specific standards had to be promulgated for even a few of the communities in the construction grants program, long delays would be encountered in moving communities through the program. The possibility of losing grant funds becomes very real.

The EPA response to the resource issue is to have states concentrate their efforts on only their priority waters. Minnesota, out of necessity, has always concentrated its resources on priority waters. I doubt that Minnesota is unique among the states in this regard. For EPA to suggest to us now that we can absorb the additional burden of extra site specific studies <u>and</u> site specific rule making by prioritizing our waters is naive at best.

It is the position of the MPCA that site specific modifications, when warranted, can be accomplished through the NPDES permit process within the framework of state-wide water quality standards without the need for site specific rule making. In fact, we have used this process successfully in Minnesota. In several situations involving water quality limited discharges

(i.e., where effluent limitations are controlled by downstream water quality standards as opposed to an effluent limited discharge where minimum technology such as secondary treatment defines the limitations), site specific criteria have been developed for the receiving waters under the authority of our current state-wide water quality rules. The modified criteria then became the basis for the limitations incorporated into the NPDES permit. The required 30-day public notice period for permits provides an opportunity for public input into the process. Thus, the MPCA feels that the permit process is the most cost effective and expeditious way to accommodate legitimate site specific concerns and factors which can alter local water quality criteria and, subsequently, the effluent limitations.

In a practical sense, some aspects of the proposed Regulation are already required of states as part of the justification of advanced waste treatment (AT) projects. Site specific surveys are needed to justify the funding of advanced treatment facilities. When AT studies are done, the same studies also should meet the requirements of the Water Quality Standards Regulation. States cannot afford to conduct duplicate studies to satisfy slightly differing requirements of these two complementary programs. The MPCA would like to see better coordination and cooperation between the AT review and Criteria and Standards staffs at EPA.

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To summarize MPCA's position with regard to the potential for extra burdens on state resources, we feel that this would be greatly reduced if:

1. The site specific modifications are accomplished through the NPDES permit process and not through site specific rulemaking, and
2. One set of site specific studies satisfies both the AT and Water Quality Standards Regulation requirements.

The second issue is the claim of greater flexibility.

The proposed Regulation purports to offer states greater flexibility in the management of their water quality programs. At the same time EPA retains the authority to approve or disapprove AT projects and water quality standards revisions. Presumably much of the flexibility will be exercised when states decide where site specific studies are needed and how detailed they should be. The proposed Regulation allows substantial latitude in the scope and type of study. It is left up to the states to anticipate the appropriate level of detail that will satisfy the EPA review process. The MPCA is concerned that real flexibility will be stifled because states will feel obligated to do studies where they are not needed, or do studies in greater detail than necessary to be sure they satisfy the undefined EPA requirements. There may be substantial pressure on states to over do or "pad" the studies in order to gain approval for their AT projects and standards revisions.

Real or not, a potential byproduct of the touted flexibility may be the use of water quality standards as bargaining chips by states in the intense competetion for jobs and businesses. This is most likely to occur in situations where effluents are limited by downstream water quality standards. A state could relax local water quality standards under the guise of site specific studies to the point where beneficial uses are no longer protected but where they would be attractive to a courted industry. We hope that this scenario does not come true, but the proposed Regulation appears to make it more likely.

Thirdly, I want to make a few comments on the major provisions in the proposed Regulation.

A. Use Attainability Surveys

The proposed Regulation implies that states can benefit from doing use attainability studies on all waters. The uses of many of Minnesota's waters are not in question - fishing and recreational uses are being achieved. No use attainability survey is needed on these waters. The question that should be emphasized is to what degree is the point source discharger limiting downstream uses.

A demonstration use attainability survey, done by the MPCA at EPA's invitation, illustrates these points. The survey was on the South Fork of the Crow River, a stream in south-central Minnesota draining an agricultural watershed. This river is presently classified for use as a warmwater fishery. The purpose of the study was to determine if this was the appropriate use classification for the river. Only

available fisheries, water quality, and physical data were used in the assessment. No additional data were collected. After reviewing these data and writing the report, a process that took about four man-months, it was concluded that the warmwater fisheries classification was indeed correct. The important point here is that this was known before the study began. The basic conclusions of the study, that the present classification was correct and that the water quality was impaired below the discharger, was known to the MPCA staff before the study started. While the report contains various fisheries and water quality indicies and comparisons of the South Fork to the North Fork of the Crow River, all of which are on interest, the study added essentially nothing beyond what was already known concerning the use classification and the need to upgrade the point source discharger. The MCPA feels that such studies are justified only where beneficial uses are truely in doubt or where there is a need to carefully document the impact of a discharger on downstream uses.

B. Site Specific Criteria Modification

The MPCA recognizes that a water quality criterion or standard valid for one set of conditions may not be valid for another. As previously stated, the MPCA has used criteria modification techniques to develop effluent limitations in several water quality limited situations. But this was accomplished through the NPDES permit process and did not require site specific rulemaking.

C. Benefit-Cost Analyses

The MPCA feels that the need for economic analyses should be left to the discretion of the states. The proposed Regulation is very vague about what projects will require a benefit-cost analysis. In the absence of such guidance, states are very likely to feel obligated to do some sort of benefit-cost study on all projects or face the loss of federal grant funds for their projects. In an apparent effort to soften the impact on state resources, the EPA guidance suggests that the smaller projects may need only a simplified descriptive study. However, the MPCA feels that the EPA is misguided in believing such studies will contribute valuable information to those who must decide the fate of AT projects. The tools are available to do meaningful economic studies but the required data are seldom available. The acquisition of such data is expensive and its interpretation requires staff trained in applied economics. Thus, economic studies that will add information of real value are only feasible for the largest and most expensive projects.

We have been told by David Sabock of EPA's Criteria Branch, Office of Water Regulations and Standards, that this part of the proposed Regulation and guidance document will undergo extensive revision. Therefore, I will not comment further on the original version here.

For the record, our full comments are contained in the letter dated January 17, 1983 attached to this statement.

D. Antidegradation

The MPCA completely rejects the proposed antidegradation policy. The suggested approach provides no more protection to outstanding waters than is provided by the enforcement of water quality standards, and it is, therefore, superfluous. An antidegradation policy should provide extra protection to waters recognized for their very special or unique qualities. To allow the degradation of high quality waters down to the level of water quality standards, as the proposed policy would do, is likely to destroy the very character that makes these waters unique. We have been informed that the comments received by EPA on the antidegradation proposal were overwhelmingly negative, and that EPA will replace it with a much stronger version - one similar to the antidegradation statement in the current Regulation. The MPCA welcomes this change.

In conclusion, it is the position of the Minnesota Pollution Control Agency that:

1. A new Regulation is not necessary to accomplish site specific modifications to water quality standards and to accommodate economic concerns, but if there is to be a new Regulation;

2. It should allow site specific modifications to be accomplished through the NPDES permit process,

3. It should accept a single set of site specific studies for both the advanced treatment and water quality standards requirements,

4. It should not require use attainability surveys on rivers and streams whose beneficial uses are not in doubt.

5. It should include a much stronger antidegradation statement and encourage states to identify their very high quality waters; and

6. EPA should reassess the value of descriptive benefit-cost analyses, and they should greatly clearify their expectations of states in the whole area of economic analysis.

Mr. Chairman, this completes my statement. I would be happy to answer any questions that you or members of the Subcommittee have.

Minnesota Pollution Control Agency

FEB 08 1983

Mr. David K. Sabock, Chief
Criteria Branch
Office of Water Regulations and Standards
United States Environmental Protection Agency
401 N. Street SW
Washington, D.C. 20460

Dear Mr. Sabock:

The Minnesota Pollution Control Agency (MPCA) is submitting its final comments on the proposed Water Quality Standards Regulation (40 CFR Parts 120 and 35) noticed in the October 29, 1982 Federal Register. The MPCA believes that the regulation, as currently proposed, is fundamentally deficient in the following respects:

1. While offering the illusion of state flexibility, in reality it potentially could be far more restrictive than the existing regulation.

2. It runs the risk of setting state against state in the water quality standard development process.

3. It depends heavily on the tool of benefit-cost analysis, which is an aspect of the standards setting process properly left entirely to the discretion of the states.

4. It will require the inefficient and excessive use of limited state monetary and human resources.

5. Most importantly, it is a regulation which, at its core, appears to reflect a philosophy of opposition to real environmental protection.

Thus, the MPCA opposes the proposed regulation, but would find it more acceptable if changes were made which address the following specific concerns.

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1. Demand on State Resources

The work suggested for use attainability, site specific criteria modification and benefit-cost studies are labor intensive and can involve expensive surveys, bioassays, and other data gathering and analytical tasks. The U.S. Envionmental Protection Agency (USEPA) response that states should focus on a priority list of waters to minimize the impact on state resources is logical but does not solve the resource problem especially if site specific water quality standards are to be the end result of these studies. The rule making process in Minnesota takes at least a year to enact new standards. Minnesota has completed construction of many of its larger wastewater treatment plants, and now has on its construction grants priority list a large number of small projects. If a large number of these projects require the promulgation of site specific standards before effluent limitations can be finalized in the NPDES permit, significant administrative delays will be encountered. The subsequent loss of grant funds becomes a very real possibility. States should be allowed to adjust water quality standards and effluent limitations on a site specific basis as part of the NPDES permit process. The permit provides an opportunity for public input into the process. The MPCA has successfully used this approach in Minnesota within the framework of its state-wide standards.

The MPCA will continue to conduct use attainability surveys for Limited Resource Value Waters and do other site specific studies as required to justify advanced treatment (AT) projects. To make the most efficient use of the resources committed to these studies, the results should satisfy both the requirements of the proposed water quality standards regulation and the AT justification program. States can ill afford to duplicate their efforts to satisfy slightly differing requirements for these two programs.

2. Undefined Scope of Suggested Studies

The flexibility offered by the proposed regulation, although generally sought by the states, can have disadvantages. The use attainability, site specific criteria modification, and benefit-cost analysis offer a broad spectrum of optional approaches ranging from very cursory to very detailed and costly studies. The state is placed in the position of having to guess what level of effort is appropriate in each case. It will be too easy for the USEPA in their review of water quality standards and AT projects to conclude that more effort is required in some portion of the project. This may cause states to conduct more extensive studies than they feel necessary, at greater expense, to avoid these review process pitfalls.

A related concern is that the proposed regulation does not recognize that the beneficial uses being made of many waters are not in question. The implication is that states can profit from conducting use attainability

studies on all waters. In situations where fishing and recreational uses are obviously being attained, as is the case of many of Minnesota's rivers and streams, no use attainability study should be required or expected.

3. Complexity of Meaningful Studies

There is an underlying assumption in the proposed regulation that site specific studies - whether biological, physical, chemical, or economic - are always going to yield the correct site specific standards and effluent limitations so that treatment costs will not exceed what is needed to meet standards. There is a danger that the USEPA is expecting more from these studies than is realistic. For example, biological data often have very large confidence limits or margins for error. Even assuming surveys are conducted during a "normal" or representative year, sampling errors can result in effluent limitations that are still too stringent or too lenient. The need for seasonal limitations only compounds the problem. Also, the accurate definition of significantly different standards for streams of similar characteristics in similar watersheds is very unlikely. The results of surveys on one stream should be transferrable to similar streams.

4. Antidegradation

The antidegradation policy proposed by the USEPA (section 131.10 (C)) and described as option 1 is not an antidegradation policy at all in the opinion of the MPCA. By placing the emphasis on use, the proposed antidegradation provision confers no more protection to high quality waters than is already provided by the maintenance of water quality standards. This level of protection is already provided in the proposed section 131.10(j)(1). The concept of antidegradation implies the judicious application of extra protection to very high quality waters or waters of a special or unique quality such that their quality will not be significantly altered. For many high quality waters a large part of their attraction as a recreational resource is their pristine quality. Furthermore, waters specifically identified because of their special or unique qualities, such as very clear headwater lakes, might lose all their attraction if allowed to be "degraded" to the level of the standards. Antidegradation policies should be applied sparingly and preferably to specifically identified waters. Thus the MPCA not only endorses the adoption of antidegradation option 2, but urges the USEPA to encourage states to designate outstanding state waters which will receive antidegradation protection.

In summary the proposed regulation is unlikely to improve the MPCA's water quality programs since the MPCA is applying site specific concepts to its water quality standards and effluent limitation programs already. On the contrary, the regulation in its present form could be a hindrance to existing pollution control efforts. The MPCA urges the USEPA to make changes in the regulation to reflect the following specific recommendations:

1. The promulgation of site specific standards through rule making should not be required to implement the results of site specific studies. States should be able to accomplish site specific alterations in the water quality standards and effluent limitations through their permitting processes within the framework of state-wide standards.

2. Site specific studies should satisfy the needs of both the water quality standards program and AT justifications.

3. No use attainability study should be required for waters where fisheries and recreational uses are obviously being achieved.

4. The USEPA should adopt the antidegradation policy in option 2 with the addition of a statement encouraging states to identify their very high quality waters.

5. It is important for the USEPA to recognize that the benefit-cost analyses and biological surveys usually require detailed studies before meaningful information is attained. Conversely, cursory studies will add little or nothing to what is intuitively known, and may be misleading.

Sincerely,

Sandra S. Gardebring
Executive Director

SSG/nmp

cc: Robbi Savage, ASIWPCA
Frederic A. Eidsness, Jr. USEPA
Valdas V. Adamkus, USEPA

Minnesota Pollution Control Agency

January 17, 1983

Mr. David K. Sabock, Chief
Criteria Branch
Office of Water Regulations and Standards
United States Environmental Protection Agency
401 M. Street SW
Washington, D.C. 20460

Dear Mr. Sabock:

The Minnesota Pollution Control Agency (MPCA) has commented in the past on proposed changes to the Water Quality Standards Regulation (40 CFR Parts 120 and 35), and accompanying guidances. However, because the cost-benefit guidance has only recently become available for review, comments regarding this aspect of the proposed rule change have not been submitted. We wish to comment specifically on the benefit-cost assessment guidance, now published as Chapter 4 of United States Environmental Protection Agency (USEPA), Office of Water Regulation and Standards, Water Quality Standards Handbook, Draft, October, 1982, and its application, at this time.

The first comment to be made is that the guidance lacks clarity. The proposed rule states that "if feasible [water pollution] controls are available, a benefit-cost assessment may be made to determine if it is worth requiring more stringent effluent limitations than those in Section 301(b)(1) and (2) of the Act." (Federal Register, Vol. 47, No. 210, Friday, October 29, 1982, p. 49244.) Such analyses are optional. However, there is an overriding concern on the part of states that federal funds may be withheld for combined sewer overflow (CSO) and advanced treatment (AT) projects until a benefit-cost assessment is completed. States, for the most part, do not have economic programs or staff in place to do such assessments. There is little or no existing data to utilize. For the purpose of planning, it is crucial for states to clearly understand the expectations of EPA with regard to

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the number of cost-benefit assessments to be performed and their level of detail. It was the expectation of the State of Minnesota that the guidance would provide that information. This guidance, however, does not.

The guidance considers the right questions; however, the answers are most often vague or describe a full range of possibilities. The guidance seems to state that a benefit-cost assessment is appropriate in almost any situation and the level of detail can range from very simple to very complex. The guidance suggests that each assessment should be tailored to the particular site and submitted to EPA for review. This "wait and see" policy makes it impossible for states to plan how they can address their water quality problems in a timely manner.

The second comment to be made is that this state finds EPA to be misguided in its belief that a benefit-cost assessment will necessarily contribute additional valuable information to decisions regarding AT or CSO projects. While cost-benefit analyses can provide useful information to decision-makers, it is only under the most stringent conditions that this is true. Otherwise, the analyses are at best redundant, and at worst, entirely misleading.

Applied economics has developed the capability of estimating, within a reasonable degree of accuracy, the impacts of water quality improvements. An analysis of this nature regards costs as opportunity costs, estimates benefits as surpluses measured by areas under appropriate demand curves, and evaluates welfare implications by changes in the distribution of income. Such a study is useful to decision-makers beyond that which is intuitively clear to individuals familiar with the project.

Given perhaps $40,000 and a year's time, an economist schooled in applied economics could collect the necessary data and perform an analysis of the economic impacts of water quality improvements at a single site. (The above cost estimate does not include the economist's salary.) Minnesota has between six and sixteen projects possibly requiring AT reviews on their 1983 fiscal year project list. It is clear that Minnesota does not have the resources to perform an analysis of the nature described above for each of these AT reviews.

The guidance states that not all projects require an extensive benefit-cost analysis such as that described above. However, it is these less rigorous types of analyses which are fraught

with pitfalls. The guidance states in "simple, clear-cut" cases, the analysis may be descriptive (Chapter 4, table 4-1, Water Quality Standards Handbook, Draft, October, 1982). In these situations, cost-benefit assessments will itemize the costs of the project in dollar terms and itemize the benefits in terms of "visitor days, miles of pristine shoreline, increased clarity". Such descriptive analysis cannot improve decisions because it does not provide additional information. Information of this nature is known to the regulator; it is contained in current AT reviews and is discussed in public hearings. A descriptive benefit-cost assessment in such cases is at best redundant. It is a needless expense to states.

Descriptive cost-benefit assessments can be misleading. For example, several years ago, Minnesota farmers embarked upon a vigorous program of draining wetlands for agricultural production. The incremental costs of the program - construction costs, plus the loss of a few acres of waterfowl habitat, appeared negligible compared to the benefits of a farmer's lifetime of increased production. It is now known that vast acres of a unique irreplaceable resource, which provided wildlife habitat, ground water recharge, and water pollution control, were lost. The increased agricultural production in some periods did not benefit the individual farmer because increased production lead to reduced prices. However, benefits may have accrued to consumers of agricultural products. In other periods, subsidies have been paid to farmers to support prices or keep land out of production, thereby increasing the cost of government.

In the example above, it is doubtful that the numerous secondary effects of the program would have been considered significant - if they had been detected at all - in a qualitative study. While it is difficult to state the outcome of a more rigorous economic analysis, it is quite likely to have measured grain price effects and the value of the loss of recreational benefits. One such study, which monetized the benefits of wetlands with respect to waterfowl habitat, concluded that the benefits were of a magnitude to indicate that existing permanent wetlands should not be drained for agricultural use (Hammack, Judd and Gardner Mallard Brown, Jr., Waterfowl and Wetlands: Toward Bioeconomic Analysis, Resources for the Future, Inc., Baltimore and London, 1974, p.87). The point to be made is that we are skeptical that a descriptive benefit-cost assessment of the type described in the guidance can properly weight relative costs and benefits. The decision-maker will weight benefits described in narrative terms based upon his preconceived notions, and is mislead to

believe the analysis confirms those notions. It is only by the monetization of benefits can benefits and costs be correctly weighted and subsequently compared.

Cost-benefit analysis, which appears to be so valuable in public decisions, has yet to be successfully incorporated into the process. The reasons for this have been discussed above. A rigorous monetization of the benefits and comparison of the present value of opportunity costs and benefits, as well as an evaluation of the distributional effects of projects, requires far too many resources to be performed on a routine basis. A descriptive analysis only reiterates what is already believed to be true, and is redundant and possibly misleading. With respect to the issue at hand, if EPA expects a large number of benefit-cost assessments for justification of wastewater treatment projects, it will force states to do meaningless analyses which cannot contribute to decisions. This is additional and needless expense which states can ill afford.

The State of Minnesota urges EPA to encourage thoughtful cost-benefit analyses by states. These analyses should use the best empirical techniques of applied economics. When submitted to EPA for project justification, it is desirable that they be considered along with other technical information. Because of the resources required to perform such analyses, it cannot be expected that they will be performed except for a few of the nation's most expensive projects. Also, because of resource constraints, the decision to do the analysis should always rest with the state.

The State of Minnesota urges EPA to re-evaluate the value of descriptive analyses such as described in the guidance. As stated above, such analyses cannot improve the decision making process, and may in fact be detrimental to it.

Finally, the State of Minnesota urges EPA to clarify the guidance. The issues have been properly identified. However, EPA should squarely face the questions they have raised in the guidance and provide unambiguous answers for states, so that they may plan accordingly.

Sincerely,

Barry C. Schade
Director
Division of Water Quality

BCS:rbj
cc: Noel Kohl, Region V, U.S. Environmental Protection Agency
Charles Sutfin, Director, Water Division, Region V
Robbi Savage, Executive Director, ASIWPCA
James Brown, Director, Water Quality Division, Iowa Department of

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

TUESDAY, AUGUST 2, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to call, at 10 a.m., in room 2167, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen.

The Subcommittee on Water Resources is meeting this morning to continue our hearings and receive testimony on Possible Amendments to the Federal Water Pollution Control Act.

Today's hearing is the continuation of a number of hearings we intend to hold in order to receive a wide range of views and recommendations on this matter.

The Federal Water Pollution Control Act is one of the most important environmental laws we have. It is designed to restore and maintain the quality of our Nation's waters through a comprehensive scheme of regulation and grants for the construction of publicly owned treatment works.

The law, by and large, has worked well, though we have got a great deal more to do. We have seen notable improvements in the quality of many of our waters.

Any amendments to the act must be considered with great care. It is important that nothing be done which will weaken the environmental protection afforded by this law and the progress that we have made.

This is not to say, however, that we should preclude the consideration of amendments which will make it work more effectively which, of course, is our function.

We will start off our hearings with witnesses chosen to present various points of view on the need for amendments to the Federal Water Pollution Control Act.

At future hearings, we will hear from a large number of other witnesses. This will enable us to determine just what, if any, amendments to the act are necessary and appropriate.

I want to thank you for participating this morning and certainly our colleagues that are here. We have a great deal to do. There is a great deal of interest in this particular legislation and in my judgment it is perhaps the most important piece of legislation that we

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have to consider now, taking into consideration the vital import of the quality of the water supplies of the people of our Nation.

That is the spirit and the direction in which we intend to go in our deliberative in-depth hearings.

Before I call our first distinguished witness, I would like to refer now to our ranking minority member, the Honorable Arlan Stangeland from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

I want to join you in welcoming all of the witnesses who will testify on an issue of great importance to each and every American, the issue of maintaining and improving the quality of the waters of the United States.

The Federal Water Pollution Control Act, commonly known now as the Clean Water Act, continues to be a valuable tool for insuring that this Nation will always have an abundant source of clean water for all purposes.

This act has been basically sound environmental legislation for over 10 years. Nonetheless, we should always consider any legislation that will improve the purposes of this act. For instance, significant changes were made in 1981 to title II, the construction grants program.

Among other things this year, some of the funding provisions of the Clean Water Act must be addressed. Section 106, the State grants provision, and section 314, the clean lakes program, are examples of funding provisions that expired last September.

Such provisions need to be reviewed and considered for continued funding. Other major issues that deserve full consideration this year include compliance dates, pretreatment, nonpoint sources, and permits, among others.

Today, and in subsequent hearings, we will be hearing suggestions for changes that can be made to improve the Clean Water Act. In many cases I am sure we will hear arguments to not change parts of the act.

In any case, the goal must be a viable piece of legislation that is tailored to meet the needs of today and the future.

Mr. Chairman, I look forward to hearing from our witnesses today. I hope that upon consideration of their views we will be able to craft this legislation so as to continue the Nation's efforts to maintain and improve the quality of our rivers and lakes.

Thank you.

Mr. ROE. I thank the distinguished gentleman from Minnesota. We have the honor of having with us this morning the chairman of our full committee, the Honorable Jim Howard.

The CHAIRMAN. Thank you very much, Chairman Roe.

I will be brief, but I wanted to be here this morning to congratulate you and the members of this subcommittee for the work that you are doing.

During the latter part of the last Congress, where we had been spending so much time in legislation concerning transportation, highways, bridges, tunnels, mass transit, improvement in the highway trust fund, I was very often asked about the Public Works and Transportation Committee and what it would be involved in during the 98th Congress. I stated at that time that I believed that in this

Congress the Public Works and Transportation Committee would be basically the Water Committee.

Water improvement, water purity, water project reform—this subcommittee had been working through the entire last Congress on the major water resources bill that will be before the full committee tomorrow. I just want to congratulate you and the members of the subcommittee for all of the many, many hours of work that you have done in trying to assure a better environment for all the people in our country. Despite the fact that you have this major resource development bill that you have worked on for so long coming before the full committee tomorrow, which you passed out last week, you have taken the time now and will be immediately after the recess, on the Clean Water Act, another major piece of legislation.

I think that our committee will be very, very proud of what we have done for the future of our country in terms of water quality and related matters.

I just want to wish you Godspeed. We are all looking forward to later this fall and having presented to the full committee another fine piece of water legislation.

I just want to thank you for the time and effort you and the chairman and ranking member and members of your subcommittee are spending on this vital issue to the people of the United States.

Thank you very much.

Mr. ROE. Well, we certainly do appreciate the generosity of your statements, Mr. Chairman.

We are going to move in that direction to see that this bill is a quality piece of legislation.

We have with us our first witness this morning, the Honorable Roy Dyson of the State of Maryland, who has been a leader in the Congress in advocacy for water resources development and clean water programs. He has been in the forefront of developing thoughts and ideas and directions in this legislation and others that will be extremely important, not only to his State, but to the Nation.

We certainly welcome his input and participation in the many things he has been able to do to help this whole water resources program move ahead.

Mr. Dyson, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF CONGRESSMAN ROY DYSON

Mr. Chairman and distinguished members of the Subcommittee, I am here today to testify on behalf of H.R. 2817, a bill I introduced earlier this year that would amend the Clean Water Act to provide for the enhanced water quality of the Chesapeake and Narrangansett Bays.

The Chesapeake Bay is one of our nation's most cherished and valuable natural resources. It is the largest and most productive estuary in the contiguous United States, with a drainage area of nearly 64,000 square miles in size, that includes parts of 6 states and the District of Columbia. Its primary tributaries, the Susquehanna, the Potomac, and the James River, are major river systems in their own right.

The Bay's significance extends beyond its size, to its importance for the seafood, waterborne commerce and water-oriented industries that are vital to the middle Atlantic States. I am particularly aware of this because of my responsibilities as the

representative of Maryland's First Congressional District, which surrounds the largest portion of the Chesapeake Bay.

These local interests are complemented by the impact that the Bay has on the nation as a whole. Its fishing production is surpassed only by that in the Atlantic and Pacific Oceans, with an annual dockside value in excess of $100 million. Commercial shipping interests carried nearly 239 million tons of cargo via the Chesapeake in 1981, estimated at nearly $27.5 billion.

One of the Bay's most valuable roles is its function as a wildlife and aquatic habitat. Its tributaries are important places of reproduction for a variety of species of anadromous fish, like the shad and striped bass. In fact, almost 90 percent of the striped bass along the Atlantic Coast spawn in the Chesapeake's waters.

These facts indicate why the environmental quality of the Bay is so important to the region and the nation as you probably know, next month the Environmental Protection Agency completes its seven-year, $27 million study of the Chesapeake Bay's water quality. The study answers many of the most pressing questions about the condition of the Bay, but those answers only point to how much more remains to be done.

Research findings have identified three areas of serious concern: toxics, nutrient enrichment and declining Bay grasses. These findings indicate that the main stem of this 195-mile long estuary is losing oxygen. In addition, the upper reaches of the main tributaries are considerably more stressed than scientists orginally thought. All of these trends—the decline of the Bay grasses; the increased nutrient and attendant loss of oxygen; and the continued loading of toxic chemicals and heavy metals into Bay waters—portend serious problems by the end of the century.

The Bay grasses that once stretched from shore to shore are nearly gone. Commercial landings of striped bass plunged from five million pounds in 1973 to less than one million pounds in 1979. Shad, once harvested in huge numbers, are now so scarce that there is a rule against catching and keeping them in Maryland. In general, the fish that migrate each year to spawn in the Chesapeake Bay are disappearing.

This decline in water quality and subsequent loss of aquatic life has been principally the result of non-point source pollution; that is, agricultural and urban runoff, usually from heavy rainfall. Each year the Bay receives 400 million gallons of sewage and some 2,000 tons of metals and symbolic compounds, including sediments, fertilizers and herbicides.

Given the EPA findings, it is essential that we have a shared federal and state commitment to clean up the Chesapeake Bay. Management strategies for the Bay have been developed. A massive data base has been assembled to define trends in water quality variables and living resources over a 30 year time period for the Bay and its tributaries. There is only the need to establish a mechanism for implementing the Bay management strategies and to monitor their environmental results. I believe my legislation would provide that mechanism and the incentive for the states of Maryland, Pennsylvania and Virginia to develop and implement an interstate Bay Management Plan.

My legislation will provide a maximum of $10 million in federal funds in each of the next four fiscal years to help the states turn their water pollution reduction plan into action. The federal grant money, to be administrered by the EPA, will cover up to 55 percent of the total cost of implementing the plan in each state. Therefore, each state would have to contribute at least 45 percent.

The federal commitment to a healthier Chesapeake Bay must not end merely becasue the states are now the first line of defense against this water pollution problem. As the country's largest and most productive estuary, the Chesapeake Bay is as much a federal concern as a local one.

My bill also includes a $3 million authorization to insure that the EPA continues to conduct research and monitor changing conditions in the Bay. Special attention would be paid to the effect of pollutant loadings on the dwindling striped bass population.

Mr. Chairman, I am pleased to note today that my bill has received the support of the entire Maryland and Virginia Congressional delegations and over half of the members from Pennsylvania, three of whom are members of this subcommittee. In addition, the governors of Pennsylvania, Maryland and Virginia have all publicly endorsed the bill.

This high level of interest from Federal and State officials in the Chesapeake Bay region represents an unprecedented effort to deal with the Bay's problems. We have begun to recognize that there is a mutual interest among the needs of all parties in the region. Residents on the Bay worry about non-point source pollution harming the aquatic life. Farmers who live near the Bay or in the Susquehanna Valley are

concerned with finding ways to save money on fertilizer and improving their productivity by preventing further soil erosion. Problems such as these have too often been seen as being mutually exclusive and therefore incapable of a comprehensive solution. My bill initiates the kind of coordinated approach that begins the process of dealing with runoff and its harmful effect not only on the Chesapeake Bay, but on our farmland.

Finally, my legislation would provide $1.5 million in each of five fiscal years for the EPA to conduct research assessing the principal factors having an adverse effect on the environmental quality of the Narragansett Bay in Rhode Island. My bill also requires the Administrator of EPA to establish a mechanism for improving the collection, storage, analysis and dissemination of water quality data on the Narragansett Bay.

Mr. Chairman and fellow Colleagues, the Clean Water Act is our Nation's major legislative vehicle to improve water quality. The Chesapeake Bay, as our Nation's largest and most productive estuary, warrants protection under its statutes. My legislation represents an important first step towards improving the Bay's water quality and assuring future generations that the Chesapeake Bay will continue to be a productive center for economic development and aquatic life. I urge its inclusion in this year's reauthorization of the Clean Water Act. Thank you, Mr. Chairman. I would gladly answer any questions you may have.

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I

98TH CONGRESS
1ST SESSION

H. R. 2817

To amend the Federal Water Pollution Control Act to provide for the enhanced water quality of the Chesapeake and Narragansett Bays, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

APRIL 28, 1983

Mr. DYSON introduced the following bill; which was referred to the Committee on Public Works and Transportation

JULY 29, 1983

Additional sponsors: Mr. BARNES, Ms. MIKULSKI, Mr. LONG of Maryland, Mr. PARRIS, Mrs. HOLT, Mr. BATEMAN, Mr. HOYER, Mrs. SCHNEIDER, Mr. MITCHELL, Mrs. BYRON, Mr. ST GERMAIN, Mr. GOODLING, Mr. DANIEL, Mr. FOGLIETTA, Mr. WOLF, Mr. BOUCHER, Mr. OLIN, Mr. EDGAR, Mr. KOSTMAYER, Mr. WHITEHURST, Mr. FAUNTROY, Mr. SISISKY, Mr. BLILEY, Mr. ROBINSON, Mr. YATRON, Mr. MCDADE, Mr. BORSKI, Mr. CLINGER, Mr. KOLTER, Mr. GEKAS, Mr. HARRISON, Mr. SHUSTER, Mr. MURPHY, Mr. GAYDOS, and Mr. GRAY

A BILL

To amend the Federal Water Pollution Control Act to provide for the enhanced water quality of the Chesapeake and Narragansett Bays, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That title I of the Federal Water Pollution Control Act is
4 amended by adding at the end thereof the following new sec-
5 tion:

1 "CHESAPEAKE AND NARRAGANSETT BAYS

2 "SEC. 117. (a) The Administrator shall, at the request
3 of the Governor of a State affected by the interstate manage-
4 ment plan developed pursuant to the Chesapeake Bay pro-
5 gram, make grants for the purpose of implementing the man-
6 agement mechanisms contained in such plan if such State
7 has, within one year after the date of enactment of this sec-
8 tion, approved and committed to implement all or substantial-
9 ly all aspects of such plan. The authority to make grants
10 under this section shall be subject to such amounts as may be
11 provided in advance in appropriation Acts.

12 "(b) Federal grants under subsection (a) of this section
13 shall not exceed 55 per centum of the costs of implementing
14 the interstate management plan in any year and shall not be
15 made to any State for any fiscal year when the expenditure of
16 non-Federal funds by such State is less than 45 per centum
17 of the costs of implementing the interstate management plan
18 during such fiscal year.

19 "(c) The Administrator shall continue the Chesapeake
20 Bay program to—

21 "(1) continue to assess the relationship between
22 point and nonpoint source pollution and the impact of
23 such pollution on water quality; and

1 "(2) do further research on the impact of pollutant
2 loadings on the fisheries resources of the bay, with spe-
3 cial attention given to the striped bass.
4 "(d) The Administrator shall immediately begin to
5 assess the principal factors having an adverse effect on the
6 environmental quality of the Narragansett Bay, as perceived
7 by both scientists and users, and, subsequent to a review of
8 presently ongoing research, to direct and coordinate research
9 and abatement programs that will most efficiently address
10 those factors. The Administrator shall also analyze all envi-
11 ronmental sampling data presently being collected on the
12 Narragansett Bay and suggest and undertake methods for
13 improving such data collection; establish a continuing capac-
14 ity for collecting, storing, analyzing, and disseminating such
15 data; institute a sampling program where deficiencies are
16 found to exist in present sampling programs; and determine
17 what units of government have management responsibility for
18 the environmental quality of the bay and define how such
19 management responsibility can best be structured so that
20 communication and coordination can be improved not only as
21 among the respective units of government but also among
22 those units, research and educational institutions, and groups
23 and individuals concerned with the environmental quality of
24 the bay.

1 "(e) There are hereby authorized to be appropriated the
2 following sums, to remain available until expended, to carry
3 out the purposes of this section:
4 "(1) $10,000,000 per fiscal year for the fiscal
5 years ending September 30, 1984, September 30,
6 1985, September 30, 1986, and September 30, 1987,
7 for grants to States under subsection (a);
8 "(2) $3,000,000 per fiscal year for the fiscal years
9 ending September 30, 1983, September 30, 1984, Sep-
10 tember 30, 1985, September 30, 1986, and September
11 30, 1987, to carry out subsection (c); and
12 "(3) $1,500,000 per fiscal year for the fiscal years
13 ending September 30, 1983, September 30, 1984, Sep-
14 tember 30, 1985, September 30, 1986, and September
15 30, 1987, to carry out subsection (d).".

○

Mr. ROE. Please proceed.

TESTIMONY OF HON. ROY DYSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND

Mr. DYSON. I want to thank you this morning, Mr. Chairman, not only for the time in these last few days before we go on our August recess, but also the times I have had the opportunity to speak to you in your office on something that is very important to me, as you know, the Chesapeake Bay.

I am here today again to thank you and other members of this distinguished subcommittee and to testify on H.R. 2817, a bill I introduced earlier this year that would amend the Clean Water Act to provide for the enhanced water quality of the Chesapeake and Narragansett Bays.

The Chesapeake Bay is one of our Nation's most cherished and valuable natural resources. It is the largest and most productive estuary in the contiguous United States, with a drainage area of nearly 64,000 square miles in size that includes parts of six States and the District of Columbia.

Its primary tributaries, the Susquehanna, the Potomac, and the James Rivers, are major river systems in their own right and we have a map up here that will indicate where the bay is, also provided by the Congressional Research Service. Very helpful.

It also shows the Outer Continental Shelf. I know that is not an issue today, but is part of that map.

Mr. ROE. It will be tomorrow.

Mr. DYSON. The bay's significance extends beyond its size to its importance for the seafood, waterborne commerce, and water-oriented industries that are vital to the Middle Atlantic States. I am particularly aware of this because of my responsibilities as the representative of Maryland's First Congressional District, which surrounds the largest portion of the Chesapeake Bay.

These local interests are complemented by the impact that the bay has on the Nation as a whole. Its fishing production is surpassed only by that in the Atlantic and Pacific Oceans, with an annual dockside value in excess of $100 million. Commercial shipping interests carried nearly 239 million tons of cargo via the Chesapeake in 1981, estimated at worth nearly $27.5 billion.

One of the bay's most valuable roles is its function as a wildlife and aquatic habitat. Its tributaries are important places of reproduction for a variety of species of anadromous fish, like the shad and striped bass.

In fact, almost 90 percent of the striped bass along the Atlantic coast spawn in the Chesapeake's waters.

These facts indicate why the environmental quality of the bay is so important to the region and the Nation.

As you probably know, next month the Environmental Protection Agency completes its 7-year, $27 million study of the Chesapeake Bay's water quality. The study answers many of the most pressing questions about the condition of the bay, but those answers only point to how much more remains to be done.

Research findings have identified three areas of serious concern: toxics, nutrient enrichment, and declining bay grasses. These find-

ings indicate that the main stem of this 195-mile-long estuary is losing oxygen.

In addition, the upper reaches of the main tributaries are considerably more stressed than scientists originally thought. All of these trends, the decline of the bay grasses, the increased nutrient and attendant loss of oxygen, and the continued loading of toxic chemicals and heavy metals into bay waters, portend serious problems by the end of the century.

The bay grasses that once stretched from shore to shore are nearly gone. Commercial landings of striped bass plunged from 5 million pounds in 1973 to less than 1 million pounds in 1979. Shad, once harvested in huge numbers, are now so scarce that there is a rule against catching and keeping them in Maryland. In general, the fish that migrate each year to spawn in the Chesapeake Bay are disappearing.

This decline in water quality and subsequent loss of aquatic life has been principally the result of nonpoint source pollution; that is, agricultural and urban runoff, usually from heavy rainfall.

Each year the bay receives 400 million gallons of sewage and some 2,000 tons of metals and symbolic compounds, including sediments, fertilizers, and herbicides.

Given the EPA findings, it is essential that we have a shared Federal and State commitment to clean up the Chesapeake Bay. Management strategies for the bay have been developed. A massive data base has been assembled to define trends in water quality variables and living resources over a 30-year time period for the bay and its tributaries.

There is only the need to establish a mechanism for implementing the bay management strategies and to monitor their environmental results. I believe my legislation would provide that mechanism and the incentive for the States of Maryland, Pennsylvania, and Virginia to develop and implement an interstate bay management plan.

My legislation will provide a maximum of $10 million in Federal funds in each of the next 4 fiscal years to help the States turn their water pollution reduction plan into action.

The Federal grant money, to be administered by the EPA, will cover up to 55 percent of the total cost of implementing the plan in each State. Therefore, each State would have to contribute at least 45 percent.

The Federal commitment to a healthier Chesapeake Bay must not end merely because the States are now the first line of defense against this water pollution problem.

As the country's largest and most productive estuary, the Chesapeake Bay is as much a Federal concern as a local one.

My bill also includes a $3 million authorization to insure that the EPA continues to conduct research and monitor changing conditions in the bay. Special attention would be paid to the effect of pollutant loadings on the dwindling striped bass population.

Mr. Chairman, I am pleased to note today that my bill has received the support of the entire Maryland and Virginia congressional delegations and over half of the Members from Pennsylvania, three of whom are members of this subcommittee, and I believe you have the full list in front of you.

In addition, the Governors of Pennsylvania, Maryland, and Virginia have all publicly endorsed the bill.

This high level of interest from Federal and State officials in the Chesapeake Bay region represents an unprecedented effort to deal with the bay's problems. We have begun to recognize that there is a mutual interest among the needs of all parties in the region.

Residents on the bay worry about nonpoint source pollution harming the aquatic life. Farmers who live near the bay or in the Susquehanna Valley are concerned with finding ways to save money on fertilizer and improving their productivity by preventing further soil erosion.

Problems such as these have too often been seen as being mutually exclusive and therefore incapable of a comprehensive solution.

My bill initiates the kind of coordinated approach that begins the process of dealing with runoff and its harmful effect not only on the Chesapeake Bay, but also on our farmland.

Finally, my legislation would provide $1.5 million in each of 5 fiscal years for the EPA to conduct research assessing the principal factors having an adverse effect on the environmental quality of the Narragansett Bay in Rhode Island.

My bill also requires the Administrator of EPA to establish a mechanism for improving the collection, storage, analysis and dissemination of water quality data on the Narragansett Bay.

Mr. Chairman, and fellow colleagues, the Clean Water Act is our Nation's major legislative vehicle to improve water quality.

The Chesapeake Bay, as our Nation's largest and most productive estuary, warrants protection under its statutes.

My legislation represents an important first step towards improving the bay's water quality and insuring future generations that the Chesapeake Bay will continue to be a productive center for economic development and aquatic life.

I urge its inclusion in this year's reauthorization of the Clean Water Act.

Again, Mr. Chairman, I want to thank you and members of your subcommittee for the attention you have given me and I welcome any questions you may have.

Mr. ROE. On behalf of the committee, I want to thank you for your testimony, and also the comprehensive approach you have taken, and also your leadership.

We have taken the first step now which is the study both here and in the Narragansett Bay. Now, the idea is, let's get on with it and get something done in the country. That is what your legislation directs itself to. I think it is poignant that you have on page three, I believe it is, where you mention at the top of your first paragraph, the enormous quantities of sewage, for example, and metals and things of that nature, other compounds, that are going into that bay which is true, of course, across the country.

So I appreciate your strong support. Be assured the greatest of attention will be paid to your legislation and the legislation and the direction which you wish to pursue.

The gentleman from Minnesota.

Mr. STANGELAND. I have no specific questions, Mr. Chairman. Mr. Dyson, in your statement you mention some management strategies and you might want to outline some of those manage-

ment strategies that have been developed and that you see a need for implementation. I share with you the concern for the body of water such as the Chesapeake Bay because I think it is very important to quality of life and income for the area, plus pleasure and enjoyment for a lot of people.

I commend you for authoring and bringing the legislation here to our attention and discussing it.

Mr. DYSON. If I could add one thing, I understand the chairman when these hearings continue in September, will in fact have the Governor of Maryland, the Governor of Virginia and the Governor of Pennsylvania here. If you don't have questions now, that may be an excellent opportunity to start bringing up this management strategy because, as you know, we have a 55/45 ratio, the amount of Federal dollars versus State dollars.

In the bill it specifically says that if a State does not come up with that sizeable financial commitment, and I say sizeable because our States are in a bind just like the Federal Government is right now, then the Federal commitment is not there, so we should see—I think we have already begun to see a commitment from them.

Mr. STANGELAND. Is there a Chesapeake Bay Commission to work together to solve problems on the Chesapeake?

Mr. DYSON. There is a bistate commission now between Virginia and the State of Maryland. It is made up primarily of State legislators. It doesn't deal with the situation in a comprehensive way, the way we are trying to approach this, by implementing some of the recommendations of the EPA study. There really isn't a mechanism today to deal with the way the EPA study I think would envision it.

Mr. STANGELAND. Thank you.

Mr. ROE. Are there any other questions of the gentleman from Maryland?

The gentleman from the Virgin Islands, Mr. de Lugo.

Mr. DE LUGO. Thank you, Mr. Chairman. I have no questions. I just wanted to commend you on your legislation, Roy, and say that I was fortunate enough to be on the water this past Saturday, and——

Mr. DYSON. You picked a good day to be there.

Mr. DE LUGO. Yes. I was amazed by the richness of the Chesapeake Bay and what nature has given us. I was thinking about how important it is to protect a natural resource like this, and I was impressed where you point out that, for instance, with the bay grasses, they once extended all across the floor of the Chesapeake at one time; they are nearly gone, and the dramatic downturn in the population of striped bass. In just a 6-year period striped bass dropped, according to your testimony, from 5 million pounds in 1973 to less than 1 million pounds in 1979.

Now, that is dramatic and certainly this legislation you are proposing has great merit. I want to commend you on coming forward with it. You have made a fine presentation today and I hope we will act favorably on this legislation.

Thank you, Mr. Chairman.

Mr. DYSON. Well, you and the committee, you are the committee. We hope to be able to reverse that with the rockfish, the striped bass. I think we can do it. This can be the beginning today.

Mr. ROE. Mr. Clinger from Pennsylvania.

Mr. CLINGER. Thank you, Mr. Chairman. I would just like to also commend our colleague, Mr. Dyson, for an excellent piece of legislation which I am privileged to be a co-sponsor of.

Mr. DYSON. I was going to mention that.

Mr. CLINGER. Just a couple of questions.

I understand that recently there has been a meeting of the Governors of Pennsylvania, Maryland and Virginia to discuss the overall problems of the Chesapeake. I wondered if you could comment on the current efforts by the three States to improve water quality in the Chesapeake Bay, and how would you see your bill as furthering those efforts?

Mr. DYSON. As you know, your Governor in fact initiated that meeting. That was held on the banks of the Susquehanna there at the State capitol in Harrisburg. That was the first time, to my knowledge, that the three of them specifically got together, Governor Robb, Governor Hughes and Governor Thornburgh to discuss one issue, the Chesapeake Bay.

All three have endorsed our effort, specifically this bill, and have indicated that they will make the kind of commitment a State would have to make. We are fortunate that all three States are willing to make it.

They again got together about a week and a half ago. While your governor was not able to attend, Pennsylvania's Lieutenant Governor did. So we had key State officials from the three States on the Chesapeake with the EPA Administrator.

As the gentleman from the Virgin Islands indicated, they looked at areas where there are no longer bay grasses, at areas where there used to be spawning grounds for the striped bass and other aquatic life. They again emphasized their commitment to the bay and I am very encouraged by that. I think, in fact, I would not have gone forward with this legislation if the three of them were not willing to get together and to make that beginning. So they have done that.

Mr. CLINGER. I think we in Pennsylvania tend to take it for granted and have really not been as involved as we should have been, and have not felt as directly involved as Virginia and Maryland.

Could you tell us what kind of impact Pennsylvania has on the water quality of the Chesapeake?

Mr. DYSON. Well, you have a little over 50 percent of the fresh flow into the Chesapeake comes from the Susquehanna. As the EPA study indicated, nitrogen loadings in the Chesapeake are one of the primary culprits to the degradation of the Chesapeake Bay. I have the figure here.

In an average year, about 29,000 tons of nitrogen comes into the bay just through the Susquehanna, about 1,400 tons of phosphorus comes through. So if we can stop that, and I might add that this situation results in a tremendous cost to the farmers of the state of Pennsylvania up and down the Susquehanna Valley, and significantly reduce run-off in the northern part of the Chesapeake Bay in Maryland, I think we are going to make a significant contribution to cleaning up the bay.

We talk about those bay grasses. The bay grasses have been depleted the worst, the worst situation is in the upper Chesapeake Bay.

Mr. CLINGER. As you say, I think it would be a benefit certainly to Pennsylvania farmers to address the problem because the other concern we have, of course, is soil erosion.

The soil being washed away into the upper reaches of the bay.

So I think that is going to clearly be to Pennsylvania's benefit to play a very active role in this program. We thank you again.

Mr. DYSON. I thank you for becoming a cosponsor.

Mr. ROE. Fine. The gentleman from California, Mr. Anderson.

Mr. ANDERSON. Thank you, Mr. Chairman.

I too do want to welcome our colleague from Maryland and congratulate him on a very fine presentation. I don't have a question, just an observation on how casually Rep. Dyson mentioned that he was going to have the Governors from Maryland, Virginia and Pennsylvania meet in Wasington D.C. to discuss the Chesapeake Bay.

I want to point out a difference.

When I try to get our governor from California to come here to discuss an issue, I can't do it because many will say he is on a junket. The Governors in this area practically live here. You should appreciate the fact that you can have your Governors here and there is no criticism.

Anyway, Roy, I want to commend you on an excellent presentation.

Mr. DYSON. I wish I could say this a bit off the record. Since becoming a member of Congress, I serve on the Armed Services Committee and serve with you on the Merchant Marine Committee. I have taken one or two of those trips I thought were very worthwhile and received no criticism whatsoever.

Now, Barbara Mukulski and I, a member from Maryland, took a trip to the Chesapeake Bay. That is my district and her district, and one of our well known papers in the State called it a junket, and I am getting letters about it today, about this junket that I took to my own congressional district. But that is politics, I guess.

Mr. ROE. The gentleman from Arkansas.

Mr. HAMMERSCHMIDT. Thank you, Mr. Chairman.

Roy, I remember with pleasure a trip I took with you down on the Chesapeake, to Jefferson Island in your district. That was a nice trip.

Mr. DYSON. I thought so too.

Mr. HAMMERSCHMIDT. I did get to examine the Chesapeake. I noticed that you commented that the substantial loss of aquatic life had been principally due to the result of non-point source pollution, and you mentioned that great input of phosphorus and nitrates that come into that body of water. I know that the Chesapeake is not just important to those surrounding States, but it is a national asset.

In my own district I have a small situation that involves a fairly large Corps of Engineers lake where we have a rather unique plains area in two counties. We too are getting a degradation of that water in that lake, and we think it is largely because of non-point source pollution.

I am following closely your progress on your efforts because I hope that this committee will help me address that problem as well.

I note that you think this is unique enough to where it should receive separate consideration by our committee rather than encompassing, in the large approach, trying to find the solution to nonpoint source pollution.

You want us to act specifically on your particular matter here, isn't that correct?

Mr. DYSON. Well, this is really what EPA identified as the primary source of the problem in the Chesapeake Bay's degradation. I guess what I am saying in answer to your question is yes.

Mr. HAMMERSCHMIDT. You know we realize that we have a national problem with nonpoint source solution which probably has not been adequately addressed. Maybe this would be a good study area.

Certainly it would be great for you and the Chesapeake Bay and, as I say, for the Nation, really. I am hoping that where we do have specific situations like yours and mine, maybe this committee can zero in on them and work with EPA to find the answer.

Thank you very much for your testimony.

Mr. ROE. The gentleman from Pennsylvania, Mr. Edgar.

Mr. EDGAR. Thank you, Mr. Chairman.

I too am a cosponsor of the bill that Congressman Dyson has introduced. I think it is a really good approach.

I particularly appreciate the cost-sharing that we built a relationship between the Federal and State governments to respond to this problem because no one entity of government should in fact bear the total cost.

I do have two questions.

One, in terms of the adequacy of the $10 million that appears on page four of the bill itself. The Chesapeake Bay, with all of the problems that you state and the expanse and nature of that particular waterway, seems to me to be of a size that the $10 million may not be adequate to really meet the kind of needs that you are outlining in this bill.

I know that that will be joined by other resources from State government, but do you have any studies, or any way of determining how close your estimate is to the real needs?

Mr. DYSON. To be honest with you, it is way off. The Chesapeake Bay Foundation I think has placed an estimate of something like $100 million, if you want to adequately clean up the Bay.

Mr. EDGAR. So we just left a zero off, is that right?

Mr. DYSON. I think we have to be realistic.

We are not going to get that kind of money. The Nation is facing a tremendous deficit. At the same time, if you want some sort of cost-sharing, the States cannot come up with that. Most of our States, you know, are bound by constitutional amendment to their constitutions that they have a balanced budget. So again for Pennsylvania, for Maryland and for Virginia, we are making a sizeable commitment to come forth with even that kind of money, the 45 percent.

Mr. EDGAR. The reason I raise the question with you is that the Chairman and ranking Republican of this committee has done a

good service in developing an omnibus water bill that really tries to deal with some of the environmental questions and focuses on leaning in the direction of the environment, where there is cost involved, have not been afraid to State what those costs are in mitigating that environmental problem.

I think here we ought not to underestimate what resources may be by both State and Federal government to make sure that this problem is cleaned up, which brings me to my last question.

That is, what happens if we don't do anything? What happens if we don't respond? We allow the levels of the pollutants in the Susquehanna to continue?

We allow the pattern to exist that is presently in place in this particular area? What would you predict by 1990, the year 2,000, just those kinds of foresighting years, 10, 15, 20 years out, as to the impact?

Mr. DYSON. I would think you would probably end up with basically a sterile estuary. There are very few bay grasses left now.

The sea grant program, a very good program, which, as you know, we endorsed legislation on the floor yesterday through the Merchant Marine Committee, is conducting research on trying to reestablish those Bay grasses. Dr. Rita Caldwell and her associates from the University of Maryland feel they have a good plan for bringing the grasses back, but obviously they are doing them in I guess you would say test ponds over on the Eastern Shore and on the Western Shore.

But, if they were to place them in, let's say, the Susquehanna Flats, which is up near the Aberdeen Proving Ground, and you haven't changed anything as far as the water quality, it would be a futile effort.

I don't think we can afford to let that happen. You would obviously see very few blues, very few blue crabs. We had a significant reduction in blue crabs this year.

You would see, as I have already mentioned, the reduction in striped bass, and the rockfish. We just see a continuation of that.

The Bay is also in the Atlantic flyway. I think it would make a considerable amount of difference in the types of birds you would see coming in during the fall and winter.

I might add to the members of the committee, because these birds feed on these various grasses that are dwindling they will decline due to lack of food. I am very pessimistic about this. If something doesn't happen, you can see, and the EPA has indicated just that sort of thing, that this is the direction, this is clearly the trend.

Mr. EDGAR. So there is a sense of urgency to do something in this area?

Mr. DYSON. I really think so.

Mr. EDGAR. Thank you.

Mr. ROE. Are there any other questions of the distinguished gentleman from Maryland? If not, we want to thank you very much, Roy, for being with us this morning and your splendid testimony and your leadership in this most important natural resources field.

Mr. DYSON. Again, I thank you, Mr. Chairman. I know what your schedule is like. You have got the big bill up tomorrow, I under-

stand. You mentioned it to me yesterday. My hat is off to you and all you are attempting to do in such a short period of time.

Mr. ROE. We appreciate that very much.

Our next witness, if we can reverse a little bit, is the distinguished gentleman from West Virginia, the Honorable Nick Rahall.

Does the gentleman wish to speak from his seat?

Mr. RAHALL. Mr. Chairman, if I might.

Mr. ROE. Of course.

Mr. RAHALL. I will speak briefly from here, Mr. Chairman, since my comments are very brief.

I ask unanimous consent that my prepared statement be included in the record at this point.

Mr. ROE. Without objection, so ordered.

[Statement referred to follows:]

STATEMENT OF HON. NICK J. RAHALL II, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WEST VIRGINIA

Mr. Chairman I wish to thank all of those who are here today to express their views on the successes and failures of the Clean Water Act. As a result of this legislation, enacted in 1972, our nation's waters are much more cleaner and safer for all Americans than they were 11 years ago.

I do not intend to use much of the Subcommittee's time today, however I would like to highlight some of the concerns that have been brought to my attention about the Clean Water Act.

One of the most immediate actions Congress must take is to approve an extension of the BAT (Best Available Technology) deadline which is currently set for July 1, 1984. Many of our industries will not be able to comply with this deadline because EPA cannot publish the BAT guidelines in time for the affected industries to install the necessary pollution control equipment. I support the provisions outlined in H.R. 2305, a bill introduced by Congressman Oberstar, to extend the compliance deadline. This bill establishes a compliance deadline of July 1, 1986 or 36 months after the effluent guidelines are published by EPA. I hope the Subcommittee will be able to adopt the provisions of H.R. 2305 during mark-up.

Throughout the hearings on the Clean Water Act I hope our Subcommittee can address the serious funding shortfall in the Construction Grants Program. Two years ago, the President forced upon Congress drastic changes in this program. These changes are not adequately solving our nation's wastewater treatment problems. With municipalities continuing to be one of the country's greatest water polluters, we in Congress must act to help or municipalities meet their wastewater treatment needs.

Another issue, related to the Construction Grants Program is that of pretreatment. The current regulations administered by EPA have proven to be quite cumbersome and duplicative. This issue needs to be addressed in a manner that will provide the best means of pollution control while avoiding unnecessary and costly duplication of pretreatment standards.

Congress must strive to develop an effective Clean Water Act, one that address our most serious water quality problems while not imposing unnecessary burdens on our industries and municipalities. We need to make sure that the resources we devote to the cleaning of the nation's waters are spent wisely and on those projects that will produce a benefit for society. I want to express my appreciation to the Chairman for scheduling these hearings and I look forward to working with all of you to develop an effective Clean Water Act.

Thank you.

Mr. RAHALL. Mr. Chairman, I do appreciate the huge task you have undertaken. I know you have a full day of witnesses planned and you plan to continue throughout the day.

I feel that the Clean Water Act that has been a part of our Nation's laws for over a decade now has served this Nation well. We

have seen that our waters are a lot cleaner and safer for all Americans than they were 11 years ago.

I do not intend to use much of the subcommittee's time today. However, I would like to highlight some of the concerns that have been brought to my attention about the Clean Water Act.

One of the most immediate actions Congress must take is to approve an extension of the Best Available Technology deadline which is currently set for July 1, 1984.

Many of our industries, especially steel, will not be able to comply with this deadline because EPA cannot publish the BAT guidelines in time for the affected industries to install the necessary pollution control equipment.

I support the provisions outlined in H.R. 1305, a bill introduced by Congressman Oberstar, to extend the compliance deadline.

I would hope in the deliberations of the reauthorization the committee would incorporate Congressman Oberstar's extension of the BAT deadlines as part of our overall authorization.

Throughout the hearings on the Clean Water Act, I hope our subcommittee can address the serious funding shortfall in the construction grants program. Two years ago the President forced upon Congress drastic changes in this program. These changes are not adequately solving our Nation's wastewater treatment problems.

I believe it is time we considered those changes and perhaps made some changes thereto. Another issue related to construction grants program is that of pretreatment. The current regulations administered by EPA have proven to be quite cumbersome and duplicative. This issue needs to be addressed in a manner that will provide the best means of pollution control while avoiding unnecessary and costly duplication of pretreatment standards.

I feel confident, Mr. Chairman, that we will develop an effective reauthorization of the Clean Water Act, one that does address our most serious water quality problems in this Nation while not imposing unnecessary burdens on our industries and our municipalities.

We need to make sure that the resources we devote to the cleaning of our Nation's waters are spent wisely and on those projects that will produce a benefit to our society.

Again, I express my appreciation to you and members of the subcommittee for allowing me this opportunity to make a statement, and I would be glad to answer questions or enter into discussions with my colleagues. Thank you, Mr. Chairman.

Mr. ROE. I do want to thank the gentleman for his continuing leadership in this important field.

Is there anyone who has a particular question they want to ask our colleague from West Virginia on his statement?

If not, your statement will appear in full in the record and we will continue.

Our next group of witnesses is an environmental panel to be comprised of Dr. Ben Dysart, president of the National Wildlife Federation, together with Mr. John McComb, director of the Washington Office of the Sierra Club, and Mr. Daniel Weiss, conservation associate with the Izaak Walton League.

We want to welcome all of you to this opening hearing this morning.

If you would, Dr. Dysart, identify anyone you wish to for the record. We want to welcome you. We are particularly pleased that you have joined together at our opening hearings now because I think it is important at the outset that we get an overview and chance to consult and take advantage of your knowledge and ability for the distinguished national organization that you represent. We want to get sort of a foundation to begin with as to an overview going back when we all started this effort in the early seventies. We are about to take another corrective approach, to expedite and to make our work go better.

So we really particularly welcome you all this morning to set that foundation. I just wanted to welcome you on that basis.

The gentleman from Minnesota.

Mr. STANGELAND. Mr. Chairman, I just want to join in your remarks in welcoming this distinguished panel and their contribution and input.

I look forward to hearing what they have to say and look forward to having them work with us as we fashion the amendments to the Clean Water Act so that we do truly meet the needs of this Nation in maintaining and improving the quality of our waters.

Thank you.

The full text of your prepared statements will appear in the record at this point.

[Statements referred to follow:]

STATEMENT OF DR. BENJAMIN C. DYSART III, PRESIDENT AND CHAIRMAN OF THE BOARD, NATIONAL WILDLIFE FEDERATION

Mr. Chairman and Members of the Committee on Water Resources, I am Benjamin C. Dysart III, President and Chairman of the Board of the National Wildlife Federation. I want to thank you for inviting me to testify in support of H.R. 3282 the Water Quality Renewal Act of 1983, introduced by Chairman James Howard.

The National Wildlife Federation is the world's largest non-profit conservation and education organization dedicated to the wise use and conservation of the nation's natural resources. Today, I speak on behalf of our more than 4 million members and supporters and our 51 affiliated statewide and territorial organizations.

When Congress authorized the Clean Water Act in 1972, it affirmed the nation's commitment to fishable-swimmable waters. Although it is clear that this 1983 goal will not be met, substantial progress has been made toward its attainment. We support H.R. 3282 because it addresses continuing water pollution problems.

Several of those problems have been of particular concern to the Federation. They are (a) the importance of Section 404 in protecting our wetlands and water quality, (b) the more than 200 applications for discharging sewage into estuaries and the ocean, (c) the continuing impact of dams on water quality, and (d) the largely unabated problem of nonpoint pollution.

SECTION 404: PROTECTING WETLANDS

The protection of our nation's rapidly vanishing wetlands through a strong regulatory program under Section 404 continues to be one of NWF's very highest priorities. Because we place such great importance on this Clean Water Act provision, we intend to submit a separate detailed evaluation of statutory and regulatory revisions to the Section 404 permit program.

We also would very much appreciate the opportunity to return before this Subcommittee to give these revisions the full attention they deserve. At this time, however, we offer only the following brief comments.

You certainly do not have to be an engineer or a scientist to know that the nation's waters are ecologically and hydrologically interrelated. Consequently, the destruction or degradation of our wetlands adversely affects the physical, chemical, and biological integrity of *all* our waters.

According to the Army Corps of Engineers' Institute for Water Resources, in a draft report in 1981, without Section 404 wetland loss due to activity regulated by

the program would double. Section 404 plays an essential role in meeting the goals of the Clean Water Act, i.e., the restoration and maintenance of the nation's waters.

Over the past year and a half, the Department of the Army has substantially revised the Section 404 program; and further changes have just recently been proposed. A number of these revisions and proposed revisions concern us because they seriously cripple the ability of agencies to use Section 404 to protect the nation's waters, especially its wetlands.

By restricting the jurisdictional scope of Section 404, H.R. 1570, a bill introduced by Rep. Sam Hall of Texas, would have a serious adverse impact on the integrity of all the nation's waters. Moreover, there is no evidence of "unreasonable delay" on which to justify the bill. And, finally, even if "unreasonable delays" could be demonstrated, the restrictive definition of "navigable waters" proposed by H.R. 1570 would not solve the problem; but it could result in the loss of millions of acres of wetlands.

We support the amendments to Section 404 that are included in Chairman Howard's bill H.R. 3282. The amendment to Section 404(b) affirms the fundamental standards for protection of the aquatic environment (i.e., a presumption against disposing dredged or fill material in wetlands and the search for practicable alternatives) currently contained in EPA's guidelines. We believe this amendment is critically important because of the repeated and continuing attempts by the Department of Army to weaken the substantive standards of the 404(b) guidelines.

The amendment to Section 404(q) seeks to make interagency review of permits once again a meaningful and equitable process. The amendment provides the Federal resource agencies with sufficient time to evaluate controversial permits and removes the authority for the Assistant Secretary of Army for Civil Works to veto permit referral requests by those agencies.

Finally, we would encourage this Subcommittee to include an amendment to Section 505 to allow citizens to bring lawsuits against the Secretary of the Army for failing to carry out his Section 404 duties. Section 505 already allows such action against the EPA Administrator for 402 permits. We see no reason to treat Section 404 any differently.

OCEAN DISCHARGE WAIVERS

In 1977, Congress added Section 301(h) to the Clean Water Act. This controversial provision established a means by which publicly-owned treatment works discharging through outfalls into oceans or certain estuarine areas could obtain waivers from secondary treatment on a case-by-case basis if approved by EPA after approval by the State. Before obtaining a waiver, the municipality would have to demonstrate that the modification would not impair the integrity of the receiving waters.

The provision was the Act's first major departure from a clear cut requirement of a strict technology-based approach to the control of water pollution. Since its adoption, 209 coastal cities and communities have applied for waivers. Many are large industrialized cities including Boston, Philadelphia, Los Angeles, and Miami. In some cases, applicants are proposing to discharge sewage that is virtually untreated into ocean waters and estuaries.

The resulting discharge of raw or minimally treated sewage can have a number of serious effects. Sewage treatment plants, especially those near large cities often have discharges of high levels of toxics such as cynaide, mercury, copper, lead, and cadmium that exceed EPA marine water quality criteria and therefore threaten aquatic life and the food chain. While ocean outfall waivers may have minimal environmental impacts from some small non-industrialized coastal municipalities, we think they are particularly inappropriate for large industrialized municipalities with large quantities of toxic constitutents in their discharge. Further, large communities with their attendant industrial discharges and need for water recreation, place a larger number of other demands on their waters in comparison to small communities. In addition, NWF believes that waivers should not be granted to any municipality proposing to discharge into sensitive estuaries where effects would be magnified by slow flushing rates.

We strongly support the provisions in Chairman Howard's bill, H.R. 3282, which would amend Section 301(h) to eliminate waivers for discharges into estuaries; require a minimum of primary treatment before discharge under a waiver; require pretreatment for the control of toxics in areas with a population greater than 50,000; allow waiver applications to be reviewed with consideration of other pollutant sources in the immediate area; and allow EPA water quality criteria to be taken into account.

Need for amendments in ocean discharge waivers

The original impetus behind ocean waivers reflected a general feeling that the more "traditional" pollutants such as nitrogen, phosphorus, biological oxygen demand (BOD) and suspended soilds would not present problems in the ocean environment if they were discharged in large quantities. In fact, an examination of EPA documents shows that the ability of the ocean to absorb these pollutants is not without limit. Los Angeles County's historic discharges have led, according to EPA's November, 1981, decision document on the L.A. County waiver, to "Massive changes in the structure, function, abundance, and diversity of inshore plants and animals . . ." Recent improvements in the discharges are, again from EPA's tentative decision, "apparently insufficient to allow for complete recovery of the kelp beds." Massive displacements of fishes are due to the L.A. County discharges. An area 4.1 square miles suffers decreased fish abundance. The outfall area is a center of the fish diseases. The diseases in fish include fin erosion, lip and skin tumors, bulging eyes, parasites, body deformity, and color aberrations.

L.A. County will improve the quality of its discharge if they are granted a 301(h) waiver. But EPA cannot confidently project a return to normal condition. They are relying on the future monitoring program to make this determination.

EPA's tentative decision on the L A. County outfall indicates that the proposed discharge will decrease the dissolved oxygen content of bottom waters by about 10 percent. This is the maximum amount allowed by the California State Water Resources Control Board. The March, 1981, TetraTech report to EPA indicates that the proposed outfall will lead to the presence of hydrogen sulfide throughout 1.5 square miles of ocean floor. The presence to hydrogen sulfide implies that this 1.5 square miles will have anaerobic sediments. This 1.5 square miles is more than ten times the area of the zone of initial dilution. Little or no anaerobic sediments are predicted if secondary treatment is used. Many of these alterations from the proposed discharge are almost entirely due to the result of the input of BOD and suspended solids rather than the result to the input of toxics. Thus, the ability of the ocean to absorb traditional pollutants, let alone toxics, is limited and certainly warrants intensive case-by-case scrutiny.

No estuarine waivers

The first proposal in H.R. 3282 which I would like to address is the proposed limitation of sewage discharge waivers to the territorial sea and to the waters of the contiguous zone. This eliminates from consideration estuarine waivers, and waivers in bays within the continental baseline.

We support this limitation because of the importance of estuaries. I am sure you have often been told that estuaries support 80% of our commercial and recreational fisheries catch, and that a large and growing fraction of our population lives close to estuaries. Estuaries are our most intensely used marine waters. We can only expect the intensity of their use to increase. Thus, in estuaries of all places, we should, consistent with the principles of multiple use management, support tighter control over sewage discharges rather than permit less control by allowing for waivers from secondary treatment.

Let me give you some examples of stresses that existing sewage outfalls are placing on several estuaries and costal bays.

Puget Sound.—Every day 230 million gallons of chlorinated sewage effluent are discharged into Puget Sound. In addition, 3,690 metric tons of zinc, 1,958 metric tons of copper and 3,690 metric tons of lead are discharged annually. Much of this finds its way into the bottom sediments of Poverty Bay due to unusual current patterns in the area. As a result, most shellfish growing areas in central Puget Sound are closed to harvesting because of bacterial and toxic contamination, many beaches are closed to swimming, and a large number of diseased bottomfish have been observed in the Sound. Commencement Bay, in particular, is severely threatened by a high concentration of organic pollutants from discharges. Fish diversity has also decreased in this area. Today, more than 30 waiver applications are pending in the Puget Sound area.

San Francisco Bay.—San Francisco Bay is also a severely stressed estuary. The striped bass population is being diminished and degraded. The State Health Department discourages shellfish harvesting in the area. Twelve applications are pending for discharging into the Bay 120 million gallons per day (MGD) of minimally treated sewage. It has been estimated that water in the southern portion of the Bay may remain as long as two months before currents send it northward out of Bay.

Massachusetts Bay.—Boston Harbor is another example of a productive estuary which has been and is continuing to be impacted by the disposal of sewage. The Massachusetts Division of Marine Fisheries concluded in a report in 1966, which

they say remains true today, that unsightly sewage plumes have adversely affected the marine resources and aesthetic value of the area by increasing bacterial contamination. In addition, bioaccumulation of toxics by fish, shellfish, and other animals along the food chain is well documented. The shellfish industry has suffered great losses due to restricted clam fishing in the area. John Felix of the Mass. Department of Environmental Quality Engineering reports that approximately half of the area is closed to shellfishing, and shellfish caught in the other half must be sent to a special cleansing plant before they are sold. Although degradation of the fishing resource in the area cannot be attributed completely to outfalls, they are an important contributing source.

New York Harbor.—A large number of ocean outfall waiver applications from New York and New Jersey are concentrated in the Hudson River-New York Harbor area. Of 14 applications, eight have initial dilution factors of less than 40:1. This means they have high concentrations of suspended solids and BOD that stay in the discharge area and disperse slowly. Of the remaining six, three have initial dilutions above 40:1 in the winter but probably not in the summer, and the other three do not provide enough information to determine initial dilution. Seven of these applicants' proposed discharge have toxics in amounts which exceed EPA's marine water quality criteria and all would be discharging into waters that do not support a balanced, indigenous population of fish, shellfish, and wildlife or do not meet water quality standards for some portion of the year. Taken together, these applications would permit the release of 1.5 billion gallons per day of sewage at less than secondary treatment levels in the New York Harbor area, much of it containing large quantities of toxics from industries.

Toxic requirements for ocean waivers

Two proposed amendments address toxic effluents. One proposal has a technology basis and the other a water quality basis. Together, we believe they will limit the flow of toxics to the sea from sewage plants. In order to protect the marine environment toxic material input to the sea should be limited. Dispersing toxics in a fluid is not the appropriate way to dispose of these materials. Table I of our testimony shows how much secondary treatment can control toxics in comparison to lower levels of treatment. The table shows, for example, that the concentration (or amount) of copper is typically increased by 75 percent or more as a publicly owned treatment work (POTW) shifts from secondary to primary sewage treatment. In the L.A. County case, a shift to advanced primary treatment from secondary treatment would lead to a 33 percent increase in the concentration of DDT, a 67 percent increase in mercury, a 60 percent increase in copper, and a 31 percent increase in cadmium. Toxics are such a hazard to the marine environment they should be treated much more stringently than conventional pollutants.

The discharge of toxics from POTWs is not a minor problem. The report of a panel of fifteen experts in a 1982 Estuarine Research Federation publication indicates that sewage effluent is a large contributor of metals to the New York Bight. According to these experts, metals inputs from sewage effluents contribute to red tides, the erosion of fins in fishes, damage to the benthos on which fish depend, and damage to fisheries in general. Despite this fact, many of the POTWs discharging into the New York Bight are proposing to lesson their level of sewage treatment.

Of the 19 POTWs which have received tentative approvals from EPA at least four (Lynn and S. Salem, Mass., Seattle-Richmond, Wash., and Oxnard, Calif.) have effluent which containts pollutants whose concentrations will exceed EPA's Water Quality Criteria to the detriment of marine life.

Toxic materials in the effluent of the South Essex, Mass., plant are expected to exceed EPA water quality criteria for the protection of marine life after initial dilution. The concentration of copper in wet weather will be 1.4 time the acute criterion and 8.2 times the chronic criterion. Total chromium concentrations in dry weather will exceed the chronic criterion. Several organic compounds such as endrin aldehyde and a half dozen pesticides may also be discharged in harmful quantities. However, the analyses by South Essex are inadequate to make the determination as to whether or not these discharges would exceed EPA water quality criteria. Besides these problems, the South Essex POTW has toxics that approach EPA's Water Quality Criteria with compounds such as mercury and nickel discharged in amounts that will lead to concentrations that are about 50 percent of EPA acute water quality criteria. Pretreatment may ultimately limit the input of some or all of these toxics into Massachusetts Bay. Secondary treatment would further limit the entry of these compounds.

The current 301(h) requirement for the control of toxics is that municipalities must enforce all applicable pretreatment requirements, and that it must also estab-

lish a schedule, to the extent practicable, to eliminate the entrance of pollutants from non industrial sources into the POTW.

The control of toxic materials at the source by pretreatment programs can be an effective and efficient way to limit the flow of toxic materials. However, Federal pretreatment standards are, in many cases, not yet developed. In addition, we can expect that they will be subject to protracted litigation once they have been developed.

H.R. 3282 would also amend Section 310(h) to require large dischargers to limit their discharge of toxics under a waiver to the same extent that such toxics would be limited if the POTW employed secondary treatment. Municipalities would be required to have pretreatment program to limit the discharge of each priority pollutant in its POTW influent.

The proposed modification in the pretreatment provision of Section 301(h) will provide some protection against toxics in the absence of final Federal pretreatment standards and in lieu of secondary treatment.

Would EPA or a municipality know how much to control toxics under this provision? We believe that the answer is "yes". This proposal applies to POTWs serving more than 50,000 people. Sixty-one such municipalities have applied for waivers. Forty-four percent of these (or 27 POTWs) are currently operating at secondary treatment. A few others are proposing only seasonal waivers. For these two groups, the necessary level of toxics removal may be set quite precisely. Required levels of toxics removal for remaining POTWs in this size class could be set in a number of ways. One way would be by extrapolation from existing data such as presented in the second column of Table I. Another method to set toxics limits could include more detailed analyses of the effluent characteristics and modeling of changes in the effluent resulting from additional treatment.

A second proposed addition to 301(h) addresses the problem of toxic material in POTW effluent. This proposal is a requirement that POTW effluent meet the criteria established under section 301(a)(1) after initial mixing. The 301(a)(1) criteria include EPA's saltwater quality criteria for the protection of marine life. As I have already noted, four of the POTWs that EPA has tentatively approved for a waiver do not meet these criteria. Meeting the water quality criteria is essential to satisfy the statutory requirements that ocean discharges not interfere with the quality of water necessary to protect a balanced indigenous population of fish, shellfish, and wildlife. Thus, this addition would provide additional guidance to EPA on the quality of water to be maintained. This provision, as a quantitative water quality based approach, complements the quantitative technology based modification to the pretreatment requirement.

Given a required level of removal, how could a municipality control its level of toxics removed in the absence of a full Federal pretreatment program? Many municipalities have sewer regulations which include, or which could include, local pretreatment standards to arrive at the necessary level of toxics removal.

Require minimum of primary treatment

Another proposed provision is to set a primary treatment floor to any discharge granted a 301(h) waiver. We believe that primary treatment is an absolute minimum level of treatment dictated by fundamental principles of sanitation as well as common sense. We do not believe that any community should be permitted to discharge sewage that has not been through even this minimal processing. A primary floor on treatment was EPA's initial interpretation of 301(h), but this interpretation was overturned by the courts in May, 1981. Passage of this measure would provide EPA with the ability to enforce this basic level of sanitation.

Cumulative effects

The proposed change adds that the ocean outfall may not interfere with water quality alone or in combination with pollutants from other sources. Thus EPA must consider the effects of all of the discharges in the area on the quality of the marine waters. If all of the discharges together do not provide for a balanced indigenous population of fish, shellfish, and wildlife, then the application for a waiver from secondary will not be granted. We support such a provision.

NWF monitoring proposal

After a review of a number of 301(h) documents, we are concerned because EPA's determinations of the expected level of impact often do not come from the data supplied by the applicant. The statute says that, "The administrator may issue a permit if the applicant demonstrates to the satisfaction of the Administrator that the various requirements are met." Technical evaluations of ocean outfall waiver

applications prepared by a consultant that have now been tentatively approved for EPA are replete with language such as: "Phytoplankton sampling conducted by JCA [a consultant] in support of the preliminary application is insufficient for making the required BIP comparisons for the following reasons: Samples were taken in the wrong and at too few locations with inadequate sampling or inappropriate sample processing . . . The phytoplankton sampling program of CDM [a consultant] suffered from similar deficiencies." (Draft Technical Evaluation Report (TER), South Essex 301(h) application, TetraTech, p. 139-140.)

In another case:

"Taxonomic studies of the phytoplankton community in the vicinity of the Orange County outfall have apparently not been conducted, so it is not possible to compare such parameters as species composition, abundance, diversity, and dominance between areas near the outfall and control areas." (Orange County Draft TER, p. 284).

In response to the fundamental test of the statute—will the discharge interfere with a balanced indigenous population (BIP) of marine life?—the technical evaluation for Monterey, California, notes for fishes that:

"The applicant does not address demersal or pelagic fish communities in response to this question." (Draft TER, p. 214.)

Similarly, the Draft TER (p. 259) for Santa Cruz states:

"The applicant's fish data contribute to a general description of the demersal fish communities of the biogeographical zone. The limited data do not provide, however, for a conclusive evaluation of the effects of the existing outfall on fish assemblages."

In a response to the same question, but for benthic infauna, the Draft TER (p. 266) for West Point, Wash., states:

"The applicant cites studies by Harmon et al. (1977) and Thom et al. (1979) in support of the response that the West Point discharge does not interfere with the protection and propagation of a BIP of benthic invertebrates. In this evaluation (Part B, Section 6), the sampling design and data reported for both studies were determined to be inadequate to demonstrate the presence or absence of a BIP. Data given by Thom et al. (1979) suggest that current scouring of the bottom is biologically very important near the apex of West Point and that suspended organics from the outfall may be causing "enrichment" of benthic communities in nearby areas not subject to intense current scouring. However, the study design and data presented by Thom et al. (1979) are inadequate to assess faunal "enrichment" or to statistically separate the biological effects of current scouring from the biological impacts of the effluent."

Despite these significant data gaps, EPA tentatively approved all five of these applications in 1981 and 1982.

If EPA can project a balanced indigenous population (BIP) given inadequate information, the monitoring program once a waiver is granted must provide definitive proof that a BIP is in fact maintained. Providing for the protection and propagation of a BIP of fish, shellfish, and wildlife requires an understanding of the natural environment and its variations that extends beyond the point discharge. To do this, not only must a monitoring program look to localized effects, but also the regional context. Monitoring systems being proposed can be altered so that their ability to produce information to compare impacts to the statutory limits would be much improved. To this end, we propose two additions to the statute. Add as 301(h)(3)(i):

"In the event that two or more municipalities with discharges in excess of 5 million gallons per day and with waivers resulting from this section are less than 50 miles apart, EPA shall require the municipalities to submit a joint plan to monitor the effects of the discharges and background marine conditions in a uniform way not only in the immediate vicinity of the discharges, but also in the marine waters of the region between and surrounding the adjacent discharges."

Under this proposal, we would envision monitoring around each individual outfall similar to that which EPA's regulations currently require. In addition, under our proposal, there would be additional monitoring to provide a solid base of data to which the effects of sewage outfalls could be compared. The additional data would provide those examining the impacts with a far better ability to modify the permits in the future.

This proposal would be effective because adjacent municipalities would use similar methods so that their results could be comparable. The comparability of the data would enhance its value. Our proposal would also require municipalities to collect additional information that would provide a regional context for the interpretation of local data. This proposal would lead to the establishment of intermunicipal agreements in a number of places assuming that waivers may be finally granted in these areas. The work of the Southern California Coastal Water Resources Project, or SCCWRP, reflects the results of one such agreement voluntarily imposed. The work of SCCWRP is most valuable in describing the basic ecologic context of the area so

that interested parties may have a base of fact over which to debate the impacts of a specific discharge.

There is a second shortfall in monitoring programs for which we propose another addition. We believe that a BIP should not only allow organisms to survive in the area around the discharge, but also to recruit and to reproduce. Proposed monitoring plans generally measure only the presence or absence of species. With knowledge of the natural history of the organisms, and a understanding of ecological principles, some of the functions of the populations can be constructed. However, reproductive success or failure must be studied more directly.

To remedy this, our second addition to the statute would be 301(h)(3)(ii):

"Monitoring for discharges exceeding 5 million gallons per day shall include measures of the reproductive status, community structure, population dynamics and bioaccumulation of toxics in a representative sample of biota."

This proposal is different from existing EPA practices primarily in that it considers the reproductive status of the species. The additional requirements of this proposal would help EPA and the interested public to interpret the results of the monitoring program in light of the biological standard.

DAMS

As you probably know, NWF has been concerned about impact of dam discharges for quite some time. This includes existing dams and dams under construction such as the Richard B. Russell Dam on the Savannah River near my home in South Carolina. Dam can adversely affect downstream and in-reservoir water quality and aquatic habitat in a variety of ways. This tends to be much more of a problem in some areas than others. In addition, downstream communities may have to set higher sewage treatment levels because of low dissolved oxygen caused by discharges from upstream dams.

During July 1981, tens of thousands of fish were killed below the Conowingo Dam in Maryland on the Susquehanna River because of low levels of dissolved oxygen (DO) in the water. In addition, an annual loss of fish valued at $358,000 is the result of low levels of DO below the Table Rock Dam on Lake Taneycome, Missouri.

Dams can cause major water quality problems due to physical, biological, and chemical changes when it is stored behind a dam. Not all dams, however, can be considered problematic. Water quality problems tend to occur with high dams and large reservoirs. Large reservoirs in the south often stratify in the summer, causing low DO, extremes in temperature, and higher concentrations of metals in the released water. Of course, there are trade-offs. The cold hypolimnetic waters released from some hydropower dams can make possible a trout fishery where natural temperatures would have been too warm.

Problem reservoirs tend to be those over 40 feet in depth and with a storage capacity of 1,000 acre-feet or more. By our estimates there are less than 3,000 such dams which could cause water quality modifications or problems.

Chairman Howard's bill would require that EPA, in cooperation with other interested Federal agencies and states, study and monitor the effects of dams on our nation's waters. EPA would present this study with recommendations for control to Congress by December 1985. Whether it is for public water supply or sport fishing, the public has a substantial stake in reservoir water quality. The public should have the opportunity to have input to this study, too, in addition to that of EPA and the state agencies.

NWF applauds this effort by Chairman Howard. It is a good first step toward the control of pollution caused by dams.

NONPOINT POLLUTION

In 1977, the General Accounting Office estimated that over half the pollution entering the nation's waterways was from nonpoint sources, and the most important of nonpoint sources were agricultural activities, urban storm water runoff, silviculture, and poorly designed and managed septic systems. Unfortunately, the nonpoint pollution situation has not improved in the interim.

The Council on Environmental Quality's 1979 Annual Report stated that nearly all drainage basins were affected in some parts by pollution from agriculture and urban runoff. In 1982, 6 states reported the primary cause of water degradation for their state was nonpoint sources. This year, 15 of 20 states reporting progress towards the Clean Water Act's fishable/swimmable goal list nonpoint pollution as a significant pollutant source are being identified as the major contributor to pollution in large water bodies such as the lower Great Lakes and Chesapeake Bay, as well as the bays, surface water, and groundwater of Long Island, New York.

Since 1974, $451 million have been spent on studies, plans, and demonstration projects. The failure in not substantially reducing nonpoint source related pollution has not necessarily been in the plans and projects, as it has been out our failure to implement what we have learned.

One reason for this lack of implementation is the prevailing perception that the problem of nonpoint pollution is enormous and the solution extremely difficult to devise. That perception is incorrect. If we examine two of the major sources, i.e., agriculture and urban runoff, we find that many effective techniques are already known and are being used on a small scale and that, by applying these techniques to the critical areas nationwide, a substantial reduction of pollution can be achieved.

Agricultural nonpoint pollution

Sediment is the major water pollutant from agricultural activities. Approximately 6 billion tons are lost from farm lands yearly. This soil loss seriously affects not just productivity of the land but also the quality of the waters into which most of the soil flows. Scientists estimate that 75 percent of the sediment entering streams, rivers, and lakes comes from soil erosion on cropland.

The General Accounting Office has reported that soil losses resulting from poor agricultural practices are 25 percent worse today than in 1934. In Illinois, about 2 bushels of soil wash from cropland for each bushel of corn produced in the state. The Illinois Natural History Survey has found that the backwater lakes along the Illinois River are half filled with mud because of siltation from neighboring farms produced in the last 15 years.

However, it is important to realize that less than 3 percent of the land contributes over one-third of the total annual siltation loss. Controlling erosion from a surprisingly small number of areas, and some of them rather small in size, can result in a majority of the pollutant reduction needed to protect water quality. This applies to small river basins as well as the nation as a whole.

In most instances, EPA-funded Areawide Management Plans, better known as "208 plans", identified familiar soil and water conservation measures as the so-called best management practices or "BMPs" for controlling erosion and runoff. These included such traditional soil conservation practices as contour farming, chisel plowing, buffer strips, and crop rotation. In fact, USDA studies have shown that minimum till or no-till practices control runoff while maintaining or increasing crop yields.

There are BMPs available which, if properly selected, designed, constructed, operated, and maintained, individually and as systems of BMPs, can effectively reduce the export of soil, nutrients, herbicides, pesticides, oxygen-demanding materials, bacteria, heavy metals, and other toxics off-site and into surface waters. This can be done at a cost which is not prohibitive, if there is a genuine commitment to cope with this serious long-standing problem and move on toward protecting our nation's streams.

The water-quality-oriented committees of the Congress, the EPA, and the state agencies with water quality responsibilities have to insist that water quality be the real focus, and that the right BMPs be specified, put in place, and operated properly. And my own environmental engineering profession has to recognize the problem and utilize the latest in proven cost-effective design procedures for nonpoint pollution.

You in the Congress and the American taxpayers should expect the same level of performance, effectiveness, and reliability for nonpoint control facilities as we all expect of environmental engineers in dealing with industrial and municipal wastes that come in a pipe to a modern and well operated wastewater treatment plant.

The 208 programs have also led a number of states to adopt both voluntary and mandatory control programs for agricultural nonpoint pollution. Although the implementation of many of these programs has been very disappointing, the existence of such programs has caused the states to face farm-generated water quality problems explicitly, and to build planning and administrative programs to deal with them. Under 208, the states had to establish an identification and priority system and give evidence of legal authority to act when it was deemed necessary. By working with Soil Conservation Districts and Resource Conservation Districts, farm organizations and farmers have begun to recognize the need to act in dealing with impaired off-farm, in-stream water quality.

In addition, the incentive of Rural Clean Water Program funds has induced serious action in some areas. The Rural Clean Water Program of 1977 specifically authorized the Department of Agriculture to sign contracts with land users in selected high priority areas. Under these contracts, the land user receives special technical

assistance and costsharing to improve water quality by reducing sediment and other agricultural pollution. Other Federal programs assisting farmers with nonpoint pollution cleanup include the Model Implementation Program and the Clean Lakes Program.

The Model Implementation Program, a cooperative effort between EPA and the Department of Agriculture, tested so-called best management practices in seven agricultural areas. Although results were very mixed because of the short duration of the projects and institutional difficulties, much of the information gathered can be put to practical and beneficial use.

The Clean Lakes Program has resulted in some examples of cleanup of agricultural runoff. On the Cobbessee and Annabessacook watersheds in Maine, farmers have built animal waste storage facilities to store animal wastes over the winter rather than spreading them on top of the snow. This is resulting in substantial improvements in the water quality of the lakes.

There have been some real bright spots and good programs and individual projects, and there have been some with very modest water quality accomplishments. Taken together, however, these programs—208, Model Implementation, Rural Clean Water, Clean Lakes—have resulted in plans and management practices developed on a small scale. What is needed now is a nationwide program with approriate management practices which provide water quality benefits implemented in all the areas where nonpoint pollution is a critical problem.

Urban runoff

The other source of nonpoint pollution is urban runoff. Pollution in urban runoff includes air pollutants that have settled in streets, erosion from construction sites, salt and other de-icing chemicals, litter, and animal refuse. Ninety five percent of the bacterial loading to the bays of Long Island comes from urban runoff and has resulted in the closing of many shellfish areas. Most of the lakes selected for study under the Clean Lakes Program are urban park lakes adversely affected by urban runoff.

Similar to agricultural nonpoint pollution, most of the urban runoff pollution is coming from limited areas, i.e., the industrialized and highly urbanized sections of a city, and can be controlled through appropriate management practices targeted at those areas. Such practices include more frequent street cleanings, use of porous pavement, and suitably designed and maintained sedimentation and catchment basins to reduce the amount of dirt and soil carried in runoff.

The National Urban Runoff Program is studying 28 metropolitan regions. Baltimore has been identified as having the most contaminated runoff of the 28. Yet it is only a few areas in Baltimore that contribute most of the pollution: the heavily industrialized and urbanized sections. Solutions that have been identified in Baltimore include more frequent street cleaning, and paving streets and parking lots with a coarser type of asphalt that lets water percolate through into the earth.

The tangible costs to society of letting nonpoint pollution continue unchecked are quite high. The nation is losing productivity from its land, killing and smothering fish and wetlands, contaminating fish and shellfish so they are inedible, and spending over $300 million a year dredging the resultant silt from our rivers, lakes, and harbors. The list could go on. And the intangible but very real costs to the public are also great.

I urge you, the Subcommittee, to adopt a nonpoint pollution control program. The program should target those waterways where nonpoint runoff is the major source of pollution. It should be mandatory on the states to develop and specify appropriate and effective BMPs that will improve water quality for those individual sources producing the pollution.

A date should be set by which all sources will be required to implement suitable practices and systems of practices. In addition, Federal agencies should make their assistance programs consistent with a state's program so that a Federal agency is not encouraging a practice which a state is trying to discourage.

Finally, EPA should have the authority to step in and develop a program if the state fails to act. In our opinion, this Subcommittee can make the most meaningful improvement in the Clean Water Act for this reauthorization period by adopting a mandatory control program for those limited areas and sources which contribute to nonpoint pollution.

Thank you, Mr. Chairman, for the opportunity to testify on behalf of the National Wildlife Federation.

TABLE I:. The Effect of Secondary Treatment on the Removal of Toxics From Sewage Effluents

Pollutants	Percentage Increase in Amount of Material Left in the Effluent as a Result of Primary Treatment in Comparison to Secondary Treatment[1]	Percentage Increase in Effluent Concentration as a result of discharge under a 301(h) waiver as compared to secondary treatment, L.A. County, CA[2]	Percentage Increase in Effluent Concentration as a result of discharge under a 301(h) waiver as compared to secondary treatment, Passiac Valley, NJ[3]	Percentage Increase in Effluent Concentration as a result of discharge under a 301(h) waiver as compared to secondary treatment, Middlesex County, NJ[3]	Percentage Increase in Effluent Concentration as a result of discharge under a 301(h) waiver as compared to secondary treatment, Miami-Dade, FL[3]
Arsenic	-	-	-9	-	-
Cadmium	11	31	-	42	-
Chromium	37	53	23	81	0*
Copper	72	60	150	85	-
Lead	25	40	-	120	-
Mercury	20	67	0	133	150
Nickel	17	11	-11	-	0*
Silver	-	38	-	-	-
Zinc	64	40	1	58	-11
Cyanide	-	-	-	-	0
DDT (Total)	-	33	-	-	-
Heptachlor	-	-	-	220	-
Methylene Chloride	-	-	-	-	-9
Phenol	100	-	-	-	67
Tetrachloroethylene	-	-	-	-	70*
Toluene	-	-	-	-	90*
Trichlorothylene	-	-	-	-	0*
Total Organic Carbon	181				

*greater than

1/ Secondary treatment in this column includes activated sludge treatment. Data were taken from 130 secondary treatment plants and 52 primary treatment plants. Source: U.S. EPA, 1977. Federal Guidelines, State and Local Pretreatment Programs, Vol 1, EPA 430/9-76-017a, 27 pp. as adapted in C. G. Gunnerson et al., 1982. "Management of Domestic Wastes" pp. 91-112 in G. F. Mayer [ed.] Ecological Stress and the New York Bight: Science and Management. Estuarine Research Federation, Columbia, S.C, 715 pp.

2/ Adapted from the Draft Technical Evaluation Report (TER) of the 301(h) applications for L.A. County. This TER was prepared by TetraTech, a consultant to EPA's Office of Marine Discharge Evaluation.

3/ Adapted from the POTW's 301(h) application.

Summary of ocean waiver applications [1]

Receiving waters under Howard amendment:	
Estuary discharge	132
Ocean discharge	74
Location:	
East Coast	98
West Coast	112
Enclosed Bays:	
New York Harbor	26
Massachusetts Bay	6
San Francisco Bay	12
Puget Sound	28
Treatment level:	
Backslide from secondary	65
Proposing or at primary	152
Proposing less than primary	6
Toxics for ocean dischargers:	
Effluent contains toxics which exceed EPA marine water quality criteria	10
Population factors for ocean dischargers:	
Less than 50,000	33
Equal to or greater than 50,000	29
Discharge status:	
Proposed discharge pipe	49
Existing discharge pipe	158

[1] There are presently 210 applications, but some do not contain enough information to include under certain headings.

STATEMENT OF JOHN MCCOMB, DIRECTOR, WASHINGTON OFFICE, SIERRA CLUB

Mr. Chairman and members of the Subcommittee, I am John A. McComb. I am the Director of the Washington Office of the Sierra Club, one of the nation's oldest conservative organizations, with over 350,000 members organized in chapters and groups throughout all fifty states.

The Sierra Club members have chosen clean water and toxics legislation to be among their highest priorities for the 98th Congress. We support H.R. 3282 because it embodies a clear commitment to maintain and improve the quality of America's waters.

Control of water pollution is a top priority to the American people, as well as to members of the Sierra Club. In December 1982, Louis Harris and Associates conducted a nationwide survey of American attitudes toward water pollution for the Natural Resources Council of America. Here are a few highlights from that survey, a full copy of which is submitted for the record. The Harris poll asked people how important a variety of factors are in improving the quality of life in the United States. Curbing water pollution was rated "very important" by 74 percent, identical to the rating for "keeping the economy growing."

Concern about toxic wastes is even greater. An overwhelming 95 percent of Americans feels that disposal of hazardous wastes is a serious problem in America. Ninety-three percent feel that pollution of lakes and rivers by toxic substances from factories is a serious national problem.

According to EPA estimates, nearly 300 million excess pounds of toxic pollutants will be unnecessarily discharged into America's waterways and sewer systems each year that pretreatment and BAT controls are delayed. These are chemicals that cause cancer, birth defects, and have other adverse effects on human health and aquatic life.

In order to help this Committee help frame the major issues with which you will have to deal, I would like to briefly discuss to specific issues in the remainder of my testimony. Both deal with controls of toxic water pollution, particularly with the need to reduce industrial discharges of toxic wastes into sewers and waterways. These two areas are pretreatment of industrial wastewater and best available technology (BAT).

In 1977, Congress wisely enacted a national program requiring pretreatment of industrial wastes to remove toxics before they enter municipal sewage treatment plants. As this program is beginning to take effect, it is coming under attack from some industries that want to avoid the costs of pretreatment and from some municipal sewerage agencies that do not want to meet federal pretreatment requirements.

There have been suggestions for weakening the programs by allowing municipalities to use their own pretreatment programs instead of the federal one. Any new

program to exempt municipalities or industries would delay for years the implementation of pollution controls. Planning a new program and tailoring it to each local community would severely strain the resources of the Environmental Protection Agency, which are sorely needed elsewhere. In addition, it is more fair for industries to pay to clean up their wastes.

The final result of pretreatment waivers would probably be a higher level of toxic pollution, because only municipalities with weaker pretreatment programs would be motivated to apply for waivers. In the best of cases—where the sewage treatment plant is successfully removing the toxics from the water—there is still the problem of contaminated sludge. A small quantity of concentrated toxic wastes removed from the industrial effluent at the plant site can sometimes be recycled, and in other cases it can be much more efficiently destroyed or disposed of than vast quantities of municipal sludge that contain lower concentrations of toxic wastes.

We are pleased that H.R. 3282 would not weaken the existing national pretreatment program.

The "best available technology economically achievable" or BAT guidelines are designed to reduce industrial toxic pollution discharge directly into rivers and other waterways. The Clean Water Act requires industries to comply with BAT by July 1, 1984. However, EPA has been slow to formulate the BAT standards and is not expected to finish issuing them until that date. Industries will then need some time to comply with the guidelines. No one disputes the need to extend BAT deadlines; the question is the length of the extension.

One of the questions in the Harris public opinion poll was specifically designed to measure the public's commitment to BAT. After the 1977 amendment requiring BAT was explained to them, fully 53 percent of those surveyed felt so strongly about the need to control and prevent water pollution that they were willing to accept plants being shut down rather than allow plants waivers or variances from the BAT requirement. An additional 23 percent believed that only a plant which would otherwise have to close down should be granted a variance from BAT.

Every year of delay in the implementation of BAT will result in about 100 million pounds of excess toxic wastes being discharged into the nation's waters. Deciding the length of the delay of deadlines therefore has a significant impact on the evironment and public health. The EPA is issuing BAT regulations according to a phased schedule from January 1981 to June 1984.

The Sierra Club supports H.R. 3282, which allows industry three years to comply with BAT from the date the regulations are issued. Representatives from EPA and several industries have testified that three years allows sufficient time for compliance. H.R. 2305 would allow needless extensions beyond three years in many cases which we oppose.

The Sierra Club strongly opposes exemptions or variances from BAT requirements. Congress rejected the idea of variances in 1977, and they are no more justified in 1983. Chemical industry representatives have argued that they should not be required to implement BAT when water quality standards are being met. This argument is not credible because, at present, the water quality standards of most states do not even have criteria for many frequently found toxic pollutants. Particularly in the area of toxic pollutants, we should err on the side of caution. A program of BAT variances would inevitably increase hazards to public health.

I will conclude by reiterating the Sierra Club's support for H.R. 3282. We believe it provides a sound basis for renewal of the Clean Water Act. We and other representatives of the environmental community will be perpared to provide more detailed testimony and information at the additional hearings on this subject planned by this Committee.

Study No. 822033

A SURVEY OF AMERICAN ATTITUDES TOWARD WATER POLLUTION

Prepared for

The Natural Resources Council of America

December 1982

Conducted by

Louis Harris and Associates, Inc.

20-955 O—84——16

A WORD ABOUT THIS STUDY

The purpose of this study was to determine the set of attitudes of the American public on the conservation of water resources. Of necessity, a major part of the focus was to measure and to analyze how concerned people are about water pollution and the role of governmental efforts to clean it up. Such areas as water pollution by toxic substances from factories, water pollution by industry, disposal of hazardous waste, contaminated drinking water, water shortages, pollution of lakes and rivers by sewage all were probed in considerable depth.

Yet, another central focus was on the renewal of the Clean Water Act, which must come up for consideration in 1983 in the Congress -- whether current water pollution standards are too protective or not protective enough, whether the original Act should be made less strict or more strict.

Specifically, the study dealt with central problems of the best available system requirements now in the law. Questions were asked if all factories should be required to install the best anti-pollution systems available or only the best affordable system, or allowing a best available technology (BAT) exception if a company might face a shutdown if required to abide by current BAT standards. Trade-offs were asked about BAT requirements vs. sewer jobs, the implications of BAT requirements in health terms vs. losing jobs, shutting down plants, or forcing companies to lose money.

Finally, the issue of keeping the deadline for BAT conformity to the original 1984 or extending it to 1987 was tested. The question of putting cost limits and constraints on water pollution clean-up efforts was dealt with in considerable depth.

In the area of drinking water, the public was asked to assess the safety of its own supply, whether water in their own area was getting safer, and whether cost considerations should be taken into account in dealing with contaminants of water supplies.

People were also asked about the necessity of making a trade-off between economic recovery and jobs for the unemployed, on the one hand, and keeping a tough program of cleaning up water pollution on the other. A test was conducted to determine how much more in taxes people are prepared to pay in order to make sure streams, lakes and rivers are kept clean and safe.

Another key area of inquiry dealt with federal wetlands policies and laws, the importance of preserving wetlands, and making current laws stricter or less strict. In the case of wetlands policy and general enforcement of anti-pollution standards or water, people were asked whom they trust more -- federal or state and local government.

Finally, measurements were taken on the involvement of people in fishing, swimming, sailing or boating, hunting, and just spending time near streams, lakes, or rivers. People were also asked about their membership in and contributions to environmental organizations.

In its planning and execution, this study was conducted from June through November, 1982. Two samples of 1,253 and 1,250 adults were used to ask the full roster of questions. Both samples were drawn on identical terms,

using telephone probability samples in which each residential household in the country had an equal chance of being drawn in the sample. Respondents in each household were selected on a random basis, so that each adult would have an equal chance of participating in the survey. A minimum of four call-backs were made for each person selected in the sample, as a means of recovering over 90% of the originally drawn probability sample.

This survey was paid for jointly by the Rockefeller Brothers Fund, the Natural Resources Council of America, and the American Fishing Tackle Manufacturers' Association.

1. ATTITUDES TOWARD WATER POLLUTION

Pollution and the Quality of Life

Since 1976, the Harris firm has asked the American people how important a variety of factors are in improving the quality of life in the United States. Not surprisingly, controlling crime and curbing inflation have regularly come out on top of the list. But curbing water pollution has also always been rated "very important" by 70 percent or more of the public, and this year is no exception. Indeed, the 74 percent who now say that "curbing water pollution" is a very important quality of life issue is identical to the proportion who say that "keeping the economy growing" is very important, and higher than the importance given to curbing air pollution, making products and services safer, and producing more energy.

Observation:

By any measure, the issue of water pollution control has a high priority among the American people. Any contention that it is a peripheral or side issue with the public simply is a mistaken claim.

The following table gives a full run-down on all of the issues asked of the cross-section:

IMPORTANCE OF VARIOUS FACTORS IN
IMPROVING THE QUALITY OF LIFE IN AMERICA

Q.: I would like to read you some factors that can affect the quality of life in this country. As far as you are personally concerned, for each of these, would you tell me if it is very important in making the quality of life better, only somewhat important, or hardly important at all in making the quality of life better?

BASE: 1253	VERY IMPORTANT %	ONLY SOMEWHAT IMPORTANT %	HARDLY IMPORTANT AT ALL %	NOT SURE %
CONTROLLING CRIME	93	6	*	1
CURBING INFLATION	83	15	1	1
BRINGING INTEREST RATES DOWN	79	18	2	1
CURBING WATER POLLUTION	74	22	3	1
KEEPING THE ECONOMY GROWING	74	20	3	3
CURBING AIR POLLUTION	72	24	4	*
MAKING PRODUCTS AND SERVICES SAFER	68	27	4	1
PRODUCING MORE ENERGY	65	27	5	3

*LESS THAN 0.5%.

Concern Over Specific Environmental Problems

The overall concerns people have about air and water pollution control finds specific application in a whole roster of specific worries:

-- By 95-4%, people feel that disposal of hazardous wastes is a serious problem in America.

-- By 93-6%, an almost identical majority feels that pollution of lakes and rivers by toxic substances from factories is a serious national problem.

-- By 88-10%, another sizable majority views pollution of lakes and rivers by sewage as a serious problem in this country.

-- By 84-14%, a big majority feel that contaminated drinking water is a serious national problem.

-- By 88-11%, a decisive majority believe that air pollution by industry generally is a serious problem in this country.

-- By 73-24%, a clear majority feel that water shortages are a serious problem in America.

-- By 80-18%, a substantial majority is convinced that air pollution by trucks and automobiles is a serious national problem.

-- By 70-25%, a majority feel that air pollution by coal-burning electric power plants is a serious problem in the nation.

-- By 61-28%, most Americans feel that damage to the landscape by coal strip mining constitutes a serious national problem.

Observation:

By clear margins, solid majorities of the American people view all nine of the environmental issues tested as serious problems. Whether tested generally or specifically, concern over the environment must be viewed as high. Four of the nine emerge as particularly urgent and serious: disposal of hazardous wastes (seen as "very serious" by 74%), pollution of lakes and rivers by toxic substances from factories ("very serious" to 65%), pollution of lakes and rivers by sewage ("very serious" to 62%), and contaminated drinking water ("very serious" to 56%).

The survey asked the following question:

SERIOUSNESS OF VARIOUS ENVIRONMENTAL PROBLEMS

Q.: I'm going to read you some different kinds of environmental problems. For each of these would you please tell me if it is currently a very serious problem, a somewhat serious problem, only a small problem, or no problem at all in this country.

BASE: 1253	VERY SERIOUS %	SOMEWHAT SERIOUS %	ONLY A SMALL PROBLEM %	NO PROBLEM AT ALL %	NOT SURE %
DISPOSAL OF HAZARDOUS WASTES	74	21	4	*	1
POLLUTION OF LAKES AND RIVERS BY TOXIC SUBSTANCES FROM FACTORIES	65	28	5	1	1
POLLUTION OF LAKES AND RIVERS BY SEWAGE	62	26	8	2	2
CONTAMINATED DRINKING WATER	56	28	12	2	2
AIR POLLUTION BY INDUSTRY	49	39	10	1	1
WATER SHORTAGES	36	37	17	7	3
AIR POLLUTION BY TRUCKS AND AUTOMOBILES	33	47	15	3	2
AIR POLLUTION BY COAL-BURNING ELECTRIC POWER PLANTS	27	43	21	4	5
DAMAGE TO THE LANDSCAPE BY COAL STRIP-MINING	26	35	21	7	11

*LESS THAN 0.5%.

Significantly, all nine of the environmental problems are viewed as basic national concerns of the American people. Toxic waste pollutants anywhere in the U.S. obviously are thought to be a frightening problem of national concern. The survey asked about four of the problem in the areas where people themselves live. A substantial 46% feel pollution of lakes and rivers where they live as a serious problem, 44% feel pollution of lakes and rivers by toxic substances is serious in their area, 33% report being worried that their own drinking water is contaminated, and 28% believe they are beset with water shortages in their area.

Observation:

The fact that minorities see these problems as serious in their area should not be taken to mean that the problems are therefore not serious for the nation. Obviously, when problems as serious as these are believed to exist in their home areas, then it is a matter requiring urgent attention. The real worry people have is a sense of shock that they exist anywhere in the U.S. and the overhanging concern that their area could be afflicted by them.

In addition, when asked if over the past ten years their own streams, lakes, and rivers are more or less polluted, a 46% plurality report they are more polluted, only 17% less, and 30% the same. When asked how they will be ten years hence, 44% think their own streams, lakes, and rivers will be more polluted, only 17% believe they will be less polluted, while 34% anticipate no real change.

Observation:

These results can only underscore the concern the American people have that the streams, rivers, and lakes where they live are threatened and strict environmental measures must be taken to keep them clean or to clean them up.

2. THE CLEAN WATER ACT: AN OVERVIEW

The Clean Water Act (officially known as the Federal Water Pollution Control Act) was passed in 1972, amended in 1977, and is subject to reauthorization (and possible amendment) this year and next. The Act establishes national water quality standards and various requirements for cities, towns, and industries to meet these standards. What follows is an attempt to measure public sentiment toward major provisions of the Act and major changes that have been proposed for the Act. This survey and analysis should not be viewed as a compilation of the public's answers to questions that require technical expertise or detailed knowledge. Rather, it should be regarded as a measurement of the strength of the public's commitment to cleaning up and preventing water pollution.

Perception of Current Federal Water Pollution Standards

When asked to rate existing federal water pollution standards, 46 percent of the public say they are "not protective enough," 41 percent say they are "just about right," and only a small 6 percent rate them "overly protective." This clear sentiment for strict water pollution standards is also reflected in public attitudes toward the Clean Water Act specifically. Although those surveyed were asked to consider "the costs involved in cleaning up the environment," a 60 percent majority nonetheless insisted that "Congress

should make the Clean Water Act stricter than it is now." Thirty-four percent feel Congress should keep the Act "about the same," and an almost nonexistent 3 percent want it made "less strict." Thus, an almost unanimous 94-3 percent of the American people believe the Clean Water Act should be kept as it is or made even stricter. Above all, they do not want the Act made less strict.

The following questions were asked:

PROTECTIVENESS OF FEDERAL WATER POLLUTION STANDARDS

Q.: Do you think that federal water pollution standards are overly protective of people's health, not protective enough, or just about right?

	1982 %	1981 %
OVERLY PROTECTIVE	4	6
NOT PROTECTIVE ENOUGH	59	48
JUST ABOUT RIGHT	34	43
NOT SURE	3	13

CHANGING THE CLEAN WATER ACT

Q.: This year Congress will reconsider the Clean Water Act. Given the costs involved in cleaning up the environment, do you think Congress should make the Clean Water Act stricter than it is now, keep it about the same, or make it less strict?

	1982 %	1981 %
MAKE IT STRICTER	60	52
KEEP IT ABOUT THE SAME	34	41
MAKE IT LESS STRICT	3	4
NOT SURE	3	3

A Key Goal of the Clean Water Act

One of the stated goals of the Clean Water Act is to make the nation's waters "fishable and swimmable" by 1983. While virtually no experts believe this goal can be met in the immediate future, there is disagreement over whether such a goal is ultimately realistic and achievable. As far as the public is concerned, however, the answer is clear. Asked to consider "the high cost of cleaning up the nation's waters," an overwhelming 78 percent majority of the public nonetheless believe that "America's waters can really be made safe for fishing and swimming," while only 17 percent "don't really think that can be done." This represents an article of faith that American technology and know-how can solve the problem of water pollution, and also implicitly demonstrates the public's commitment to the goal of making all of America's lakes and rivers fishable and swimmable.

Observation:

By any measure, there can be little doubt from these results of the determination and insistence of the American people to sustain and to continue the Clean Water Act. Any easing or weakening of the Act will be viewed as a violation of a clearly expressed public mandate.

3. THE BEST-AVAILABLE-TECHNOLOGY REQUIREMENT

The Public Commitment to BAT

One of the 1977 amendments to the Clean Water Act specifies that factories must install the best available pollution control technology (BAT) by 1984. Some industries would like to change the Act so that the government could grant waivers or variances from the BAT requirement under certain circumstances. Although the BAT requirement is complex, it is possible to measure the public's basic commitment to this requirement. Those surveyed were asked to consider the high cost of the BAT requirement, and then given a choice as to how strictly the government should enforce it.

The cross-section was asked:

ATTITUDES TOWARD THE BAT REQUIREMENT

Q.: The Clean Water Act now requires factories to install the latest, most effective systems available to clean up their toxic pollutants. Given the high cost of meeting this requirement, which one of the following policies do you think the government should follow?

	%
REQUIRE ALL FACTORIES TO INSTALL THE BEST ANTI-POLLUTION SYSTEMS AVAILABLE	53
REQUIRE ALL FACTORIES TO INSTALL THE BEST ANTI-POLLUTION SYSTEM AVAILABLE, EXCEPT THOSE FACTORIES WHICH WOULD BE FORCED TO SHUT DOWN AS A RESULT	23
REQUIRE ALL FACTORIES TO INSTALL THE BEST ANTI-POLLUTION SYSTEMS THEY SAY THEY CAN AFFORD	21
NOT SURE	3

Fully 53 percent of those surveyed -- a majority of the American people -- feel so strongly about the need to control and prevent water pollution that they are willing to endure factories being shut down and people thrown out of work rather than allow factories waivers or variances from the BAT requirement. An additional 23 percent believe that only a factory which would otherwise have to close down should be granted a variance from BAT. Only 21 percent are willing to allow businesses to decide for themselves what pollution control systems they can afford -- a sign of both public mistrust of business and a strong commitment to strict anti-pollution requirements.

Rather than rely on the results of the single question mentioned above, the survey went further and forced people to make a direct choice between strict BAT requirements and jobs. When asked, "Do you think factories should be required to install the best anti-pollution systems available even if this meant that fewer jobs would be available, or not?", a clear 65-27 percent majority said BAT should still be required. In the Midwest, hardest hit by the current recession, a slightly lower 59-33 percent favor keeping BAT over jobs. In the West, an overwhelming 75-18 percent oppose BAT variances even when jobs will be lost. People of all income groups favor strict BAT enforcement over jobs by margins of 2 to 1 or more. Union members come down on the side of BAT by 65-28 percent, and skilled laborers opt for BAT by 73-21 percent.

The survey then tested the trade-off yet a third time, offering people a choice between waiving BAT for toxic pollutants or causing the company involved to lose money, shut down the factory, and lay off workers. By an overwhelming 86-12 percent, people said that the waiver or variance should not be granted. Where toxic pollutants are concerned, the American people thus

say they are willing to sacrifice factories and jobs in order to keep the water clean and safe.

The 1977 amendments to the Clean Water Act require all industries to be in compliance with BAT standards by 1984. However, to date the government has only issued a few of these industry standards, and virtually all experts agree that the deadline must be extended -- to 1987 or 1988 at least -- in order to give the Environmental Protection Agency more time to research and set BAT standards, and in order to give industry time to comply with the new regulations. Nonetheless, the public opposes, by 57-37 percent, extending the deadline to 1987.

Observation:

This opposition should not be interpreted as an unreasonable demand made by an uninformed populace. Rather, it is a measure of the strong feeling that exists throughout the country for immediate action against water pollution. People clearly want the government to act as quickly as possible in setting BAT standards, and they are not willing to give industry much time at all to comply with the regulations.

4. COST-BENEFIT ANALYSIS

Opposition to Requiring Cost-Benefit Analysis

The Clean Water Act, unlike the Clean Air Act, does permit the government to consider costs when setting water pollution standards for industries and municipalities. However, some industries have proposed that the Act be changed so as to require more strict cost-beneift analysis before the government issues standards. The public, by 74-23 percent, opposes such a change in the Clean Water Act:

OPPOSITION TO COST-BENEFIT ANALYSIS

Q.: Some people feel that the government should not order industries to clean up their water pollution unless it can be shown that the benefits of the cleanup justify the costs involved. Others disagree and say the value of eliminating unsafe pollutants in water can't be measured in dollars. Would you favor changing the Clean Water Act so that the government couldn't order an industry to clean up its water pollution if the cost didn't justify it, or would you oppose such a change in the Clean Water Act?

	TOTAL PUBLIC
	%
OPPOSE CHANGING	74
FAVOR CHANGING	23
NOT SURE	3

This opposition runs fairly even across all regions, income groups, occupations, and political parties.

The key to the unwillingness of the public to make trade-offs on the Clean Water Act lies in the answer to another question asked in this survey: "In order to get the economy moving again and to ease unemployment, do you think it is necessary to slow down the rate at which we clean up water pollution, or do you think we can get the economy going again and also clean up water pollution?" An overwhelming 89-6% of the public feels we need not sacrifice anti-pollution efforts to help the economy improve, up from a 64-22% margin who felt the same way in response to a similar question asked during the last major recession in 1975. This means that the public by and large does not believe that a straight trade-off between economic growth and pollution control efforts is necessary or even real. Most Americans see no reason on the whole why American technology cannot accomplish both at the same time.

Observation:

The public is saying that they are not adamantly opposed to allowing the government to consider the costs of anti-pollution standards. But if cost-benefit analysis in any way results in more water pollution, then the public will strenuously oppose such consideration of costs.

20-955 O—84——17

5. SAFE DRINKING WATER

Perceptions of the Safety of Drinking Water Supplies

Although 33 percent of the public report that their area has a serious drinking water safety problem, most people are not worried about the drinking water in their own home: 50% say it is "very safe to drink," 42% "pretty safe," only 5% rate it "not very safe," and a small 2% say it is "not safe to drink at all." Fifty-nine percent of those who get their water from a well rate it very safe to drink, while 47% of those whose water comes from a municipal water system rate their water "very safe."

The public nationwide was asked:

SAFETY OF LOCAL DRINKING WATER

Q.: Now I'd like to ask you some questions about the water that comes out of the tap or faucet in your home. How would you rate the drinking water in your area -- would you say it's very safe to drink, pretty safe, not very safe, or not safe to drink at all?

	TOTAL PUBLIC %	SOURCE OF WATER: WELL %	SOURCE OF WATER: MUNICIPAL WATER SYSTEM %
VERY SAFE	50	59	47
PRETTY SAFE	42	34	46
NOT VERY SAFE	5	4	5
NOT SAFE AT ALL	2	1	2
NOT SURE	1	2	1

People are relatively confident that the drinking water in their area will remain safe for years to come. When asked to predict what their drinking water will be like in ten years, 63 percent think it will be "about as safe as it is today," 12 percent are confident it will be "safer than it is today," while 22 percent worry it will not be "as safe as it is today."

The Safe Drinking Water Act, as the Clean Water Act, is up for reauthorization in Congress this year. The Act requires that states meet national standards for drinking water purity. Currently, the federal Environmental Protection Agency (EPA) is required to regulate all contaminants that "may have any adverse effect on health." Legislation has been introduced in Congress to change this provision so that EPA may only regulate those contaminants that present "an unreasonable risk" to human health. We asked the public to consider the costs involved in the current law, and gave them a choice between the existing provision and the proposed change in the Safe Drinking Water Act. The result: by 65-33%, a 2 to 1 majority want to keep the law in its present form, regardless of the cost of meeting the existing requirements.

The cross-section was asked:

OPPOSITION TO CHANGING THE SAFE DRINKING WATER ACT

Q.: When it comes to making sure that water is safe to drink, which one of the following statements comes closer to your own point of view?

	%
CONTAMINANTS IN DRINKING WATER SUPPLIES OUGHT TO BE CLEANED UP IF THERE IS ANY CHANGE THAT THEY WILL BE DANGEROUS TO HUMAN HEALTH, REGARDLESS OF THE COST	65
CONTAMINANTS IN DRINKING WATER SUPPLIES OUGHT TO BE CLEANED UP ONLY IF THEY ARE CLEARLY DANGEROUS TO HUMAN HEALTH	33
NOT SURE	2

Observation:

In many ways, public attitudes about the Safe Water Act symbolize the fail-safe public demand that dominates across the country. Drinking water is obviously a precious commodity and even though over 9 in 10 think their supply is reasonable safe, they simply want to take no chances with contaminants of any kind that might be dangerous to human health, "regardless of cost." Basically, they want to lean over backwards and to take no chances where human health is involved. Any provision that requires proof of "clear danger" will meet with stiff public resistance.

6. THE COST OF CLEAN WATER

The Cost of the Clean Water Act

By 1987, the federal government estimates that the total cost of compliance with the current standards of the Clean Water Act will be $20.4 billion -- which works out to somewhat less than $100 for every person in the country. Obviously individuals do not bear the full cost of water pollution clean-up efforts, but consumers and taxpayers ultimately do end up paying much of the cost through higher prices in products and higher taxes. Thus, one can hear someone saying, "It's all well and good that the public wants strict anti-pollution laws and regulations, but if they aren't willing to foot the bill for these efforts, they can hardly expect to see the government keep existing laws and regulations as tough as they are now." "Furthermore," one might add, "it's easy for people to say that they are willing to see sacrifices made for the sake of cleaner water -- but they'd feel differently if they knew it meant money coming out of their pockets."

These possible views were taken into account, and people were bluntly asked if they would be willing to pay $100 a year more in taxes and higher prices for clean and safe water.

By 70-26 percent, a large majority of the American people said they'd pay the extra $100. As expected, there were differing answers according to the income of the person being interviewed -- but sizable majorities of every income, age, and occupation group said they would pay the cost of cleaning up water pollution.

WILLINGNESS TO PAY THE COST OF CLEAN WATER

Q.: Consumers and taxpayers end up paying the cost of cleaning up water pollution through higher prices on products and higher taxes. I'd like to know how much you might be willing to pay to clean up water pollution. In order to make sure that your drinking water and the streams, lakes and rivers in your area are clean and safe, would you be willing to pay 100 dollars a year more in taxes and higher prices, or not?

	YES, WOULD PAY %	NO, WOULD NOT PAY %	NOT SURE %
TOTAL PUBLIC	70	26	4
$7,500 OR LESS	54	41	5
$7,501 - $15,000	66	31	3
$15,001 - $25,000	73	24	3
$25,001 - $35,000	75	21	4
$35,001 AND OVER	84	14	2
FISHERMEN (38%)	75	23	1
SWIMMERS (40%)	77	22	1
SAILORS (42%)	77	21	2
HUNTERS (11%)	76	23	1
OTHER RECREATIONAL WATER USERS (72%)	76	22	2

Not surprisingly, people who go fishing, swimming, sailing, or hunting in or near lakes and rivers are even more willing to pay the cost of clean water than the rest of the public.

The 26 percent of the public who were not willing to pay $100 were also asked about how much more per year in taxes and higher prices they would be willing to pay to make sure their drinking water and the lakes and rivers in their area would be clean and safe. Only 11 percent of the total public said it wouldn't pay anything at all, while most of the remainder volunteered to pay various amounts in the $1-$50 range. Clearly, the public is saying it is willing to foot an even higher bill for the Clean Water Act as it now stands.

7. THE PUBLIC ASSESSES THE WETLANDS

When the 70 million acres of wetlands in the country were described to the public and the ecological balance role of wetlands were presented to the national cross-section, 83% nationwide said that it is "very important" to "keep the remaining wetlands free from further destruction."

A substantial 69% want federal standards for preserving wetlands made "more strict" and 22% want them kept as they are. Only 3% feel such standards should be made "less strict." Thus, by 91-3%, an overwhelming majority in general does not want any easing of standards for wetlands.

When asked whom they would trust more to maintain strict standards for preserving the nation's wetlands -- government officials at the federal level or those at the state and local level -- the result was a stand-off: 48-48%.

Observation:

Clearly, when the wetlands are explained to people, an overwhelming majority of the public nationwide wants them preserved and wants no easing of federal standards over their fate. One would think, therefore, that in turn, the public would favor continuance and even strengthening of federal authority. However, the flatfooted 48-48 percent tie on trusting federal officials or their state and local counterparts raises some interesting further questions.

For many years, it has been assumed in the environmental area that advocacy of federal authority on standards and enforcement meant standing for tough and strict rules governing pollution. Advocacy for state and local control, favored by many industry groups and those who opposed the Clean Air and Clean Water Acts, was taken to mean more variable standards and more diffused enforcement.

In this survey, these assumptions may well be cast in doubt. For example, by 55-41%, men who are less inclined toward tougher environmental controls, favor federal rather than state and local enforcement of wetlands standards. On the other hand, women, who are much more pro-environmental controls, favor state and local control by 56-40%. Conservatives favor federal controls, while moderates favor state and local control over wetlands. People in the South, where environmental concerns are not as high as in other regions, favor federal enforcement, while people in the West, where support for tough environmental standards is highest, support state and local control by 51-43%.

The answer obviously lies in the perceived changing role of the federal government under the Reagan administration, most particularly the stands of Interior Secretary James Watt, and EPA Administrator Anne Gorsuch. Both are widely viewed as wanting to ease strict enforcement of environmental controls. Indeed, when voters were asked who would better protect the environment, Democrats win over Republicans by 64-20%.

It is evident that the American people want strict environmental controls, but also are fearful that those now vested with responsibility over setting and enforcing standards are quite dedicated to doing just the opposite. In turn, this has mooted and clouded any clear-cut choice in the federal vs. state and local control issue. Obviously, the public would like to have continuation of federal controls but is worried that those now in authority will not enforce either the spirit or the letter of the law.

8. DIVISIONS OVER CLEAN WATER

Group Differences on Water Pollution Concerns

The results to most of the questions in this survey reveal strong support across all demographic groups for existing strict water pollution controls and standards. But there are some subgroups which -- when compared with the total public -- are consistently more concerned about environmental problems, more supportive of strict standards and controls, and less willing to trade cleaner water in for jobs or economic growth. Specifically, in their responses to virtually every question in this survey, women take a stronger pro-environment position than men, city residents are more pro-environment than suburban and rural residents, blacks more pro-environment than whites, Democrats more pro-environment than Republicans, and Westerners more pro-environment than Southerners, Midwesterners, and -- on many questions -- Easterners. Younger people tend to be more supportive of strict environmental controls than older people, but their differences with their elders are not nearly as great as the differences between the groups mentioned above.

That blacks take a stronger pro-environment position than whites is not so surprising, given that the majority of blacks are city dwellers, and cities tend to have more environmental problems than rural ones. Most blacks and more city residents are Democrats, partially explaining the difference between Democrats and Republicans. But the differences between Westerners and others, and between women and men, are significant. Westerners feel strongly about these issues in all likelihood because many of them are accustomed to wide open spaces and exposure to their natural environment. They are deeply "conservative" on environmental issues in that they clearly want to conserve the beauty and pristine quality of their natural surroundings. Women are more concerned about the environmental in part as a "quality of life" issue. Twelve percent more women than men think curbing water pollution is "very important" in improving the quality of life in this country, and women are far more concerned than men are about a whole host of environmental problems asked about in this survey.

TABLE 1

IMPORTANCE OF VARIOUS FACTORS IN
IMPROVING THE QUALITY OF LIFE IN AMERICA

Q.: I would like to read you some factors that can affect the quality of life in this country. As far as you are personally concerned, for each of these, would you tell me if it is very important in making the quality of life better, only somewhat important, or hardly important at all in making the quality of life better?

	VERY IMPORTANT %	ONLY SOMEWHAT IMPORTANT %	HARDLY IMPORTANT AT ALL %	NOT SURE %
TOTAL PUBLIC				
CONTROLLING CRIME	93	6	*	1
CURBING INFLATION	83	15	1	1
BRINGING INTEREST RATES DOWN	79	18	2	1
CURBING WATER POLLUTION	74	22	3	1
KEEPING THE ECONOMY GROWING	74	20	3	3
CURBING AIR POLLUTION	72	24	4	*
MAKING PRODUCTS AND SERVICES SAFER	68	27	4	1
PRODUCING MORE ENERGY	65	27	5	3

*LESS THAN 0.5%.

TABLE 2

SERIOUSNESS OF VARIOUS ENVIRONMENTAL PROBLEMS

Q.: I'm going to read you some different kinds of environmental problems. For each of these would you please tell me if it is currently a very serious problem, a somewhat serious problem, only a small problem, or no problem at all in this country.

	VERY SERIOUS %	SOMEWHAT SERIOUS %	ONLY A SMALL PROBLEM %	NO PROBLEM AT ALL %	NOT SURE %
TOTAL PUBLIC					
DISPOSAL OF HAZARDOUS WASTES	74	21	4	*	1
POLLUTION OF LAKES AND RIVERS BY TOXIC SUBSTANCES FROM FACTORIES	62	28	5	1	1
POLLUTION OF LAKES AND RIVERS BY SEWAGE	62	26	8	2	2
CONTAMINATED DRINKING WATER	56	28	12	2	2
AIR POLLUTION BY INDUSTRY	49	39	10	1	1
WATER SHORTAGES	36	37	17	7	3
AIR POLLUTION BY TRUCKS AND AUTOMOBILES	33	47	15	3	2
AIR POLLUTION BY COAL-BURNING ELECTRIC POWER PLANTS	27	43	21	4	5
DAMAGE TO THE LANDSCAPE BY COAL STRIP-MINING	26	35	21	7	11

TABLE 3

HOW SERIOUS PROBLEMS ARE WHERE PEOPLE LIVE

Q.: In just your area, would you say (READ EACH ITEM) is a very serious problem, a somewhat serious problem, only a small problem, or no problem at all?

	SERIOUS PROBLEM %	NOT SERIOUS PROBLEM %	NOT SURE %
TOTAL PUBLIC			
POLLUTION OF LAKES AND RIVERS BY SEWAGE	46	51	3
POLLUTION OF LAKES AND RIVERS BY TOXIC SUBSTANCES FROM FACTORIES	44	53	3
CONTAMINATED DRINKING WATER	33	66	1
WATER SHORTAGES	28	71	1

TABLE 4

POLLUTION OF STREAMS, LAKES, RIVERS
WHERE YOU LIVE, COMPARED WITH TEN YEARS AGO

Q.: Compared to ten years ago, would you say the streams, lakes, and rivers in your area are more polluted than they were, less polluted, or about the same as they were then?

	MORE POLLUTED %	LESS POLLUTED %	ABOUT THE SAME %	NOT SURE %
NATIONWIDE	46	19	30	5
BY REGION				
EAST	43	28	21	8
MIDWEST	39	20	37	4
SOUTH	49	16	30	5
WEST	53	9	31	7
BY SEX				
MEN	40	25	30	5
WOMEN	51	14	29	6

TABLE 5

ESTIMATE OF POLLUTION OF STREAMS, LAKES, RIVERS WHERE PEOPLE LIVE IN NEXT 10 YEARS

Q.: Ten years from now, do you think the streams, lakes, and rivers in your area will be more polluted than they are now, less polluted, or about the same as they are now?

	MORE POLLUTED %	LESS POLLUTED %	ABOUT THE SAME %	NOT SURE %
NATIONWIDE	44	17	34	5
BY REGION				
EAST	38	25	30	7
MIDWEST	39	19	40	2
SOUTH	48	14	34	4
WEST	52	10	34	4
BY SEX				
MEN	41	19	36	4
WOMEN	47	16	33	5

TABLE 6

PROTECTIVENESS OF FEDERAL WATER POLLUTION STANDARDS

Q.: Do you think that federal water pollution standards are overly protective of people's health, not protective enough, or just about right?

	TOTAL PUBLIC 1982 %	TOTAL PUBLIC 1981 %
OVERLY PROTECTIVE	4	6
NOT PROTECTIVE ENOUGH	59	48
JUST ABOUT RIGHT	34	43
NOT SURE	3	13

TABLE 7

CHANGING THE CLEAN WATER ACT

Q.: This year Congress will reconsider the Clean Water Act. Given the costs involved in cleaning up the environment, do you think Congress should make the Clean Water Act stricter than it is now, keep it about the same, or make it less strict?

	TOTAL PUBLIC	
	1982	1981
	%	%
MAKE IT STRICTER	60	52
KEEP IT ABOUT THE SAME	34	41
MAKE IT LESS STRICT	3	4
NOT SURE	3	3

TABLE 8

GIVEN HIGH COST OF CLEAN UP, CAN AMERICA'S WATERS REALLY BE MADE SAFE FOR FISHING AND SWIMMING?

Q.: The Clean Water Act, which is now ten years old, sets up national water quality standards and requires cities, towns, and industries to meet these standards. One of the goals of the Act is to make all of America's lakes and rivers safe for fishing and swimming. Given the high cost of cleaning up the nation's waters, do you think America's waters can really be made safe for swimming and fishing, or don't you really think that can be done?

	TOTAL PUBLIC
	%
CAN BE DONE	78
CAN'T BE DONE	17
NOT SURE	5

TABLE 9

ATTITUDES TOWARD THE BAT REQUIREMENT

Q.: The Clean Water Act now requires factories to install the latest, most effective systems available to clean up their toxic pollutants. Given the high cost of meeting this requirement, which one of the following policies do you think the government should follow?

	TOTAL PUBLIC %
REQUIRE ALL FACTORIES TO INSTALL THE BEST ANTI-POLLUTION SYSTEMS AVAILABLE	53
REQUIRE ALL FACTORIES TO INSTALL THE BEST ANTI-POLLUTION SYSTEMS AVAILABLE, EXCEPT THOSE FACTORIES WHICH WOULD BE FORCED TO SHUT DOWN AS A RESULT	23
REQUIRE ALL FACTORIES TO INSTALL THE BEST ANTI-POLLUTION SYSTEMS THEY SAY THEY CAN AFFORD	21
NOT SURE	3

TABLE 10

SHOULD BAT BE REQUIRED EVEN IF IT MEANT FEWER JOBS AVAILABLE?

Q.: Do you think factories should be required to install the best anti-pollution systems available even if this meant that fewer jobs would be available, or not?

	TOTAL PUBLIC %
SHOULD STILL BE REQUIRED	65
SHOULD NOT STILL BE REQUIRED	27
NOT SURE	8

TABLE 11

EXCEPTION TO FACTORY POLLUTION DANGEROUS TO HUMAN HEALTH

Q.: Do you think a factory whose pollution is clearly dangerous to human health should be granted an exception from this requirement for any reason -- such as that jobs will be lost, the factory will have to shut down, or the company will lose money -- or should a factory whose pollution is clearly dangerous to human health be strictly required to install the best anti-pollution systems available?

	TOTAL PUBLIC %
SHOULD BE GRANTED AN EXCEPTION	15
SHOULD NOT BE GRANTED AN EXCEPTION	81
NOT SURE	4

TABLE 12

DEADLINE FOR BAT REQUIREMENT: 1984 OR 1987?

Q.: The Clean Water Act currently requires industry to install the best available systems to clean up the water by 1984. However, the government has not yet told most industries what systems to use. What do you think should be done about the deadline -- should it be left at 1984, as the present law requires, or should it be extended to 1987, as industry proposes?

	TOTAL PUBLIC %
LEAVE AT 1984	57
EXTEND TO 1987	37
NOT SURE	6

TABLE 13

OPPOSITION TO COST-BENEFIT ANALYSIS

Q.: Some people feel that the government should not order industries to clean up their water pollution unless it can be shown that the benefits of the cleanup justify the costs involved. Others disagree and say the value of eliminating unsafe pollutants in water can't be meausred in dollars. Would you favor changing the Clean Water Act so that the government couldn't order an industry to cleanup its water pollution if the cost didn't justify it, or would you oppose such a change in the Clean Water Act?

	TOTAL PUBLIC
	%
OPPOSE CHANGING	74
FAVOR CHANGING	23
NOT SURE	3

TABLE 14

NECESSARY TO SLOW DOWN CLEAN-UP OF WATER POLLUTION

Q.: In order to get the economy moving again and to ease unemployment, do you think it is necessary to slow down the rate at which we clean up water pollution, or do you think we can get the economy going again and also clean up water pollution?

	TOTAL PUBLIC	
	1982	1975
	%	%
SLOW DOWN POLLUTION CLEANUP	6	22
CAN DO BOTH	89	64
NOT SURE	5	14

20-955 O—84——18

TABLE 15

SAFETY OF LOCAL DRINKING WATER

Q.: Now I'd like to ask you some questions about the water that comes out of the tap or faucet in your home. How would you rate the drinking water in your area -- would you say it's very safe to drink, pretty safe, not very safe, or not safe to drink at all?

	TOTAL PUBLIC %	SOURCE OF WATER: WELL %	SOURCE OF WATER: MUNICIPAL WATER SYSTEM %
TOTAL PUBLIC			
VERY SAFE	50	59	47
PRETTY SAFE	42	34	46
NOT VERY SAFE	5	4	5
NOT SAFE AT ALL	2	1	2
NOT SURE	1	2	1

TABLE 16

SAFETY OF WATER TEN YEARS FROM NOW

Q.: Ten years from now, do you think the drinking water in your area will be safer than it is today, not as safe, or about as safe to drink as it is today?

	TOTAL PUBLIC %
SAFER THAN IT IS TODAY	12
NOT AS SAFE AS IT IS TODAY	22
ABOUT AS SAFE AS IT IS TODAY	63
NOT SURE	3

TABLE 17

RISK WILLING TO TAKE ON WATER SUPPLIES

Q.: When it comes to making sure that water is safe to drink, which one of the following statements comes closer to your own point of view?

	TOTAL PUBLIC %
CONTAMINANTS IN DRINKING WATER SUPPLIES OUGHT TO BE CLEANED UP IF THERE IS ANY CHANCE THAT THEY WILL BE DANGEROUS TO HUMAN HEALTH, REGARDLESS OF THE COST	65
CONTAMINANTS IN DRINKING WATER SUPPLIES OUGHT TO BE CLEANED UP ONLY IF THEY ARE CLEARLY DANGEROUS TO HUMAN HEALTH	33
NOT SURE	2

TABLE 18

WILLINGNESS TO PAY THE COST OF CLEAN WATER

Q.: Consumer and taxpayers end up paying the cost of cleaning up water pollution through higher prices on products and higher taxes. I'd like to know how much you might be willing to pay to clean up water pollution. In order to make sure that your drinking water and the streams, lakes and rivers in your area are clean and safe, would you be willing to pay $100 a year more in taxes and higher prices, or not?

	YES, WOULD PAY %	NO, WOULD NOT PAY %	NOT SURE %
TOTAL PUBLIC	70	26	4
$7,500 OR LESS	54	41	5
$7,501 - $15,000	66	31	3
$15,001 - $25,000	73	24	3
$25,001 - $35,000	75	21	4
$35,001 AND OVER	84	14	2
FISHERMEN (38%)	74	23	1
SWIMMERS (40%)	77	22	1
SAILORS (42%)	77	21	2
HUNTERS (11%)	76	23	1
OTHER RECREATIONAL WATER USERS (72%)	76	22	2

TABLE 19

HOW MUCH MORE IN TAXES PEOPLE WHO WOULD NOT PAY
$100 MORE TO CLEAN UP WATER POLLUTION WOULD PAY

Q.: Well, about how much more per year in taxes and higher prices would you be willing to pay to make sure your drinking water and the lakes and rivers in your area are clean and safe?

	TOTAL PUBLIC %
0/NOTHING	37
$1-$10	7
$11-$20	2
$21-$30	9
$31-$40	2
$41-$50	16
$51-$60	2
$61-$70	1
$71-$80	2
$81-$90	*
$91-$99	1
NOT SURE	21

*LESS THAN 0.5%.

TABLE 20

HOW IMPORTANT TO KEEP REMAINING WETLANDS FREE FROM DESTRUCTION

Q.: About 70 million acres of land in the U.S. are wetlands. Wetlands are freshwater marshes and wet meadows. When left alone and not drained, they can produce timber, peat moss, and crops such as rice and cranberries. They are also important spawning sites for fish and wildlife and are sanctuaries for fish and bird life. They also help protect against storm and flood waters. Half the wetlands in the U.S. have been drained and destroyed by companies seeking land for industry, and for roads and ports. Now the country has to decide what to do with the remaining wetlands which are vital to the survival of fish and wildlife. How important do you feel it is to keep the remaining wetlands free from further destruction -- very important, somewhat important, or not very important?

	TOTAL PUBLIC %
VERY IMPORTANT	83
SOMEWHAT IMPORTANT	13
NOT VERY IMPORTANT	3
NOT SURE	1

TABLE 21

HOW STRICT SHOULD FEDERAL STANDARDS FOR PRESERVING WETLANDS BE?

Q.: Do you feel that the federal standards for preserving wetlands should be made stricter, less strict, or kept about what they are?

	TOTAL PUBLIC %
MADE STRICTER	69
LESS STRICT	3
KEPT WHAT THEY ARE	22
NOT SURE	6

TABLE 22

WHO TRUST MORE TO MAINTAIN FEDERAL STANDARDS TO PRESERVE THE NATION'S WETLANDS?

	FEDERAL LEVEL %	STATE AND LOCAL LEVEL %	BOTH (VOL.) %	NEITHER (VOL.) %	NOT SURE %
NATIONWIDE	48	48	1	1	2
BY REGION					
EAST	51	45	2	*	2
MIDWEST	45	52	*	1	2
SOUTH	50	47	1	1	1
WEST	43	51	2	1	3
BY AGE					
18-29	44	54	1	-	1
30-49	51	45	1	1	2
50-64	51	45	2	*	2
65 AND OVER	42	51	1	1	5
BY SEX					
MEN	55	41	1	1	2
WOMEN	40	56	1	1	2
BY POLITICAL PHILOSOPHY					
CONSERVATIVE	50	48	1	1	*
MIDDLE-OF-THE-ROAD	45	52	1	-	2
LIBERAL	50	45	2	1	2
BY 1980 VOTE					
VOTED REAGAN	51	47	*	*	2
VOTED CARTER	49	47	2	*	2

LOUIS HARRIS AND ASSOCIATES

*LESS THAN 0.5%.

TABLE 23

WHO WOULD TRUST MORE TO STRICTLY ENFORCE ANTI-WATER POLLUTION LAWS -- AT FEDERAL OR STATE AND LOCAL LEVEL?

Q.: And who would you trust more to strictly enforce anti-water pollution laws -- making sure industry abides by strict standards -- government officials at the federal level or those at the state and local level?

	TOTAL PUBLIC %
FEDERAL LEVEL	46
STATE AND LOCAL LEVEL	51
BOTH (VOL.)	1
NEITHER (VOL.)	*
NOT SURE	2

*LESS THAN 0.5%.

TABLE 24

USE OF SPORTS AND RECREATIONAL FACILITIES

Q.: I'd like to ask you about some popular sports and recreational acitivities. In the past twelve months, have you (READ EACH ITEM), or not?

	HAVE %	HAVE NOT %	NOT SURE %
GONE FISHING	38	62	-
GONE SWIMMING IN STREAMS, PONDS, LAKES, OR RIVERS	40	60	-
GONE SAILING OR BOATING	42	58	-
HUNTED DUCKS OR OTHER ANIMALS THAT LIVE AROUND WATER	11	89	-
SPENT TIME NEAR STREAMS, LAKES, OR RIVERS IN OTHER WAYS, SUCH AS WALKING, JOGGING, OR PICNICKING	72	28	-

TABLE 25

SOURCES OF DRINKING WATER

Q.: Does the drinking water in your home come directly from an underground well nearby, or does it come from a municipal water system?

	TOTAL PUBLIC %	CITIES %	SUB-URBS %	TOWNS %	RURAL %
FROM A WELL	25	10	14	40	44
FROM A MUNICIPAL WATER SYSTEM	70	85	81	53	50
OTHER (VOL.)	3	2	2	6	4
NOT SURE	2	3	3	1	2

TABLE 26

MEMBERSHIP IN ENVIRONMENTAL ORGANIZATIONS

Q.: Are you or is anyone in your immediate family a member of any conservation, wildlife, or environmental organization -- such as the Sierra Club, the National Wildlife Federation, or the National Audubon Society -- or not?

	TOTAL PUBLIC %
A MEMBER	11
NOT A MEMBER	88
NOT SURE	1

TABLE 27

CONTRIBUTORS TO ENVIRONMENTAL ORGANIZATIONS

Q.: Have you or has anyone in your immediate family contributed money to any conservation, wildlife, or environmental organizations in the past twelve months, or not?

	TOTAL PUBLIC %
HAVE CONTRIBUTED	24
HAVE NOT CONTRIBUTED	68
NOT SURE	8

TABLE 28

KEY GROUP ANALYSIS OF MEMBERSHIP AND CONTRIBUTORS TO ENVIRONMENTAL ORGANIZATIONS

	MEMBERSHIP			CONTRIBUTOR		
	MEMBER %	NOT A MEMBER %	NOT SURE %	CONTRIBUTED %	DID NOT %	NOT SURE %
NATIONWIDE	11	88	1	24	68	8
REGION						
EAST	10	90	*	23	70	7
MIDWEST	13	86	1	27	65	8
SOUTH	9	89	2	20	70	10
WEST	11	87	2	26	68	6
SIZE OF PLACE						
CITIES	9	91	*	21	70	9
SUBURBS	15	83	2	26	67	7
TOWNS	8	91	1	27	65	8
RURAL	9	89	1	23	69	8
AGE						
18-29 YEARS	12	86	2	24	67	9
30-49 YEARS	11	89	*	25	71	4
50-64 YEARS	11	88	1	26	65	9
65 AND OVER	7	90	3	17	71	12
EDUCATION						
8TH GRADE	4	95	1	16	64	20
HIGH SCHOOL	8	91	1	21	71	8
COLLEGE	15	84	1	28	66	6
SEX						
MEN	11	88	1	25	70	5
WOMEN	10	89	1	23	67	10
INCOME						
$7,500 OR LESS	7	91	2	19	67	14
$7,501 TO $15,000	7	91	2	17	77	6
$15,001 TO $25,000	11	88	1	23	72	5
$25,001 TO $35,000	10	90	*	26	67	7
$35,001 AND OVER	19	79	2	35	61	4
OCCUPATION						
PROFESSIONAL	17	82	1	35	60	5
BUSINESS EXECUTIVE	15	85	*	27	71	2
SKILLED LABOR	8	92	*	26	65	9
WHITE COLLAR	6	93	1	22	72	6
UNION	9	89	2	27	66	7
POLITICAL PARTY						
REPUBLICAN	13	86	1	29	65	6
DEMOCRATIC	10	88	2	20	69	11
INDEPENDENT	11	88	1	26	70	4
POLITICAL PHILOSOPHY						
CONSERVATIVE	10	89	1	25	68	7
MIDDLE-OF-ROAD	11	87	1	24	69	7
LIBERAL	11	88	1	25	66	9
VOTERS	12	87	1	26	68	6

*LESS THAN 0.5%.

TESTIMONY OF DANIEL WEISS

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

MY NAME IS DANIEL WEISS, AND I AM A CONSERVATION ASSOCIATE SPECIALIZING IN WATER ISSUES WITH THE IZAAK WALTON LEAGUE OF AMERICA. IT IS A PLEASURE TO APPEAR BEFORE YOU BRIEFLY THIS MORNING TO COMMENT ON THE CLEAN WATER ACT, A LAW THAT IS VITAL TO OUR NATION'S EFFORTS TO CLEAN UP OUR RIVERS, LAKES, BAYS AND ESTUARIES. THE IZAAK WALTON LEAGUE IS A NATIONAL CONSERVATION ORGANIZATION LONG DEDICATED TO THE PRINCIPLES EMBODIED IN THE CLEAN WATER ACT. CLEAN WATER REMAINS A HIGH PRIORITY OF THE 50,000 FISHERMEN, HUNTERS, AND CONSERVATIONISTS WHO ARE MEMBERS OF THE IZAAK WALTON LEAGUE.

TODAY, I WOULD LIKE TO ADDRESS TWO ISSUES FACING CONGRESS AS IT CONSIDERS THE REAUTHORIZATION OF THE CLEAN WATER ACT. ONE ISSUE INVOLVES MAINTAINING A CRITICAL ELEMENT OF THE ACT'S EXISTING PROTECTIONS WHILE THE OTHER INVOLVES A POLLUTION PROBLEM THAT THE ACT DOES NOT ADEQUATELY ADDRESS. THE FORMER INVOLVES THE REAGAN ADMINISTRATION'S PROPOSALS TO WEAKEN THE FEDERAL REGULATIONS GOVERNING THE STATE WATER QUALITY STANDARDS. THE NEW PROBLEM IS HOW TO CLEAN UP "TOXIC HOT SPOTS"--WATERS THAT WILL STILL BE UNFIT FOR FISHING OR SWIMMING EVEN AFTER ALL OF THE ACT'S EXISTING CONTROLS ARE PUT IN PLACE BECAUSE OF HIGH LEVELS OF TOXIC DISCHARGES.

MEMBERS OF THE HOUSE PUBLIC WORKS COMMITTEE HAVE BEEN INSTRUMENTAL IN RAISING CRITICAL CONCERNS ABOUT BOTH OF THESE

ISSUES. CHAIRMAN ROE HAS REPEATEDLY VOICED HIS CONCERN THAT THE PROPOSED WATER QUALITY STANDARDS WOULD UNDERMINE STRONG STATE CLEAN WATER PROGRAMS AND INHIBIT THE ACHIEVEMENT OF THE GOALS OF THE ACT. THE HEARING THAT THIS SUBCOMMITTEE HELD LAST FEBRUARY WITH THEN-EPA ASSISTANT ADMINISTRATOR EIDSNESS WAS CRITICAL IN EXPOSING THE MYRIAD OF PROBLEMS WITH EPA'S PROPOSED REGULATIONS. HR 3282, SPONSORED BY CHAIRMAN HOWARD AND OTHER MEMBERS OF THIS COMMITTEE, WOULD SOLVE BOTH OF THESE PROBLEMS BY INCORPORATING THE KEY PRINCIPLES OF THE EXISTING WATER QUALITY REGULATIONS INTO THE ACT, AND BY REQUIRING EPA TO IDENTIFY AND CLEAN UP TOXIC HOT SPOTS. YOUR LEADERSHIP ON THESE ISSUES HAVE PROVEN CRITICAL TO MAINTAINING AND STRENGTHENING THE CLEAN WATER ACT.

THE CLEAN WATER ACT, PASSED IN 1972, GAVE THE FEDERAL GOVERNMENT PRIMARY RESPONSIBILITY FOR SETTING, IMPLEMENTING, AND ENFORCING WATER POLLUTION CONTROLS. AS A RESULT OF THE ACT, CONTROLS ARE NO LONGER BASED ON A CASE-BY-CASE EVALUATION OF THE EFFECTS OF PARTICULAR POLLUTANTS ON A PARTICULAR STREAM--THE "WATER QUALITY" APPROACH. INSTEAD, UNIFORM MINIMUM LIMITATIONS ON DISCHARGES ARE TO BE SET FOR EACH MAJOR POLLUTING INDUSTRY. THESE UNIFORM STANDARDS ELIMINATE MANY OF THE INEQUITIES AND UNCERTAINTIES OF THE WATER QUALITY SYSTEM. THE NATIONWIDE PROGRAM HAS ENABLED MANY STATES--INCLUDING MINNESOTA, CALIFORNIA, NEW JERSEY, AND MARYLAND--TO DEVELOP AND IMPLEMENT TOUGH CLEAN WATER PROGRAMS WITHOUT FEAR OF LOSING INDUSTRY TO STATES WITH WEAKER PROGRAMS.

THE CLEAN WATER ACT HAS LED TO THE CLEAN UP OF SOME OF OUR MOST POLLUTED WATERS IN THE NATION, INCLUDING THE ST. LOUIS RIVER IN MINNESOTA, THE POTOMAC RIVER, AND THE HUDSON RIVER. NATIONWIDE, THE DEGRADATION OF OUR WATERS HAS HALTED AND POLLUTION LEVELS HAVE REMAINED THE SAME DESPITE A GROWING POPULATION AND ECONOMY.

MOST OF THESE SUCCESSES INVOLVE CLEANING UP CONVENTIONAL POLLUTANTS SUCH AS SUSPENDED SOLIDS, OIL, GREASE, AND OTHERS. PROBLEMS WITH TOXIC CHEMICALS--THE INVISIBLE KILLERS IN OUR WATERS--PERSIST. ALTHOUGH MANY WATERS THAT ONCE WERE LITTLE MORE THAN OPEN SEWERS ARE NOW CLEAN ENOUGH FOR FISH TO SURVIVE, IN SOME OF THESE WATERS, THE FISH ARE CONTAMINATED BY TOXICS AND ARE UNFIT FOR HUMAN CONSUMPTION. WE STILL HAVE A LONG WAY TO GO BEFORE WE HAVE RESTORED OUR WATERS AND MET THE GOALS OF THE CLEAN WATER ACT.

* * * * * *

THE CLEAN WATER ACT WAS DESIGNED TO CONTROL POLLUTION IN TWO WAYS. IN ADDITION TO THE UNIFORM EFFLUENT LIMITATIONS, STATES ARE REQUIRED TO SET "WATER QUALITY STANDARDS," WHICH ESTABLISH LIMITS ON POLLUTION FOR SPECIFIC BODIES OF WATER, BASED ON THEIR OPTIMUM USE. WATERS DESIGNATED FOR USES THAT REQUIRE HIGH QUALITY WATERS--SUCH AS TROUT FISHING--ARE REQUIRED TO BE KEPT CLEANER THAN WATERS TO BE USED FOR LOW-QUALITY USES, SUCH AS NAVIGATION.

THESE STATE STANDARDS CAN BE USED AS A SECOND LINE OF DEFENSE IN ACHIEVING CLEAN WATER BY REQUIRING ADDITIONAL POLLUTION CONTROLS WHEN THE MINIMUM FEDERAL EFFLUENT LIMITATIONS FOR EACH OF THE MAJOR POLLUTING INDUSTRIES ARE INADEQUATE TO ACHIEVE CLEAN WATER.

ON OCTOBER 29, 1982, THE ENVIRONMENTAL PROTECTION AGENCY PROPOSED CHANGES IN THESE REGULATIONS THAT COULD HALT, AND PERHAPS REVERSE, TEN YEARS OF PROGRESS IN RESTORING AND PROTECTING OUR WATERS. THESE PROPOSALS ALSO THREATEN FUTURE EFFORTS TO CONTROL DEADLY TOXIC DISCHARGES.

THE IZAAK WALTON LEAGUE OPPOSES THE EPA'S PROPOSALS TO ALTER THE EXISTING REGULATIONS BECAUSE THEY WOULD:

- ELIMINATE MANDATORY STATE REVIEW OF ALL WATER QUALITY STANDARDS;
- ALLOW STATES TO "DOWNGRADE" OR WEAKEN WATER QUALITY STANDARDS MORE EASILY;
- LIMIT THE "ANTI-DEGRADATION POLICY" TO THE PROTECTION OF EXISTING USES ONLY;
- ALLOW "VARIANCES", OR EXEMPTIONS, FOR HEAVILY POLLUTING PLANTS FROM NEEDED POLLUTION CONTROLS; AND
- REDUCE OPPORTUNITIES FOR PUBLIC PARTICIPATION IN STATE CLEAN WATER PROGRAMS.

TOGETHER, THESE PROPOSALS SIGNAL A MAJOR RETREAT FROM MEETING THE GOALS OF THE CLEAN WATER ACT. I WOULD LIKE TO COMMENT BRIEFLY ON THESE PROPOSALS.

PRIORITY REVIEW OF STANDARDS

EPA'S REGULATORY PROPOSALS ELIMINATE BY ADMINISTRATIVE FIAT THE CLEAN WATER ACT REQUIREMENT THAT STATES REVIEW, AND REVISE AS NEEDED, THEIR WATER QUALITY STANDARDS. (CLEAN WATER ACT, SECTION 303(c)(1).) INSTEAD, STATES CAN SELECT "PRIORITY WATER BODIES OR SEGMENTS FOR REVIEW". STATES, UNDER PRESSURE FROM HEAVY DISCHARGERS, COULD LEGALLY AVOID REVIEWING STANDARDS AND CONTROLS ON THE STREAMS WHERE THE DISCHARGERS ARE CAUSING SERIOUS POLLUTION PROBLEMS. STANDARDS ON NON-REVIEWED STREAMS WOULD NOT BE UPGRADED EVEN IF SUCH STREAMS BECOME CLEANER SINCE THE STANDARDS WERE LAST REVIEWED. FINALLY, NEW SCIENTIFIC INFORMATION ABOUT WATER QUALITY WOULD ONLY BE INCORPORATED INTO THE WATER QUALITY STANDARDS OF STREAMS THAT WERE REVIEWED.

IN MANY STATES, THE MANDATORY THREE YEAR REVIEW OF STANDARDS HAS PROVIDED US THE OPPORTUNITY TO EVALUATE OUR CLEAN WATER PROGRAM, AND IDENTIFY AND ADDRESS PROBLEM STREAM SEGMENTS.

DOWNGRADING WATER QUALITY STANDARDS

NEARLY ALL OF THE NATION'S WATERS ARE DESIGNATED FOR FISHING, SWIMMING, OR RECREATION. FORTY OF THE 50 STATES CLASSIFY ALL OF THEIR WATERS FOR FISHING OR SWIMMING. NEARLY ALL OF THE WATERS IN THE OTHER TEN STATES ARE SIMILARLY CLASSIFIED; ONLY A FEW WATERS IN EACH OF THESE STATES ARE CLASSIFIED FOR SOME LOWER QUALITY USE.

MEETING THESE USES WILL BE BENEFICIAL BECAUSE MANY PEOPLE DEPEND ON FISHING, BOATING, AND OTHER WATER ACTIVITIES FOR THEIR LIVELIHOOD OR RECREATION. ADDITIONALLY, MEETING THESE USES WILL INDICATE THAT WE ARE ACHIEVING OUR ULTIMATE OBJECTIVE TO "RESTORE AND MAINTAIN THE CHEMICAL, PHYSICAL, AND BIOLOGICAL INTEGRITY OF THE NATION'S WATERS". (CLEAN WATER ACT, SECTION 101(a).)

THE CURRENT RULES REQUIRE A STATE TO MAINTAIN EXISTING WATER QUALITY STANDARDS UNLESS IT DEMONSTRATES THAT A STREAM'S DESIGNATED USE CANNOT BE MET BECAUSE THE STREAM IS HOPELESSLY POLLUTED, OR REQUIRING THE CONTROLS NEEDED TO MEET THE USE WOULD CAUSE SUBSTANTIAL AND WIDESPREAD ECONOMIC AND SOCIAL IMPACT.

EPA'S PROPOSALS WOULD REPLACE THESE SIMPLE, STRAIGHTFORWARD RULES WITH REQUIREMENTS FOR DOWNGRADING THAT ARE VAGUE, OPEN-ENDED, AND IN SEVERAL CASES, UNRELATED TO WATER QUALITY. EPA'S PROPOSED REGULATIONS WOULD ALLOW STATES TO PERMANENTLY DOWNGRADE STANDARDS AND ALLOW MORE POLLUTION IF:

- ABNORMALLY LOW STREAM FLOWS DURING A DRY SPELL CAUSE TEMPORARY REDUCTIONS IN FISH POPULATIONS;
- A STREAM DESIGNATED FOR SWIMMING IS TOO SHALLOW TO ACTUALLY SWIM IN; OR
- THE BENEFITS OF MEETING A STANDARD "DO NOT BEAR A REASONABLE RELATIONSHIP TO THE COSTS".

RATHER THAN GOING TO THE TROUBLE OF REQUIRING THE CLEAN UP FOULED STREAMS, STATES COULD INSTEAD EASILY DOWNGRADE STANDARDS, THEREBY DEFINING AWAY POLLUTION PROBLEMS.

EPA CLAIMS THAT THESE CHANGES ARE NEEDED BECAUSE SOME STATES ADOPTED WATER QUALITY STANDARDS THAT WERE UNREASONABLY STRICT AND COSTLY, AND WANTS TO ALLOW STATES TO WEAKEN THESE STANDARDS TO ALLOW MORE POLLUTION IN THE WATERS. EPA HAS YET TO DEMONSTRATE ACTUAL INSTANCES WHERE THE EXISTING REGULATIONS HAVE BEEN INFLEXIBLE AND HAVE PREVENTED A STATE FROM DOWNGRADING A STANDARD THAT COULD NOT BE MET. IN FACT, UNDER THE EXISTING REGULATIONS, MINNESOTA HAS RECENTLY DOWNGRADED 208 STREAM SEGMENTS, COVERING APPROXIMATELY 800 MILES, BECAUSE THE STATE BELIEVED THAT THEY COULD NEVER BECOME FISHABLE OR SWIMMABLE. IF EPA PERMITS THIS AMOUNT OF DOWNGRADING OF STANDARDSS NOW, WE CAN EXPECT MUCH MORE DOWNGRADING UNDER THESE PROPOSALS. THIS WOULD REWARD STATES AND INDUSTRIES THAT HAVE DONE A POOR JOB OF CLEANING THEIR WATERS. EPA'S DOWNGRADING PROPOSAL MAKES ACHIEVING THE FISHABLE, SWIMMABLE GOAL OF THE ACT MORE DIFFICULT.

SIGNIFICANTLY, EPA WOULD ALSO ELIMINATE THE REQUIREMENT THAT STATES MUST UPGRADE, OR STRENGTHEN, WATER QUALITY STANDARDS IF A STREAM IS MEETING A HIGHER USE THAN THE STANDARD REQUIRES. FOR INSTANCE, MINNESOTA IS EVALUATING WHETHER TO UPGRADE THE WATER QUALITY STANDARD OF THE ONCE-POISONED ST. LOUIS RIVER. ELIMINATING THE MANDATORY UPGRADING PROVISION COULD PUT AN END TO THIS EFFORT TO ENSURE THAT CURRENT IMPROVEMENTS IN WATER QUALITY BECOME PERMANENT.

LIMITING THE ANTI-DEGRADATION POLICY

EPA'S PROPOSALS WOULD CURTAIL PROTECTIONS FOR HIGH QUALITY WATERS--INCLUDING OUTSTANDING NATIONAL RESOURCE WATERS SUCH AS THOSE IN PARKS AND WILDLIFE REFUGES--THAT ARE CLEANER THAN THE STRICTEST WATER QUALITY STANDARDS REQUIRES. THESE WATERS COULD BE POLLUTED SO LONG AS THE EXISTING USES WERE STILL MET. THIS CHANGE IN "ANTI-DEGRADATION" RULES WOULD ENCOURAGE STATES TO STRIVE FOR ONLY THE MINIMUM LEVEL OF POLLUTION CLEAN UP NEEDED TO MEET WATER QUALITY STANDARDS.

CURRENTLY, ONLY NINE STATES HAVE ANY DESIGNATED OUTSTANDING NATIONAL RESOURCE WATERS, AS PROVIDED FOR IN THE EXISTING REGULATIONS. OTHER STATES ARE CURRENTLY DEVELOPING PROTECTIONS FOR SUCH WATERS IN THEIR STATES. THIS TYPE OF PROGRAM ENSURES THAT THESE OUTSTANDING WATERS REMAIN CLEAN, AND OTHER IMPROVEMENTS IN WATER QUALITY ARE NOT LOST. YET THESE PROGRAMS COULD BE JEOPARDIZED IF EPA'S REGULATIONS NO LONGER REQUIRE THEM. A STRONG FEDERAL ANTI-DEGRADATION POLICY IS A CORNERSTONE OF THE ACT'S OBJECTIVE TO RESTORE, PROTECT, AND MAINTAIN OUR NATION'S WATER QUALITY.

PUBLIC PARTICIPATION WOULD BE CURTAILED

THIS COMMITTEE WISELY DESIGNED THE CLEAN WATER ACT TO ALLOW THE PUBLIC TO PARTICIPATE IN NEARLY EVERY PART OF THE PROGRAM. EPA'S

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PROPOSED REGULATIONS ARE DESIGNED TO GREATLY REDUCE SUCH PARTICIPATION IN THE WATER QUALITY STANDARDS PROCESS. THERE WOULD BE NO REQUIRED PUBLIC INPUT WHEN STATES:

- DEVELOP SITE-SPECIFIC CRITERIA;
- SET RISK LEVELS FOR TOXIC CRITERIA;
- CONDUCT BENEFIT-COST ASSESSMENTS OF MELTING STREAM STANDARDS;
- ALLOW DEGRADATION OF HIGH QUALITY STREAMS; AND
- ISSUE VARIANCES FOR DISCHARGERS FROM ADDITIONAL CONTROLS.

STATES CAN ALTER THEIR WATER PROGRAMS IN ALL OF THESE AREAS WITHOUT PUBLIC INPUT. PUBLIC PARTICIPATION HAS LED TO INNOVATIVE, COST-EFFECTIVE, AND ENVIRONMENTALLY ENHANCED POLLUTION PROGRAMS.

* * * * * *

TAKEN TOGETHER, EPA'S PROPOSALS WOULD FUNDAMENTALLY WEAKEN STATE CLEAN WATER PROGRAMS. THE PROPOSED CHANGES IN DOWNGRADING AND ANTI-DEGRADATION REGULATIONS, COMBINED WITH THE NEW VARIANCE PROVISION, WILL GIVE RECALCITRANT INDUSTRIAL POLLUTERS INCENTIVES TO GO "POLLUTION SHOPPING"--CLOSING PLANTS IN STATES WITH TOUGH STANDARDS OR LOCATING PLANTS IN STATES WITH WEAK ONES. ECONOMICALLY HARD-PRESSED STATES THAT HAVE STRIVED TO CLEAN UP THEIR WATER COULD NOW BE FORCED TO CHOOSE BETWEEN WEAKENING THEIR

POLLUTION CONTROLS OR LOSING INDUSTRIAL JOBS.

THE PHILOSOPHY UNDERLYING EPA'S PROPOSALS IS THAT WATER POLLUTION CONTROL EFFORTS SHOULD ONLY STRIVE TO MEET WATER USES, AND NOT ACHIEVE WATER QUALITY. FOR INSTANCE, EPA ADVOCATES LIMITING THE ANTI-DEGRADATION POLICY FOR HIGH QUALITY WATERS TO "THE PROTECTION AND MAINTENANCE OF EXISTING USES". AND EPA ASSERTS THAT "THERE IS NO ACCEPTED HIERARCHY OF USES" - A POOR QUALITY USE LIKE IRRIGATION IS AS DESIRABLE AS A HIGH QUALITY USE LIKE FISHING. THIS PHILOSOPHY IS GROSSLY INCONSISTENT WITH THE CLEAN WATER ACT'S OBJECTIVE TO "RESTORE AND MAINTAIN" THE NATION'S WATERS, AND IS AT ODDS WITH THE ACT'S INTERIM GOAL OF ACHIEVING WATER QUALITY SUITABLE FOR FISHING AND SWIMMING. THE CLEAN WATER ACT IS A WATER QUALITY LAW. THE CUYAHOYA RIVER IN OHIO IS NOW MEETING ITS USE - YOU CAN CATCH FISH THERE. BUT THE RIVER STILL ISN'T CLEAN - YOU CAN'T EAT ANY OF THE FISH YOU CATCH.

THE EXISTING REGULATIONS ARE DESIGNED TO ENHANCE WATER QUALITY BY GREATLY RESTRICTING DOWNGRADING OF STANDARDS, AND BY PROTECTING HIGH QUALITY WATERS FROM DEGRADATION. IF ADOPTED, EPA'S PROPOSALS WOULD SIGNIFICANTLY LOWER THE SITES OF THE NATION'S CLEAN WATER PROGRAM. IF THAT HAPPENED, THE CLEAN WATER ACT MIGHT BE MORE APTLY CALLED THE "CLEAN ENOUGH WATER ACT".

NEW JERSEY, ALONG WITH CALIFORNIA, MINNESOTA, MARYLAND, AND OVER A DOZEN OTHER STATES (SEE ATTACHMENT #1), HAVE FOUND FAULT WITH EPA'S PROPOSALS, EVEN THOUGH THEY ARE THE SUPPOSED

BENEFICIARIES OF THE CHANGES. NEW JERSEY DETERMINED THAT EPA'S PROPOSALS "WOULD INTRODUCE UNCERTAINTIES THAT WOULD SLOW AND PERHAPS HALT MUCH OF OUR POLLUTION CONTROL EFFORTS". CALIFORNIA COMMENTED THAT EPA'S PROPOSALS WITHDRAW "SUPPORT FROM STRONG STATE PROGRAMS AND (MAKES) IT MORE DIFFICULT FOR STATES TO MAINTAIN HIGH WATER QUALITY ON THEIR OWN". MINNESOTA TOLD EPA THAT THE PROPOSED REGULATIONS WOULD "REQUIRE THE INEFFICIENT AND EXCESSIVE USE OF LIMITED STATE MONETARY AND HUMAN RESOURCES", BECAUSE UNDER THE PROPOSED RULES, STATES WOULD BE EXPECTED TO UNDERTAKE EXPENSIVE STUDIES LIKE COST-BENEFIT ASSESSMENTS.

RATHER THAN SPENDING OUR SCARCE TAX DOLLARS CONDUCTING EXPENSIVE STUDIES DESIGNED TO RATIONALIZE WEAKENING STANDARDS AND CONTROLS, WE WOULD RATHER HAVE STATES USE THEIR LIMITED RESOURCES TO DEVELOP PROGRAMS THAT ADEQUATLY IDENTIFIES, MONITORS, AND CONTROLS THE DISCHARGE OF POISONOUS INDUSTRIAL CHEMICALS INTO OUR PRICELESS RIVERS AND LAKES.

NATIONWIDE, THE LOUIS HARRIS SURVEY FOUND THAT 70 PER CENT OF THE PEOPLE POLLED WOULD PAY $100 MORE A YEAR IN TAXES AND PRICES TO CLEAN UP WATER POLLUTION (SEE ATTACHMENT #2). THE PEOPLE IN THIS COUNTRY ARE WILLING TO PAY FOR CLEAN WATER; IT'S UP TO THE CONGRESS TO MAKE SURE THAT THE EPA RESPONDS TO THIS MANDATE BY RETAINING TOUGH WATER QUALITY REGULATIONS.

HR 3282: RETAINS STRONG WATER QUALITY STANDARDS

THE EXISTING REGULATIONS HAVE PROVEN STRICT ENOUGH TO MAINTAIN STRONG STATE WATER QUALITY STANDARDS, WHILE REMAINING FLEXIBLE ENOUGH TO ALLOW NECESSARY ADJUSTMENTS IN STANDARDS. HR 3282 WOULD

INCORPORATE THE KEY PRINCIPLES OF THE EXISTING REGULATIONS IN THE ACT, ENSURING THAT THIS DELICATE --YET CRITICAL-- BALANCE IS MAINTAINED.

SPECIFICALLY, HR 3282 WOULD:

- ALLOW DOWNGRADING OF STREAM STANDARDS ONLY WHEN:
  - EXISTING STANDARDS ARE NOT ATTAINABLE BECAUSE OF "NATURAL BACKGROUND" LEVELS OF POLLUTION;
  - EXISTING STANDARDS ARE NOT ATTAINABLE BECAUSE OF "IRRETRIEVABLE, MAN-INDUCED CONDITIONS" OR
  - THE ADDITIONAL CLEANUP BEYOND BAT REQUIRED TO MEET EXISTING STANDARDS WOULD CAUSE "SUBSTANTIAL AND WIDESPREAD ADVERSE ECONOMIC AND SOCIAL IMPACT";
- REQUIRE STATES TO UPGRADE WATER QUALITY STANDARDS FOR STREAMS THAT ACTUALLY ARE CLEANER THAN REQUIRED, AND ARE MEETING A DESIGNATED USE THAT IS "HIGHER THAN THE EXISTING STANDARD;
- REQUIRE STATES TO INCORPORATE NUMERICAL TOXIC CRITERIA FOR ANY OF THE 65 PRIORITY POLLUTANTS WHICH REASONABLY COULD BE EXPECTED TO INTERFERE WITH THE ATTAINMENT OR MAINTENANCE OF THIER WATER QUALITY STANDARDS;
- PROHIBIT THE DEGRADATION OF HIGH QUALITY WATERS THAT ARE CLEANER THAN REQUIRED BY THE MOST STRINGENT WATER QUALITY STANDARDS, UNLESS THEY MUST BE DEGRADED TO ALLOW ESSENTIAL ECONOMIC OR SOCIAL DEVELOPMENT FOR WHICH THERE ARE NO FEASIBLE ALTERNATIVES. STATES MUST ENSURE THAT SUCH DEGRADATION DOES NOT INTERFERE WITH OR INJURE EXISTING DESIGNATED USES; AND
- PROTECT "OUTSTANDING NATIONAL RESOURCE WATERS"--SUCH AS THOSE IN NATIONAL PARKS AND WILDLIFE REFUGES--FROM DEGRADATION.

AS REGULATIONS, THESE REQUIREMENTS HAVE BEEN A KEY TOOL IN OUR EFFORTS TO ACHIEVE FISHABLE, SWIMMABLE WATERS.

THE REQUIREMENT IN HR 3282 THAT STATES ADOPT NUMERICAL WATER QUALITY CRITERIA FOR TOXICS IS A NEW REQUIREMENT, BUT IT IS

CONSISTENT WITH AND CRITICAL TO ACHIEVING THE GOALS OF THE ACT. CURRENTLY, ONLY ABOUT HALF OF THE STATES HAVE ANY NUMERICAL STANDARDS FOR TOXICS, AND THEY USUALLY COVER ONLY A HANDFUL OF HEAVY METALS. THESE STANDARDS RARELY CONSIDER THE CHRONIC EFFECTS OF THESE TOXICS OR THEIR EXPOSURE TO HUMANS THROUGH THE FOOD CHAIN.

FOR INSTANCE, ONLY 26 STATES HAVE NUMERICAL STANDARDS FOR LEAD, CYANIDE, AND CADMIUM. THESE ARE THREE OF THE MOST COMMONLY FOUND TOXICS IN INDUSTRIAL WASTEWATER DISCHARGED INTO OUR WATERS AND SEWERS, AND CAN CAUSE CANCER, BIRTH DEFECTS, AND OTHER HEALTH PROBLEMS IN HUMANS. FEWER THAN 15 STATES HAVE NUMERICAL STANDARDS FOR PCB'S. FEWER THAN 25 STATES HAVE NUMERICAL STANDARDS FOR MERCURY, AND ONLY NINE OF THESE HAVE STANDARDS STRINGENT ENOUGH TO PROTECT HUMAN HEALTH, BASED ON THE EPA "WHITE BOOK CRITERIA"(45 FR 79337, NOVEMBER 28, 1980). MANY OF THE STANDARDS FOR OTHER TOXICS ARE ALSO CONSIDERABLY LESS STRINGENT THAN EPA'S NATIONAL CRITERIA FOR THOSE SUBSTANCES.

INSTEAD OF NUMERICAL CRITERIA, MANY STATES EMPLOY "NARRATIVE" CRITERIA FOR TOXICS. NARRATIVE CRITERIA ARE OFTEN DIFFICULT TO TRANSLATE INTO DISCHARGE LIMITATIONS FOR PARTICULAR DISCHARGERS, AND SUCH LIMITATIONS CAN BE DIFFICULT TO ENFORCE. ADDITIONALLY, THEY ARE USELESS FOR DEVELOPING CONTROLS ON TOXICS STRICT ENOUGH TO PROTECT HUMAN HEALTH.

SOME EPA AND STATE OFFICIALS HAVE DISCUSSED THE POTENTIAL DEVELOPMENT OF TOXICS CRITERIA BASED ON BIOMONITORING. HOWEVER,

EPA STAFF HAS ADMITTED THAT SUCH TECHNIQUES HAVE NEVER BEEN USED TO ISSUE AND ENFORCE A SINGLE DISCHARGE LIMITATION, ARE USELESS FOR PROTECTION OF HUMAN HEALTH, AND HAVE NOT BEEN THOROUGHLY TESTED IN THE FIELD TO DETERMINE THEIR RELIABILITY AND DEVELOPMENT COSTS. IN SHORT, ALTHOUGH TOXICS CRITERIA BASED ON BIOMONITORING IS AN AVENUE WORTH EXPLORING, MANY MORE YEARS OF RESEARCH AND TESTING ARE NEEDED BEFORE WE SHOULD RELY ON SUCH CRITERIA TO PROTECT HUMAN HEALTH FROM THE DEADLY EFFECTS OF TOXICS. IN THE MEANTIME, THE REQUIREMENT IN HR 3282 THAT STATES ADOPT NUMERICAL CRITERIA FOR TOXICS WILL PROVIDE THE PUBLIC WITH PROTECTION FROM THEIR EFFECTS.

SINCE WILLIAM RUCKELSHAUS BECAME EPA ADMINISTRATOR IN MAY 1983, HE HAS HINTED THAT EPA MAY PROPOSE FINAL WATER QUALITY REGULATIONS THAT DO NOT INCLUDE SOME OF THE MORE UNWORKABLE, COSTLY, AND ENVIRONMENTALLY DESTRUCTIVE CHANGES PROPOSED BY THE ADMINISTRATION LAST FALL. HOWEVER, WE STRONGLY URGE THE COMMITTEE AND THE CONGRESS TO STAND FIRM IN ITS RESOLVE TO DETERMINE THE NATIONAL POLICY FOR CLEAN WATER AS PROPOSED IN HR 3282. THIS IS A NATIONAL POLICY THAT SHOULD BE ESTABLISHED BY CONGRESS, AND NOT BY UNELECTED BUREAUCRATS AT EPA OR OMB. EVEN IF MR. RUCKELSHAUS DOES PROPOSE SUCH REGULATIONS, HR 3282 WOULD PROVIDE MORE PROTECTION FOR OUR WATERS THAN THE EXISTING REGULATIONS.

FIRST OF ALL, INCORPORATING THE KEY PRINCIPLES OF THE EXISTING REGULATIONS INTO THE ACT GUARANTEES THAT EPA WILL FAITHFULLY ABIDE BY AND IMPLEMENT THE POLICIES ESTABLISHED BY CONGRESS IN

OPERATING THE WATER QUALITY STANDARDS PROGRAM. THE WRITTEN LAW IS THE MOST CLEAR AND CERTAIN STATEMENT OF CONGRESSIONAL INTENT. WHEN POLICY PRINCIPLES ARE INCORPORATED DIRECTLY INTO THE LAW, RATHER THAN JUST IN THE REGULATIONS, IT IS MUCH MORE DIFFICULT FOR THESE PRINCIPLES TO BE IGNORED BY BUREAUCRATS OR CHALLENGED BY SPECIAL INTERESTS.

EVEN IF ADMINISTRATOR RUCKELSHAUS PROPOSES FAIRLY SOUND WATER QUALITY REGULATIONS, THERE IS NO GUARANTEE THAT HE WILL BE ABLE TO GET FINAL APPROVAL FOR SUCH REGULATIONS BY OMB, OR THAT THEY WILL REMAIN IN PLACE AFTER HE IS NO LONGER EPA ADMINISTRATOR. THESE ARE REAL CONCERNS, GIVEN EPA'S ACTUAL OR ATTEMPTED RETREATS ON A NUMBER OF CLEAN WATER ACT REGULATORY AREAS, INCLUDING: PRETREATMENT REMOVAL CREDITS, ANTI-BACKSLIDING PROVISIONS FOR DISCHARGE PERMITS, AND THE TOXIC HOT SPOTS PROGRAM.

WATER QUALITY STANDARDS ARE A KEY ELEMENT OF OUR WAER POLLUTION CONTROL PROGRAMS. THEY ARE USED TO EVALUATE WATER QUALITY IN STREAMS, AND AS A TOOL TO ACHIEVE THE ACT'S GOAL OF FISHABLE, SWIMMABLE WATERS. MANY OF THE OTHER WEAKENING CHANGES IN THE ACT PROPOSED OR SUPPORTED BY THE ADMINISTRATION AND INDUSTRY, SUCH AS A BAT WAIVER OR PRETREATMENT OPT OUT, EMPLOY WATER QUALITY STANDARDS AS A TOOL TO EVALUATE WHICH DISCHARGERS OR COMMUNITIES CAN RECEIVE WAIVERS FROM THE ACT'S REQUIREMENTS. WATER QUALITY STANDARDS WILL ALSO BE A KEY PART OF ANY TOXIC HOT SPOTS PROGRAM.

THE FATE OF THESE REGUALTIONS IS TOO IMPORTANT TO BE DECIDED BY ANYONE BUT THE CONGRESS. WE HEARTILY APPLAUD CHAIRMAN ROE AND

CHAIRMAN HOWARD FOR THEIR LEADERSHIP IN OPPOSING WEAKENING CHANGES IN THE EXISTING WATER QUALITY REGULATIONS. WE STRONGLY URGE THE WATER RESOURCES SUBCOMMITTEE TO ENACT SECTION 6 OF HR 3282 BECAUSE IT STRENGTHENS THE ACT BY INCORPORATING THE KEY PRINCIPLES OF THE EXISTING REGULATIONS INTO IT. THIS LEGISLATION WILL FORCE EPA TO GET ON WITH THE JOB OF CLEANING UP OUR NATION'S WATERS RATHER THAN DELAYING PROGRESS AND WASTING MORE TIME AND MONEY TRYING TO UNDO EXISTING PROTECTIONS.

TOXIC HOT SPOTS: THE UNSOLVED THREAT

I WOULD NOW LIKE TO DISCUSS A GROWING POLLUTION PROBLEM CURRENTLY UNADDRESSED BY THE CLEAN WATER ACT THAT MUST BE SOLVED IF WE ARE TO ACHIEVE CLEAN WATER AND PROTECT THE PUBLIC FROM HAZARDS OF TOXICS. IN SOME WATERS AROUND THE NATION, BAT POLLUTION CONTROL REQUIREMENTS ALONE WILL BE INADEQUATE TO ACHIEVE FISHABLE, SWIMMABLE WATERS. THESE WATERS WILL STILL BE HEAVILY POLLUTED WITH TOXICS EVEN AFTER BAT REQUIREMENTS ARE MET BECAUSE OF THE LARGE NUMBER OF INDUSTRIAL FACILITIES THAT WILL BE DISCHARGING INTO THEM. THESE AREAS ARE CALLED "TOXIC HOT SPOTS".

IN 1981, EPA RELEASED A LIST OF 34 URBAN, INLAND AREAS THAT MIGHT HAVE HIGH LEVELS OF TOXICS IN THEIR NEARBY WATERS EVEN AFTER BAT IS IN PLACE. EPA'S LIST OF AREAS WAS BY NO MEANS COMPREHENSIVE, AND PRIMARILY WAS BASED ON CALCULATIONS AND

ESTIMATES RATHER THAN ON ACTUAL MONITORING DATA. NONETHELESS, IT SERVES AS AN INDICATOR OF SOME PLACES WHERE THERE MAY BE TOXICS PROBLEMS AFTER BAT, AND THE EXTENT OF THOSE PROBLEMS.

FOR INSTANCE, THE DELAWARE RIVER NEAR PHILADELPHIA, PENNSYLVANIA, MAY STILL HAVE HIGH LEVELS OF AT LEAST 15 HEAVY METALS AND ORGANIC CHEMICALS, INCLUDING CADMIUM, LEAD, AND CYANIDE EVEN AFTER BAT IS IN PLACE. IN MINNESOTA, MILLIONS OF POUNDS OF HEAVY METALS AND ORGANIC CHEMICALS ARE DISCHARGED EVERY YEAR INTO THE MISSISSIPPI RIVER NEAR MINNEAPOLIS-ST. PAUL. THIS INCLUDES AN ESTIMATED YEARLY DISCHARGE OF NEARLY ONE MILLION POUNDS OF DEHP (BIS(2-ETHYLHEXYL)PHTHALATE), WHICH CAN CAUSE CANCER OR BIRTH DEFECTS IN HUMANS. BAT CONTROLS ALONE MAY BE INADEQUATE TO REDUCE THE DISCHARGE OF THESE TOXICS TO A LEVEL SAFE FOR HUMANS AND AQUATIC LIFE. THE KANAWHA RIVER NEAR CHARLESTON, WEST VIRGINIA MAY STILL BE HEAVILY POLLUTED WITH NEARLY A DOZEN HEAVY METALS, INCLUDING MERCURY AND CHROMIUM, AFTER BAT CONTROLS ARE IN PLACE.

SO FAR, EPA HAS DONE LITTLE TO ADDRESS THIS PROBLEM. ALTHOUGH EPA ISSUED THE PRELIMINARY LIST OF HOT SPOTS, IT HAS NOT UNDERTAKEN MORE THOROUGH INVESTIGATION OR IDENTIFICATION EFFORTS. UNTIL A THOROUGH AND ACCURATE IDENTIFICATION IS COMPLETED, IT WILL BE IMPOSSIBLE TO DEVELOP ANY COMPREHENSIVE CONTROL STRATEGY TO ADEQUATELY ADDRESS THIS PROBLEM.

SECTION 7 OF HR 3282 WOULD ADDRESS THE PROBLEM OF TOXIC HOT SPOTS AND EPA'S FAILURE TO ACT IN A PRACTICAL AND COMPREHENSIVE

FASHION. HR 3282 WOULD REQUIRE EPA TO:

- IDENTIFY WATERS THAT WILL NOT MEET THEIR FISHABLE, SWIMMABLE WATER QUALITY STANDARDS BECAUSE OF HIGH VOLUMES OF INDUSTRIAL DISCHARGES;
- DETERMINE THE AMOUNT AND SOURCES OF THE PROBLEM TOXICS;
- DEVELOP AND ISSUE, ALONG WITH THE STATES, REGULATIONS THAT ESTABLISH INDIVIDUAL CONTROL STRATEGIES IN EACH OF THE HOT SPOTS; AND
- REQUIRE CONTROLS ON THE PROBLEM TOXICS BEYOND BAT BY THE INDUSTRIAL SOURCES THAT ARE SUFFICIENT TO ACHIEVE FISHABLE, SWIMMABLE WATERS NO LATER THAN THREE YEARS AFTER THE PROMULGATION OF THE STRATEGY.

THIS PROGRAM WOULD OCCUR OVER A PERIOD OF FIVE YEARS, AND IS ABSOLUTELY ESSENTIAL TO ACHIEVING CLEAN WATER IN THE 1980'S AND BEYOND.

SECTION 7 OF HR 3282 APPLIES TO WATERS THAT ARE CLASSIFIED FOR WATER QUALITY AS CLEAN ENOUGH FOR FISHING OR SWIMMING, BUT ARE NOT MEETING THEIR STANDARDS BECAUSE OF LARGE AMOUNTS OF INDUSTRIAL TOXICS. IN A FEW STATES THERE ARE WATERS THAT ARE NOT CLASSIFIED FISHABLE OR SWIMMABLE BUT ARE ALSO CONTAMINATED BY HIGH LEVELS OF TOXICS. FOR INSTANCE, THE GRAND CALUMET RIVER IN INDIANA IS ESSENTIALLY CLASSIFIED FOR INDUSTRIAL USE, BUT IT IS HIGHLY CONTAMINATED BY TOXICS, INCLUDING CYANIDE, LEAD, AND AT LEAST FIVE OTHER HEAVY METALS. THE BILL DOES NOT SPECIFY THAT THE HIGH LEVELS OF TOXICS IN WATERS LIKE THE GRAND CALUMET RIVER SHOULD ALSO BE REDUCED.

WE URGE THE SUBCOMMITTEE TO CLARIFY HR 3282 SO THAT RIVERS THAT ARE NOT CLASSIFIED FOR FISHABLE, SWIMMABLE WATERS BUT HAVE HIGH

LEVELS OF TOXICS ARE ALSO CONSIDERED TOXIC HOT SPOTS. THE INDUSTRIAL SOURCES CONTRIBUTING TO THESE WATERS SHOULD ALSO BE REQUIRED TO IMPLEMENT CONTROLS ON TOXICS BEYOND BAT NECESSARY TO ELIMINATE THESE HOT SPOTS.

ONE MECHANISM THAT COULD ACCOMPLISH THIS OBJECTIVE IS THE REQUIREMENT IN SECTION 7 THAT EPA "CONSIDER LISTING...ANY NAVIGABLE WATERS FOR WHICH ANY PERSON SUBMITS A PETITION TO THE ADMINISTRATOR FOR LISTING". THESE WATERS COULD ALSO BE ELIGIBLE FOR DESIGNATION AS TOXIC HOT SPOTS, SO EPA, WITH THE STATES, WOULD BE REQUIRED TO DEVELOP AND IMPLEMENT ADDITIONAL CONTROLS ON THE INDUSTRIAL SOURCES OF THESE TOXICS.

THE TOXIC HOT SPOTS CLEAN UP PROGRAM IN HR 3282 IS CRITICAL TO THE FUTURE HEALTH AND SAFETY OF OUR WATERS AND ENVIRONMENT. ONCE AGAIN, THE AMERICAN PEOPLE ARE COUNTING ON THIS COMMITTEE TO SOLVE A SERIOUS ENVIRONMENTAL POLLUTION PROBLEM.

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TIME AND TIME AGAIN, THE AMERICAN PEOPLE HAVE TURNED TO THIS COMMITTEE FOR LEADERSHIP IN COMBATTING WATER POLLUTION. THE PROGRESS IN RESTORING OUR NATION'S WATERS WHICH HAS BEEN MADE SINCE 1972 COULD NOT HAVE OCCURRED WITHOUT YOUR VISION AND YOUR EFFORTS. IN 1983, WE AGAIN LOOK TO THIS COMMITTEE TO PROTECT AND STRENGTHEN THE CLEAN WATER ACT'S PROTECTIONS FROM THE HARMS OF TOXIC WATER POLLUTION. HR 3282 INCORPORATES TOUGH WATER QUALITY

STANDARDS INTO THE ACT AND REQUIRES THE CLEAN UP OF TOXIC HOT SPOTS TO MAKE IT POSSIBLE THAT ONE DAY AMERICA'S RIVERS, LAKES, BAYS, AND ESTUARIES WILL BE SAFE FOR HUMAN AND AQUATIC LIFE. THE IZAAK WALTON LEAGUE OF AMERICA URGES THIS COMMITTEE TO ENACT THE WATER QUALITY RENEWAL ACT, HR 3282, TO FINISH THE JOB WE BEGAN ELEVEN YEARS AGO.

THANK YOU VERY MUCH FOR THE OPPORTUNITY TO TESTIFY TODAY. I WOULD BE HAPPY TO ANSWER ANY QUESTIONS.

Attachment #1

States that have raised serious objections to EPA's proposed changes in water quality standards, submitted to EPA from November 30, 1982 to February 10, 1983.

Arizona
California
Colorado
Delaware
Florida
Idaho
Kansas
Maryland
Massachusetts
Minnesota
Montana
Nevada
New Jersey
North Carolina
Ohio
Pennsylvania
Rhode Island
South Carolina
Tennessee
Vermont
West Virginia
Wisconsin

ATTACHMENT #2

Excerpts from:

A SURVEY OF AMERICAN ATTITUDES TOWARD WATER POLLUTION

Study No. 822033

Prepared for the Natural Resources Council of America - December 1982
Conducted by Louis Harris and Associates, Inc.

1. ATTITUDES TOWARD WATER POLLUTION

Pollution and the Quality of Life

Since 1976, the Harris firm has asked the American people how important a variety of factors are in improving the quality of life in the United States...Curbing water pollution has...always been rated "very important" by 70% or more of the public, and this year is no exception. Indeed, the 74% who now say that "curbing water pollution" is a very important quality of life issue is identical to the proportion who say that "keeping the economy growing" is very important...

Concern Over Specific Environmental Problems

The overall concerns people have about air and water pollution control finds specific application in a whole roster of specific worries:

-- By 95-4%, people feel that disposal of hazardous wastes is a serious problem in America.

-- By 93-6%, an almost identical majority feels that pollution of lakes and rivers by toxic substances from factories is a serious national problem.

-- By 88-10%, another sizable majority views pollution of lakes and rivers by sewage as a serious problem in this country.

-- By 84-14%, a big majority feel that contaminated drinking water is a serious national problem.

-- By 88-11%, a decisive majority believe that air pollution by industry generally is a serious problem in this country.

-- By 73-24%, a clear majority feel that water shortages are a serious problem in America.

-- By 80-18%, a substantial majority is convinced that air pollution by trucks and automobiles is a serious national problem.

-- By 70-25%, a majority feel that air pollution by coal-burning electric power plants is a serious problem in the nation.

-- By 61-28%, most Americans feel that damage to the landscape by coal strip mining constitutes a serious national problem.

2. THE CLEAN WATER ACT: AN OVERVIEW

Perception of Current Federal Water Pollution Standards

When asked to rate existing federal water pollution standards, 46% of the public say they are "not protective enough," 41% say they are "just about right," and only a small 6% rate them "overly protective."...A 60% majority...insisted that "Congress should make the Clean Water Act stricter than it is now." 34% feel Congress should keep the Act "about the same," and an almost nonexistent 3% want it made "less strict."

A Key Goal of the Clean Water Act

...Asked to consider "the high cost of cleaning up the nation's waters," an overwhelming 78% majority of the public nonetheless believes that "America's waters can really be made safe for fishing and swimming," while only 17% "don't really think that can be done."

3. THE BEST-AVAILABLE-TECHNOLOGY REQUIREMENT

Public Commitment to BAT

One of the 1977 amendments to the Clean Water Act specifies that factories must install the best available pollution control technology (BAT) by 1984....Fully 53% of those surveyed--a majority of the American people--feel so strongly about the need to control and prevent water pollution that they are willing to endure factories being shut down and people thrown out of work rather than allow factories waivers or variances from the BAT requirement. An additional 23% believe that only a factory which would otherwise have to close down should be granted a variance from BAT. Only 21% are willing to allow businesses to decide for themselves what pollution control systems they can afford....

The 1977 amendments to the Clean Water Act require all industries to be in compliance with BAT standards by 1984. However, to date the government has only issued a few of these industry standards, and virtually all experts agree that the deadline must be extended--to 1987 or 1988 at least--in order

continued...

to give the Environmental Protection Agency more time to research and set BAT standards, and in order to give industry time to comply with the new regulations. Nonetheless, the public opposes, by 57-37%, extending the deadline to 1987.

4. COST-BENEFIT ANALYSIS

Opposition to Requiring Cost-Benefit Analysis

The Clean Water Act...does permit the government to consider costs when setting water pollution standards for industries and municipalities. However, some industries have proposed that the Act be changed so as to require more strict cost-benefit analysis before the government issues standards. The public, by 74-23%, opposes such a change in the Clean Water Act....An overwhelming 89-6% of the public feels we need not sacrifice anti-pollution efforts to help the economy improve, up from a 64-22% margin who felt the same way in response to a similar question asked during the last major recession in 1975.

5. SAFE DRINKING WATER

Perceptions of the Safety of Drinking Water Supplies

The Safe Drinking Water Act, as the Clean Water act, is up for reauthorization in Congress this year. The Act requires that states meet national standards for drinking water purity...Legislation has been introduced in Congress to change this provision so that EPA may only regulate those contaminants that present "an unreasonable risk" to human health...A 2 to 1 majority (65-33%) want to keep the law in its present form, regardless of the cost of meeting the existing requirements.

6. THE COST OF CLEAN WATER

The Cost of the Clean Water Act

By 1987, the federal government estimates that the total cost of compliance with the current standards of the Clean Water Act will be $20.4 billion--which works out to somewhat less than $100 for every person in the country. Obviously individuals do not bear the full cost of water pollution clean-up efforts.... People were bluntly asked if they would be willing to pay $100 a year more in taxes and higher prices for clean and safe water.

By 70-26%, a large majority of the American people said they'd pay the extra $100....

Not surprisingly, people who go fishing, swimming, sailing, or hunting in or near lakes and rivers are even more willing to pay the cost of clean water than the rest of the public.

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7. THE PUBLIC ASSESSES THE WETLANDS

When the 70 million acres of wetlands in the country were described to the public and the ecological balance role of wetlands were presented to the national cross-section, 83% nationwide said that it is "very important" to "keep the remaining wetlands free from further destruction."

A substantial 69% want federal standards for preserving wetlands made "more strict" and 22% want them kept as they are. Only 3% feel such standards should be made "less strict." Thus, by 91-3%, an overwhelming majority in general does not want any easing of standards for wetlands.

The New York Times

MONDAY, APRIL 18, 1983 A17

Keeping Water Clean

By Jack Lorenz and Daniel Weiss

ARLINGTON, Va. — William Ruckelshaus, President Reagan's choice to become the nation's No. 1 pollution fighter, will inherit an Environmental Protection Agency rocked by scandal and mismanagement. Mr. Ruckelshaus must soon confront policies proposed earlier by the Administration that would undermine America's pollution-control programs.

Perhaps the most far-reaching of these are the E.P.A.'s regulatory proposals that would allow states to weaken their efforts to clean up water pollution. If these proposals are adopted, they could halt the rejuvenation of our nation's waters that began during Mr. Ruckelshaus's previous tenure at the agency, under Richard M. Nixon. As the new administrator, he must take prompt action on these proposals, which Congress is scrutinizing.

Under the Clean Water Act, each state is required to set water-quality standards establishing pollution limits for specific bodies of water. In each case, the allowable pollution levels are based on the optimum use to which a lake, stream or river is put. For example, if a stream is designated for fishing, the water-quality standard would allow less pollution than in a stream to be used for industrial purposes. These state water-quality standards are a vital second line of defense in keeping water clean. They are used to require additional cleanup when Federal effluent limits for each of the major polluting industries are inadequate to achieve clean water.

However, the E.P.A.'s proposed changes would allow states to weaken their water-quality standards in a number of key ways. The states could more easily downgrade the designated uses for bodies of water. For instance, it would be easier to change a stream's designated use from swimming to navigation, thereby defining away pollution problems and allowing higher levels of polluted discharges into the waters.

Waters — including those in parks and wildlife refuges — that are already cleaner than required by existing water-quality standards could be allowed to become more polluted.

For the first time, states could trade clean water for economic growth and could grant exemptions from pollution-control requirements to industrial polluters that claim economic hardship.

The E.P.A. cites the Administration's arguments for regulatory reform to justify its proposals, claiming that the changes will allow states more leeway in carrying out pollution-control strategies. But this additional flexibility could have disastrous environmental consequences, and a number of states — among them New Jersey, California and Minnesota — have gone on record opposing the changes. If states can loosen their cleanup standards, industrial polluters will have an incentive to go "pollution shopping" — closing plants in states with tough standards or locating them in states with weak ones. This could pose an especially difficult dilemma for economically hard-pressed states that may be faced with the choice of weakening pollution controls or losing jobs.

The public rejects the notion underlying the Administration's proposals that a healthy economy and a safe environment are mutually exclusive. In a poll of public attitudes toward water pollution released in December, Louis Harris found that fully 89 percent of those surveyed felt that clean-water initiatives need not be sacrificed to get the economy moving. Public support for clean water is so strong that a sizeable majority of respondents said they want existing tough clean-water programs maintained — even if they result in fewer jobs or higher costs.

The last Congress refused to pass legislation that would scale back water-pollution controls. Congressional leaders have urged the E.P.A. not to approve the proposed regulations, realizing that if they are adopted, more than a decade of progress toward attaining cleaner water could go down the drain.

The Clean Water Act and regulations now in force are working. For example, you can now fish and swim in much of New York State's Mohawk River — little more than an open sewer only two decades ago — and crabs, shad and bluefish are returning to the Hudson River. While all bodies of water have not shown such dramatic improvements, most, at least, have not gotten dirtier, despite population and industrial growth.

The American people recognize that clean water is critical to a sound environment, a strong economy and to health, and they continue to support tough antipollution measures. Mr. Ruckelshaus can respond to this overwhelming mandate by jettisoning the proposed regulations and steering the clean-water program back on course. If, however, he proceeds with the proposals, business as usual will continue at the Reagan E.P.A.

Jack Lorenz is executive director and Daniel Weiss is a conservation associate of the Izaak Walton League of America, which is concerned with conservation of natural resources.

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The Promise of Clean Water

The Clean Water Act now being reauthorized by Congress has been a mixed success. It has enabled fish to return to the Hudson, but the fish are too contaminated to eat. It has kept the nation's lakes and rivers from getting any filthier, despite substantial growth in industrial activity, but water quality has not greatly improved in the last seven years.

In revising the act this week, the Senate needs to remember the original goal: attaining clean water by 1985.

The insufficient progress is due to the long delay in implementing the law. Polluters who discharge into municipal sewer systems and those who dump directly into waterways have had a holiday from the law's full force. Only now is the Environmental Protection Agency issuing the final treatment standards with which each group must comply.

Under its new administrator, William Ruckelshaus, the agency has backed off considerably from a plan to let the states wield authority over the pretreatment of wastes dumped into sewage systems. Untreated, such wastes can damage sewage plants and render municipal sludge useless as fertilizer or landfill.

Mr. Ruckelshaus is also asking for broader enforcement powers against polluters. With these changes, revision of the law has drawn far less heat than it did last year, when Congress failed to act. But the law still has big gaps.

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The present statute is directed only against specific sources of pollution, like industrial and sewage plants. But half of all conventional pollution comes from more diffuse sources, like storm water drainage from city streets, dirt from construction sites and agricultural runoff.

Effective remedies are at hand. Measures to reduce soil erosion, which in itself constitutes a highly desirable goal, would reduce the burden of soil, pesticides and fertilizer that farmers impose on the waterways of the nation. Placing bales of hay around construction sites would trap debris that now fouls nearby streams.

Another gap in the law lets through excessive amounts of chemical pollutants. Some 400 million pounds of toxic chemicals and heavy metals are dumped into the waterways each year. When the Environmental Protection Agency issues its long-delayed guidelines specifying the best available technology for removing these pollutants, discharges can be cut to 100 million pounds.

Even this reduction will leave some waterways too polluted for fishing or swimming. A bill proposed by Representative Howard of New Jersey would have the E.P.A. identify these toxic "hot spots" and require further cleanup.

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An issue of concern to New York is the city's hope for waivers that would allow it to give only partial treatment to sewage dumped into the Hudson and East Rivers. The city believes that its new sewage treatment plants will let it meet water quality standards with room to spare for some relaxation of treatment. Granting all its waivers would save some $300 million in construction costs. The Senate's present bill is too harsh in forbidding consideration of any of them.

The Administration has now thought better of its ill-considered design to weaken the water law. Congress should seek to hasten the day when fishing licenses no longer need to warn against eating too much of a day's catch.

BAILEY GUARD STAFF DIRECTOR
JOHN W. YAGO, JR. MINORITY STAFF DIRECTOR

United States Senate
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
WASHINGTON, D.C. 20510

March 14, 1983

Dr. John W. Hernandez, Jr.
Acting Administrator
Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Dear Dr. Hernandez:

We are concerned about recent Environmental Protection Agency proposals to revise regulations governing establishment and revision of water quality standards under the Clean Water Act. The proposed revisions were published October 29, 1982, at 47 Fed. Reg. 49234.

The proposed regulatory changes go to the heart of the clean water program — our national commitment to the restoration and maintenance of the chemical, physical and biological integrity of the Nation's waters and to the goal that "wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983."

The "fishable/swimmable" goal, as it is usually called, was not intended to be a hollow promise when it was established in 1972. It is a goal that we take seriously. It must be achieved through the mechanism of water quality standards adopted by the States. Therefore, except where the "fishable/swimmable" goal is unattainable, water quality standards should be established to reflect that goal and the basic objective of the Act. This intent is carried out in sections 302, 303, and 316.

The proposed new regulations appear to substitute for the baseline water quality goal enacted by Congress a broad benefit/cost comparison test that easily could lead to downgrading of existing water quality standards. The water quality regulations revisions give States less Federal direction than the Clean Water Act requires for determining the use of a particular body of water. Under the new regulations, streams previously categorized by a State for fish and wildlife or other high quality use could be downgraded on the basis of a comparison of values which are exceedingly difficult to calculate.

Even though the new regulations, on their face, would not require any State to use the benefit/cost comparison test, there is a very real danger that if States are permitted to downgrade their waters, industry will be able to "shop around" for areas in which water quality standards would be lower. In addition, this analytical exercise would command personnel and financial resources that already are stretched too thin in many States.

We also are concerned that the new regulations would shift the emphasis from desired water quality to current water uses. In fact, in hearings before the Subcommittee on Environmental Pollution last July, EPA referred to "the Administration's view that pollution control requirements should be directly linked to the protection of the actual uses of the receiving water." Thus, existing "fishable/swimmable" standards for a particular segment could be downgraded on the basis, for example, that dangerous currents or barge traffic preclude swimming.

Also, the proposed regulations drop existing requirements that current water quality levels not be degraded and that States upgrade water quality standards where actual uses exceed those designated in the standards. These revisions are diametrically opposed to the objective and goal of the Act.

The proposed regulations have generated substantial controversy because, whatever EPA's intent, they give the appearance of retreating from our commitment to the central objective and statutory water quality goal of the Clean Water Act.

We urge you to withdraw the proposed regulations. Withdrawal of the proposal for further study would be a clear signal that the Agency is committed to fulfilling its Congressional mandates and to the goals of the Clean Water Act. This might also avoid the need for the Committee to consider corrective legislation with regard to the proposed water quality standards regulations.

We wish you well in your management of the Agency, and hope you will give serious attention to this urgent suggestion.

Sincerely,

Jennings Randolph
Ranking Minority Member
Committee on Environment
and Public Works

Robert T. Stafford
Chairman
Committee on Environment
and Public Works

George J. Mitchell
Ranking Minority Member
Subcommittee on
Environmental Pollution

John H. Chafee
Chairman
Subcommittee on
Environmental Pollution

Robert A. Roe, M.C.
Chairman, Subcommittee
on Water Resources

Mr. ROE. Please proceed.

TESTIMONY OF BEN DYSART, PRESIDENT, NATIONAL WILDLIFE FEDERATION, ACCOMPANIED BY SHARON NEWSOME, LEGISLATIVE REPRESENTATIVE, DR. PAUL RINGOLD, DIRECTOR, OCEAN DISCHARGE PROJECT, DR. ALLEN WENTZ, DIRECTOR, FISH AND WILDLIFE PROJECT; JOHN McCOMB, DIRECTOR, WASHINGTON OFFICE, SIERRA CLUB; AND DANIEL WEISS, CONSERVATION ASSOCIATE, IZAAK WALTON LEAGUE

Dr. DYSART. Thank you, Mr. Chairman, members of the subcommittee.

For the record, my name is Ben Dysart. I am president and chairman of the board of the National Wildlife Federation and appear today in that capacity.

I would like to thank the subcommittee for inviting the Federation to testify today in support of H.R. 3282 introduced by Chairman Howard. I am accompanied today by Sharon Newsome, Federation's Legislative Representative, Dr. Paul Ringold, Director of our Ocean Discharge Project and Dr. Allen Wentz, Director of our Fish and Wildlife program.

Mr. Chairman, you have our full statement which has been submitted for the record, and with your permission and I would like to provide some summary comments.

Mr. ROE. Without objection, so ordered.

Dr. DYSART. Thank you. We believe this is an excellent bill which will close some glaring gaps in the existing Clean Water Act.

We certainly commend Chairman Howard for his leadership and the other gentlemen for their cosponsorship. The federation is the world's largest nonprofit conservation organization devoted to wise use and conservation of our Nation's resources.

I speak today on behalf of our more than 4 million members and supporters and also our 51 affiliated State and territorial organizations.

Mr. Chairman, I am very familiar with the environmental protection and water quality areas as I hold degrees in civil, sanitary and water resource engineering from Vanderbilt and Georgia Tech and for the last 15 years taught environmental engineering at Clemson University at the graduate level. I am past president of the Association of Environmental Engineering Professors. I have conducted a good bit of research germane to the topic of this legislation sponsored by major Federal agencies, as well as the private sector.

Several years ago I had the opportunity to serve full time as the science adviser to the first Assistant Secretary of the Army for Civil Works. When Congress authorized the act in 1972, it affirmed the Nation's commitment to fishable and swimmable waters. Though it is clear to all of us that the goals of this legislation will not be met on time, we believe substantial progress has been made. We believe the Nation and people are a lot better off because of this progress. We support H.R. 3282 because it addresses continuing water pollution problems. Five of these are of particular interest to the federation.

First is the importance of section 404 in protecting our wetlands and water quality.

Second, the more than 200 applications for discharging sewage into estuaries and the ocean.

Third, the need for special recognition and management of bays and estuaries.

Fourth, the continuing impact of dams on water quality and last, the largely unabated problem of nonpoint pollution.

First, let me comment on section 404. We are very happy to be here before this subcommittee to offer some brief comments. We hope to have the opportunity in the future to provide additional comments and testimony.

The protection of our Nation's rapidly vanishing wetlands through a strong regulatory program under section 404 will continue to be one of the Wildlife Federation's highest priorities.

You certainly do not have to be an engineer or scientist to understand and appreciate that the Nation's waters are ecologically and hydrologically interrelated.

Consequently, the destruction or degradation of our wetlands adversely affects the physical, chemical and biological integrity of all our waters.

Section 404 is widely credited with reducing wetlands loss due to disposal of dredged or fill material by about one-half as compared to what would have occurred had there been no section 404.

Therefore, we believe this provision plays an absolutely essential role in continuing to move toward meeting the goals of the Clean Water Act; that is, restoration and maintenance of the Nation's waters. It is also very important because wetlands are critical habitat for commercial and sports fisheries and wildlife, game as well as nongame species.

I can assure you that our organization and our membership and our leadership are very sensitive to the problems of commercial fisheries, the Chesapeake Bay and other areas. I and many of our leaders occasionally have the opportunity to come looking for geese on the Eastern Shore. So we certainly appreciate the resources that are being discussed here.

Over the past year and a half, the army has substantially revised the section 404 program and further changes have been proposed recently.

A number of these rescissions and proposed revisions concern us a great deal because we believe that they seriously weaken the ability of section 404 to protect the Nation's water and especially the wetlands.

We support the amendments to 404 included in H.R. 3282. The amendment to 404(b) affirms the fundamental standards for protection of the aquatic environment currently contained in EPA's guidelines. This is the presumption against disposing of fill material in wetlands and requiring a search for practical alternatives.

We believe this amendment is critically important because of the repeated and continuing attempts by the Department of the Army to weaken the substantive standards of 404(q) guidelines. The amendment to this section seeks to make interagency review of permits once again a meaningful and equitable process.

The amendment provides the Federal resource agencies with sufficient time to evaluate controversial permits and removes the authority for the Assistant Secretary of Army for Civil Works to veto permit referral requests by those agencies.

Finally, under 404 we would encourage this subcommittee to include an amendment to section 505 to allow citizens to bring lawsuits against the Secretary of the Army for failing to carry out his section 404 duties.

Section 505 already allows such action against the EPA administrator for 402 permits. Frankly, we see no reason to treat section 404 any differently.

On the matter of ocean discharge waivers, for some time the federation has been concerned about the more than 200 pending applications for ocean discharge waivers.

Our concerns have grown since we have analyzed the individual waiver applications. In 1977, Congresss added section 301(h) to the Clean Water Act. This controversial provision established a means by which publicly owned treatment works discharging through outfalls into oceans or certain estuarine areas could obtain waivers from secondary treatment on a case-by-case basis if approved by EPA after approval by the State. Before obtaining a waiver, the municipality would have to demonstrate that the modification would not impair the integrity of the receiving waters.

The provision was the act's first major departure from a strict technology-based approach to the control of water pollution. Since its adoption, 209 coastal cities and communities have applied for waivers. Many are large industrialized cities including Boston, Philadelphia, Los Angeles, and Miami. In some cases, applicants are proposing to discharge sewage that is almost completely untreated into ocean waters and estuaries.

L.A. County's historic discharges led to what EPA characterized as, "massive changes in structure, function, abundance, and diversity of inshore plants and animals." Recent improvements in the discharges are, according to EPA, apparently insufficient to allow for complete recovery of the kelp beds." We support the proposal to eliminate waivers in estuaries because of the great potential for harm to these sensitive areas. I am sure you and all the members of the subcommittee have heard the statement that 80 percent or so of our commercial and recreational fisheries catch and a large portion of our population lives very close to estuaries.

Fish, wildlife and people make estuaries our most intensively utilized areas. Another example is New York harbor. Fourteen outfalls waiver applications from New York and New Jersey are concentrated in the Hudson River, New York harbor area. Eleven of the applications have concentrations of suspended solids and BOD that stay in the discharge area and disperse slowly.

Seven of the applicants have toxics in amounts that exceed allowable concentrations in the EPA marine water quality criteria. All of these would be discharged in waters that do not support a balanced indigenous population of shellfish and wildlife and fish or do not meet water quality standards for at least a portion of the year. Taken together these applications would permit the release of about a billion and a half gallons per day of sewage that has less

than secondary treatment. This also contains a good bit of toxic material.

Puget Sound, San Francisco Bay also have large numbers of applications in for waivers. The other provisions of H.R. 3282 which would require a minimum of primary treatment and control of toxics for the remaining true ocean discharge waivers are essential if the marine environment is to be adequately protected from adverse impacts. For those municipalities which do receive a waiver we also suggest additional monitoring requirements to try to insure that there are no major long term adverse impacts.

Next, very brief comments on protection of bays and estuaries. We support not only elimination of sewage treatment waivers but also the special recognition and provision for management conferences called for in H.R. 3282. In many cases the watershed goes beyond political boundaries and requires for its protection economic and multijurisdictional resources far beyond the capabilities of individual States.

H.R. 3282 provides matching grants for States and watersheds so they can come together to develop meaningful plans for controlling both point source and nonpoint sources affecting the bay.

Next the matter of water quality and dams. As most people realize the federation has been concerned about the impact of dam discharges for some time. Those discharges from existing dams as well as dams under construction such as the Richard B. Russell Dam on the Savannah River near my home in South Carolina.

Dams can adversely affect downstream as well as in reservoir water quality and aquatic habitat in a variety of ways. This tends to be much more of a problem in certain parts of the country than in others. In addition downstream communities have to pay more to achieve higher levels of waste treatment because of the low dissolved oxygen in discharges from such upstream dams.

Large dams can cause major water quality problems due to many changes that occur. Not all dams, however, can be considered problems. These problems tend to develop principally behind high dams and large reservoirs. This is particularly a problem in the South and Southeast.

Chairman Howard's bill would require that EPA, in cooperation with other interested Federal agencies and States, study and monitor the effects of dams on our Nation's waters and to have EPA present a study, results of the study and recommendations to Congress in 1985. Whether it is for public water supply or sport fishing the public has a substantial stake in reservoir water quality.

We believe the public should have the opportunity to have input to this study, also, in addition to that of EPA and the State agencies. We applaud this effort by Mr. Howard and it is certainly a good step toward control of pollution caused by dams.

Our final comments, Mr. Chairman, relate to nonpoint sources. In 1977, the General Accounting Office estimated that over half the pollution entering the Nation's waterways was from nonpoint sources, and the most important of nonpoint sources were agricultural activities, urban storm water runoff, silviculture, and poorly designed and managed septic systems.

Unfortunately the nonpoint source situation has not improved much in the interim. Since 1974, nearly half a million dollars has

been spent on studies, plans, and demonstration projects. The failure in not reducing nonpoint source related pollution has not been in the plans and projects but rather our failure to implement what we have learned.

The tangible costs to society of letting nonpoint pollution continue unchecked is very high. The Nation is losing productivity and nutrients from its land. We are smothering fish habitat and wetlands. We are contaminating fish and shellfish, and we are spending over $300 million a year dredging out the resulting silt from our reservoirs, lakes and harbors. The list could go on.

I might also add that the intangible or less tangible but nevertheless very real cost to the public are also substantial. We would urge the subcommittee to adopt a nonpoint pollution program. The program should target those waterways where nonpoint runoff is a major source of pollution. It should be mandatory on the States to identify or to develop and actively promote the use of appropriate and effective best management practices, or BMP's, for those individual sources that are producing the pollution.

Based on my own experience, Mr. Chairman, both from research and from a considerable amount of applied real world experience, I know that there are BMP's available which if properly selected, designed, constructed, operated, and maintained, individually and in systems, can effectively reduce the export of soil, nutrients, herbicides, oxygen demanding materials, heavy metals and other toxics offsite and into our surface waters.

This can be done at a cost which is not prohibitive if there is a genuine commitment to cope with this serious and longstanding water quality problem and to move on in a substantial way to protecting our Nation's streams. The water quality oriented committees of the Congress, the Environmental Protection Agency and the State agencies with water quality responsibilities have to insist that water quality be the real focus and that the right BMP's be specified, put in place and operated properly. I think my own environmental engineering profession has to recognize the problem and utilize the latest in proven cost effective design procedures for nonpoint pollution. I think you and the Congress and the American taxpayers should certainly expect the same level of performance, effectiveness and reliability for nonpoint control facilities as we all expect and know we can depend on from my environmental engineering colleagues in dealing with industrial and municipal wastewaters that arrive in pipes into modern and well-operated waste treatment plants.

I am confident this can be done. A date should be set by which all sources would be required to implement suitable practices and systems of practices.

In addition, we believe that Federal agencies should make their assistance programs consistent with the States' programs so that a Federal agency is not encouraging a practice which a State is trying to discourage.

Finally, EPA should have the authority to step in and develop a program if the States do not act. I believe, and the National Wildlife Federation believes, Mr. Chairman, that this subcommittee can make the most meaningful improvement in the Clean Water Act for this reauthorization period by adopting a mandatory control

program for those limited areas and sources which contribute to nonpoint pollution.

Mr. Chairman, we appreciate the opportunity to testify before your subcommittee this morning. We would be pleased to address any questions you might have, sir.

Thank you.

Mr. ROE. Want to thank you Dr. Dysart.

Now, we have Mr. McComb, who is director of the Sierra Club.

Mr. MCCOMB. Thank you, Mr. Chairman, members of the subcommittee. I am John McComb, director of the Sierra Club's Washington office.

Control of water pollution is a top priority to the American people, as well as to members of the Sierra Club. In December 1982, Louis Harris and Associates conducted a nationwide survey of American attitudes toward water pollution for the Natural Resources Council of America. Here are a few highlights from that survey. The Harris poll asked people how important a variety of factors are in improving the quality of life in the United States. Curbing water pollution was rated "very important" by 74 percent, identical to the rating for "keeping the economy growing."

Concern about toxic wastes is even greater. An overwhelming 95 percent of Americans feel that disposal of hazardous wastes is a serious problem in America. Ninety-three percent feel that pollution of lakes and rivers by toxic substances from factories is a serious national problem. That broad concern is reflected in our internal priority setting process where members have chosen clean water and toxic legislation to be among their highest priorities for the 98th Congress.

We support Chairman Howard's H.R. 3282 because it embodies a clear commitment to maintain and improve the quality of America's waters.

According to EPA estimates, nearly 300 million excess pounds of toxic pollutants will be unnecessarily discharged into America's waterways and sewer systems each year that pretreatment and BAT controls are delayed. These are chemicals that cause cancer, birth defects, and have other adverse effects on human health and aquatic life.

In order to help this committee help frame the major issues with which you will have to deal, I would like to briefly discuss two specific issues in the remainder of my testimony. These two areas are pretreatment of industrial wastewater and best available technology commonly known as BAT.

In 1977, Congress wisely enacted a national program requiring pretreatment of industrial wastes to remove toxics before they enter municipal sewage treatment plants. As this program is beginning to take effect, it is coming under attack from some industries that want to avoid the costs of pretreatment and from some municipal sewerage agencies that do not want to meet Federal pretreatment requirements.

There have been suggestions for weakening the program by allowing municipalities to use their own pretreatment programs instead of the Federal one. Any new program to exempt municipalities or industries would delay for years the implementation of pollution controls. Planning a new program and tailoring it to each

local community would severely strain the resources of the Environmental Protection Agency, which are sorely needed elsewhere. In addition, it is more fair for industries to pay to clean up their wastes.

The final result of pretreatment waivers would probably be a higher level of toxic pollution, because only municipalities with weaker pretreatment programs would be motivated to apply for waivers. In the best of cases—where the sewage treatment plant is successfully removing the toxics from the water—there is still the problem of contaminated sludge. A small quantity of concentrated toxic wastes removed from the industrial effluent at the plantsite can sometimes be recycled, and in other cases it can be much more efficiently destroyed or disposed of than vast quantities of municipal sludge that contain lower concentrations of toxic wastes.

We are pleased that H.R. 3282 would not weaken the existing national pretreatment program.

The best available technology economically achievable or BAT guidelines are designed to reduce industrial toxic pollution discharged directly into rivers and other waterways. The Clean Water Act requires industries to comply with BAT by July 1, 1984. However, EPA has been slow to formulate the BAT standards and is not expected to finish issuing them until that date. Industries will then need some time to comply with the guidelines. No one disputes the need to extend BAT deadlines; the question is the length of the extension.

Every year of delay in the implementation of BAT will result in about 100 million pounds of excess toxic wastes being discharged into the Nation's waters. Deciding the length of the delay of deadlines therefore has a significant impact on the environment and public health. The EPA is issuing BAT regulations according to a phased schedule from the date regulations are issued.

The Sierra Club supports H.R. 3282, which allows industry 3 years to comply with BAT from the date the regulations are issued. Representatives from EPA and several industries have testified that 3 years allow sufficient time for compliance. We would oppose extensions beyond 3 years.

The Sierra Club strongly opposes exemptions or variances from BAT requirements. Congress rejected the idea of variances in 1977, and they are no more justified in 1983. Chemical industry representatives have argued that they should not be required to implement BAT when water quality standards are being met. This argument is not credible because, at present, the water quality standards of most States do not even have criteria for many frequently found toxic pollutants.

Particularly in the area of toxic pollutants, we should err on the side of caution. A program of BAT variances would inevitably increase hazards to public health.

I will conclude by reiterating the Sierra Club's support for H.R. 3282. We believe it provides a sound basis for renewal of the Clean Water Act. We and other representatives of the environmental community will be prepared to provide more detailed testimony and information at the additional hearings on this subject planned by this committee.

That concludes my testimony. Thank you.

Mr. ROE. I want to thank you, Mr. McComb.

We have now our next witness on the panel, Daniel Weiss, who is representing the Izaak Walton League.

Mr. Weiss.

Mr. WEISS. Mr. Chairman and members of the subcommittee, my name is Daniel Weiss, and I am a conservation associate specializing in water issues with the Izaak Walton League of America. It is a pleasure to appear before you briefly this morning to comment on the Clean Water Act, a law that is vital to our Nation's efforts to clean up our rivers, lakes, bays, and estuaries.

I would like to submit a longer statement for the record, and affiliate myself with the remarks of my colleagues.

Two issues face Congress with regard to the Clean Water Act. One issue is the Reagan administration's proposals to weaken the Federal regulations governing State water quality standards.

Second, we must solve a new problem, toxic hotspots. Members of the House Public Works Committee have been instrumental in raising critical concerns about both of these issues. Chairman Roe has repeatedly voiced his concern that the proposed water quality standards would undermine strong State clean water programs and inhibit the achievement of the goals of the act.

And H.R. 3282, introduced by Chairman Howard and sponsored by other members of the committee, would solve both of these problems by incorporating the key principles of the existing water quality regulations into the act, and by requiring EPA to identify and clean up toxic hotspots.

On October 29, 1982, the EPA proposed changes in the water quality regulations that would halt and perhaps reverse 10 years of progress in restoring and protecting our waters. These proposals also threaten future efforts to control deadly toxic discharges.

The Izaak Walton League opposes the EPA's proposals to alter the existing regulations because they would eliminate mandatory State review of all water quality standards; allow States to downgrade or weaken water quality standards more easily; limit the antidegradation policy to the protection of existing uses only; allow variances, or exemptions, for heavily polluting plants from needed pollution controls; and reduce opportunities for public participation in State clean water programs.

Together these proposals signal a major retreat from meeting the goals of the Clean Water Act. EPA's proposed regulations would make it much easier for States to permanently downgrade standards and allow more pollution if abnormally low stream flows during a dry spell cause temporary reductions in fish populations; a stream designated for swimming is too shallow to actually swim in; or the benefits of meeting a standard do not bear a reasonable relationship to the costs. Rather than going to the trouble of requiring the clean up fouled streams, States could instead easily downgrade standards, thereby defining away pollution problems.

EPA claims that these changes are needed because some States adopted water quality standards that were unreasonably strict and costly, and wants to allow States to weaken these standards to allow more pollution in the waters. EPA has yet to demonstrate actual instances where the existing regulations have been inflexible and have prevented a State from downgrading a standard that

could not be met. In fact, under the existing regulations, Minnesota has recently downgraded 208 stream segments, covering approximately 800 miles, because the State believed that they could never become fishable or swimmable. If EPA permits this amount of downgrading of standards now, we can expect much more downgrading under these proposals. This would reward States and industries that have done a poor job of cleaning their waters. EPA's downgrading proposal makes achieving the fishable, swimmable goal of the act more difficult.

Significantly, EPA would also eliminate the requirement that States must upgrade, or strengthen, water quality standards if a stream is meeting a higher use than the standard requires. For instance, Minnesota is evaluating whether to upgrade the water quality standard of the once-poisoned St. Louis river. Eliminating the mandatory upgrading provision could put an end to this effort to insure that current improvements in water quality become permanent.

EPA's proposals would curtail protections for high quality waters—including national parks and wildlife refuges—that are cleaner than the strictest water quality standards requires. These waters could be polluted so long as the existing uses were still met. This change in antidegradation rules would encourage States to strive for only the minimum level of pollution cleanup needed to meet water quality standards.

Taken together, EPA's proposals would fundamentally weaken State water quality programs. Recalcitrant industrial polluters would have incentives to go pollution shopping—closing plants in States with tough standards or locating them in States with weak ones. The philosophy underlying EPA's proposals is that water pollution control efforts should only strive to meet water uses and not achieve water quality. This would significantly lower the sites of the Nation's clean water program. If that happened, the Clean Water Act might be more aptly called the Clean Enough Water Act.

New Jersey along with California, Minnesota, and over a dozen other States has found fault with EPA's proposals even though they are the supposed beneficiaries of the changes.

For instance, New Jersey determined that EPA's proposals would introduce uncertainties that would slow and perhaps halt much of our pollution control efforts. Nationwide, the Louis Harris survey found that 70 percent of the people polled would pay $100 more a year in taxes and prices to clean up water pollution. The people in this country are willing to pay for clean water; it is up to the Congress to make sure that the EPA responds to this mandate by retaining tough water quality regulations. There is a summary of the Harris poll attached to my statement.

H.R. 3282 retains strong water quality standards. The existing regulations have proven strict enough to maintain strong State water quality standards, while remaining flexible enough to allow necessary adjustments in standards. H.R. 3282 would incorporate the key principles of the existing regulations in the act, ensuring that this delicate—yet critical—balance is maintained.

Additionally, H.R. 3282 would require States to adopt numerical water quality criteria for toxics. This is consistent with and critical

to achieving the goals of the act. Currently, only about half the States have any numerical standards for toxics in their standards--and they usually cover only a handful of heavy metals. These standards rarely consider the chronic efects of these toxics or their exposure to humans through the food chain.

For example, fewer than 25 States have numerical standards for mercury and only nine of these have standards stringent enough to protect human health, based on the EPA "White Book" criteria. Many of the standards for other toxics are also considerably less stringent than EPA's national criteria for those substances. William Ruckelshaus has hinted that EPA may propose final water quality regulations that do not include some of the more unworkable, costly, and environmentally destructive changes proposed by the administration last fall. However, we strongly urge the committee and the Congress to stand firm in its resolve to determine the national policy for clean water as proposed in H.R. 3282. This is a national policy that should be established by Congress, and not by unelected bureaucrats at EPA or OMB. Incorporating key principles of the existing regulations into the act guarantees that EPA will faithfully abide by and implement the policies established by Congress in operating the water quality standards program.

Second, even if Administrator Ruckelshaus proposes fairly sound water quality regulations, there is no guarantee that he will be able to get final approval for such regulations from OMB, or that they will remain in place after he is no longer EPA Administrator. We strongly urge the subcommittee to enact section 6 because it will force EPA to get on with the job of cleaning up our Nation's waters.

The second key problem is toxic hotspots—the unsolved threat. Toxic hotspots are a pollution problem currently unaddressed by the Clean Water Act. In some areas around the country BAT pollution control requirements alone will be inadequate to achieve fishable, swimmable waters. These waters will still be heavily polluted with toxics even after BAT requirements are met because of the large number of industrial facilities that will be discharging into them. These areas are called toxic hotspots.

In 1981, EPA released a list of 34 urban, inland areas that might have high levels of toxics in their nearby waters even after BAT is in place. For instance, the Delaware River near Philadephia, Pa., may still have high levels of at least 15 heavy metals and organic chemicals, including cadmium, lead, and cyanide even after BAT is in place.

So far, EPA has done little to address this problem. Section 7 of H.R. 3282 would address the problem of toxic hotspots and EPA's failure to act in a practical and comprehensive fashion. H.R. 3282 would require EPA to identify toxic hotspots; determine the amount and sources of the problem toxics; develop and issue, along with the States, regulations that establish individual control strategies in each of the hotspots; and require controls on the problem toxics beyond BAT by the industrial sources that are sufficient to achieve fishable, swimmable waters no later than 3 years after the promulgation of the strategy.

This program is absolutely essential to achieving clean water. Time and time again, the American people have turned to this

committee for leadership in combating water pollution. The progress in restoring our Nation's waters which has been made since 1972 could not have occurred without your vision and your efforts. In 1983, we again look to this committee to protect and strengthen the Clean Water Act's protections from the harms of toxic water pollution. H.R. 3282 incorporates tough water quality standards into the act and requires the cleanup of toxic hotspots to make it possible that one day America's rivers, lakes, bays, and estuaries will be safe for human and aquatic life. The Izaak Walton League of America urges this committee to enact the Water Quality Renewal Act, H.R. 3282, to finish the job we began together 11 years ago.

Mr. ROE. Thank you very much for the opportunity to testify today. I would be happy to answer any questions.

Thank you very much, Mr. Weiss.

Ms. Newsome, do you have anything to add?

Ms. NEWSOME. No.

Mr. ROE. Thank you.

Well, we want to thank the distinguished witnesses for a good beginning and good comprehensive overview of where we have been and where we should be directing our attention.

Are there any members who have any questions they want to ask the panel at this point? Mr. Moody?

Mr. MOODY. I would like to ask both the Sierra Club and the Izaak Walton representative a basic question. It used to be we talked about the tradeoff between jobs and environment. I was one in the State legislature of Wisconsin who worked very strongly for the environment.

Now we talk about cost of Government versus environmental cleanup. We are not talking about trivial sums of money, but many billions of dollars.

How do you in a general sense weigh the costs? There are some pollutions which are so expensive to clean up and would require more of our society's resources than economically feasible.

How do you strike a balance? This is a generic question and takes us far afield from the bill, but your testimony goes far afield from the bill, if I may say so.

Mr. WEISS. Well, the existing act already requires the best available technology economically achievable for the control of toxics.

So the concept of cost is already built into the process in which you develop the controls. As BAT guidelines have been issued, a number of treatment requirements have been ultimately rejected by EPA because the Reagan EPA believed that they were not economically achievable.

So that the concept of cost is already built into the act. Now, when it comes to controlling pollution and toxic hotspots, what we are talking about there are areas that even after the economically achievable controls are in place, there will still be dangerously high levels of toxic pollutants, including such substances as lead, cadmium, mercury, PCB's, and cyanide.

What will be needed there is for EPA to require control strategies for these particular problem toxics for the particular dischargers. So some of these dischargers may have to go beyond BAT.

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What we are expecting to happen is that these dischargers would have to perhaps implement some of the controls that were initially rejected as not being economically achievable industrywide, whether or not they are economically achievable for that particular facility.

To sum up, we believe that the Clean Water Act already addresses that problem to a great extent because the controls have to be economically achievable.

Mr. MOODY. To follow up the question, do you think the current EPA administration has interpreted that economic component correctly, or do I sense from your testimony you think they have been too generous?

Mr. WEISS. In some cases, of the 12 best available technology guidelines that have come out under this administration, fully half of them require little or no additional cleanup beyond what is happening now.

In some of those cases, EPA may have erred too much on the side of weighing the costs when setting the guidelines.

Mr. MOODY. Mr. McComb?

Mr. MCCOMB. I would agree a good deal of what Dan Weiss has said. Certainly the committee is properly going to have to weigh those costs and tradeoffs. I am very cognizant of them.

At some point it isn't worth it. I think we have learned there is a great willingness on the part of the American public to pay significant costs in order to have clean water.

There is one other factor I think is important to keep in mind. There are often some localized impacts which are adverse to a particular municipality or particular industry, but there are often offsets to those in other areas where there are clear benefits to the economy.

We listened to Representative Dyson this morning talking about the economy of the Chesapeake Bay. I think we need to find some way of dealing with what benefits some area may hurt some others at the same time.

Mr. MOODY. Another closely related issue is that of a uniform standard versus a standard on the body of water receiving the discharge. Coupled with that is the question of whether or not you measure the toxicity of the outflow itself, or its impact into the total body.

For example, a given discharge into Lake Michigan may be more serious than it would be for a smaller lake. I mean the size, the way a body of water may scour itself, yet a uniform standard might not take that into account.

Could you comment on that?

Mr. WEISS. Yes. What we found before 1972 is that case-by-case pollution controls simply did not work. We didn't have the body of scientific knowledge to determine effects of toxics.

Case-by-case controls were expensive to develop. They were easy to circumvent in the courts. They had the effect of pitting one State against another in terms of a State having to choose between tough standards or attracting industry.

That is why some system of developing uniform controls was needed. The controls in the act now are not based on the effects of toxics on water bodies. Rather, they are based on the ability of pol-

lution control technologies for each particular industry to remove pollutants.

What the act calls for is ultimately the best available technology economically achievable within an industry to have a level equivalent to that.

This is where the hotspots program comes in. First all dischargers are meeting a minimum floor of removal, so a steel plant in Wisconsin has to meet the same removal levels that a steel plant in Texas has to. Then, if places where you are still not able to achieve water quality is considered a hotspot.

A plant contributing to a hotspot would then have to go beyond the uniform minimum control guideline for that industry. This is where you take in the element of the effects of the toxics on the water, and design the control strategy to the particular discharger and the particular stream.

First you have the minimum floor and further controls where needed, set on a case-by-case basis.

Mr. MOODY. So you recognize the need for variability but it would be up from a certain floor?

Mr. WEISS. That is right. But without the floor, pollution control would drop precipitously, as we found before 1972. That is why pollution controls did not work.

This committee back in 1972 and 1977 reaffirmed the uniform control approach, deciding that the case-by-case pollution controls simply did not work.

Mr. MOODY. Mr. McComb, anything to add to that?

Mr. MCCOMB. No, sir.

Mr. MOODY. Thank you very much.

Mr. ROE. I hadn't planned on taking too much time on this, but I think that the gentleman from Wisconsin has hit upon an extremely important point in the entire unfolding of our review and debate of this entire issue.

He speaks to—and we have had some exchange of views—what is economically achievable. I think that as we get into the philosophy and the engineering facts involved, that we miss that point.

We miss the point because I don't think when somebody is being poisoned that it is debatable whether it is economically achievable or not.

We have those systems existing right now, as you know, in the country. I am thinking about Love Canal. I am thinking about the dioxin issue.

In my own State we are drowning in dioxins right now. So what is going through my mind intensively listening to this initial review, and I plan on—and I know that my friend and I plan on calling you back again for further elucidations as we unfold more of an in-depth understanding of what the problem is. But the thought occurs to me along the line, and I have to say this, I think it is important, that half of nothing is nothing.

We can have all the ideas in the world, but if we are not going to put the economic resources to work to achieve those goals, it isn't going to happen. Particularly when we have a $198 billion deficit that we are faced with and that sort of issue, I know you have all spoken to and we are all aware of.

But then it comes down to the point does the health of the people, should the health of the people and the quality of the water they drink and put into their bodies to survive be a measure of a priority in a national deficit issue?

I am sad and sickened by the fact that we have reduced State aid from $4.5 billion down to $2.4 billion, as you know. And the fact that we have hundreds of projects, sewer construction projects throughout this Nation that are stopped or standing still simply because the resources aren't there to do it.

One thing I would like you not necessarily to discuss today but think about when we meet again as we unfold this situation again, is maybe we should be talking about resources for the essential needs of society.

You can't play all the instruments in the band. If Congress is going to make valid decisions, reflecting on interest rates and all the things, we have to come back some place and say we are kidding the American public and we are kidding ourselves and wasting our time unless the Congress of the United States is willing to recognize that water quality and the very life of people has to carry some super-position as far as priority is concerned. And it is not one of the things that can be mixed into all of the 10 thousand things we have to look at to run Government.

I would hope you would look to that issue. It doesn't have to do with donkeys and Democrats. It doesn't have to do with elephants.

The issue is, is it a 98 percent priority from the Harris polls? Is that what they want? Will they spend a hundred more?

Maybe we should be isolating or setting up some kind of special funding mechanism and saying that is something that belongs to the people's health. It is not something that falls in ten thousand other categories so that we are competing in bombs and I don't mean to bring that up or competing in other issues, in international trade and everything else, because if we don't have the water quality we are not going to have the production.

Mr. WEISS. Mr. Chairman, I couldn't agree with you more. One thing you mentioned is the need for more funding for the construction grants program.

One of the best features of H.R. 3282——

Mr. ROE. If the gentleman can just hold on that thought. Please pardon me for interrupting.

Mr. WEISS. Sure.

Mr. ROE. I am not so sure that more money anyplace solves problems unless it is properly directed. I, for one—and I can't wait until EPA testifies—am very disappointed, and you know that in the way they have carried out and taken so long.

Here it is 10 years later and we still don't have the toxic requirements that are needed to go ahead and get the job done in the first place simply because the agency didn't perform. Not the people who were supposed to be bad guys, so as to speak.

Mr. WEISS. Hopefully, that will be corrected under the leadership of this committee and H.R. 3282, which does restore money for the construction grants program.

We believe combining that with the excellent reforms made by this committee in 1981 in that program should lead to improved

sewerage treatment. Additionally, I would like to add one more comment about the Harris polls.

When people were asked "are you willing to pay $100 more a year in higher prices and taxes" to get clean water, 70 percent of the people said yes, they were.

But what they did not know is that that would, in effect, double their current contribution per capita to clean up water pollution. So folks were very willing to, in effect, double the amount of money that we currently pay.

Mr. ROE. All I am trying—I don't expect to come to a conclusion today. You know, we speak philosophically, but, you know, OK, but not in my backyard. I want you to think about, are we missing something?

The purpose of these hearings—and I am taking more time, if my colleagues would forgive me, the purpose of these hearings is not to rehash the old set of bones, if you will pardon the euphemism. It is not my direction to say what we did 10 years ago is right today.

I think you have all spoken excellently to that issue. We have learned. What I am simply trying to get at is I am not so sure changing language and adjectives and dates are the answer to the issue.

In fact, I am not so sure I believe they are. I do think we have to take another look and we have to come back and say where have we failed and why did we fail? In part, we have.

Was it lack of funding? Was it lack of knowledge?

Was it lack of administrative ability? Was it lack of political attention?

Was it trying to put part of the cost to the States that can't bear it? Do you understand what I am trying to get at?

So I think if I could leave you a charge in coming back for the next gathering is to look at that issue specifically, and be able to come back to this committee and say that if we truly are going to make the kind of investment that must be made to meet even these medium level achievements for the next go-round. Then where does it come from, and do we prioritize? Do we set up special funding?

Do we prioritize a funding mechanism that is not contaminated by budget deficits to that extent? How important is clean water and what investment do people want to make in it?

That can't be philosophical. That has got to be specific.

The gentleman from Georgia.

Mr. ROWLAND. Thank you, Mr. Chairman.

Is there any way that BAT is related to non-point source pollution?

Ms. NEWSOME. No; if you mean best available technology, those are the controls on industrial discharges that come out of a pipe.

Mr. ROWLAND. Right.

Ms. NEWSOME. For nonpoint pollution, the kinds of controls we are talking about are usually called best management practices. They are techniques such as contour plowing or no-till farming, rather than a treatment of a discharge coming out of a pipe. Is that what you were asking me?

Mr. ROWLAND. Yes, I think that is—best available management techniques refer more to the nonpoint pollution problem.

Ms. NEWSOME. Right.

Mr. ROWLAND. Thank you.

Mr. ROE. The gentleman from California, Mr. Packard.

Mr. PACKARD. Thank you, Mr. Chairman.

I note Mr. Weiss, in your testimony, or in your printed material, that approximately half the States are opposing this proposition. Why?

Mr. WEISS. Well, these States have a number of reasons. First of all, many of these States happen to have good clean water programs. California for example.

They see these regulations benefiting the less forward thinking States because those would be the States that have not yet cleaned up their waters, and would be able to weaken their water quality standards.

Their concern is that they have done a very good job or started to clean up their waters. States that have not done that would be able to take advantage of the situation.

Second, implementing these proposals at the State level would be extremely costly in terms of financial resources.

As you know, your own State is going through a budget crisis. That is true of States across the country.

Third of all, these States share a commitment to clean water and believe that the existing act is strong enough and the existing rules do the States a favor.

As Clint Whitney from the State of California said last fall, the Federal clean water act acts as a, gorilla in the closet. When a State wants to implement tough pollution controls to clean up their waters, and industry complains, the States can say, hey, the Feds behind me are making me do this.

These proposals, would change that gorilla in the closet into a monkey, and would make it very, very difficult for the States to say that. Then that would put them under great political pressure to weaken their standards or degrade their water.

Mr. PACKARD. Your polls show and your testimony indicates the people would be willing to pay $100 in taxes in order to clean up the water.

Yet in reality, we find all over this country where the people are crying out against higher and higher and higher taxes. This may be so because most of our polls are taken in isolation.

The issue is in isolation. At the same time, the people are being asked would they be willing to pay $100 more taxes for clean water, they are being asked for another $100 for more schools, another $100 for more parks, another $100 for this and that.

In States like mine, at least there has been a tax rebellion where they say, no, no more. Yet, we impose higher and higher regulations and requirements at the Federal level.

That is why there are 22 States that are opposing, because your second point was very much to target. They are reaching the point where they can't live and raise enough taxes in order to comply with all the regulations.

I am certainly not suggesting dirtier water or dirtier air or anything, but it is a dilemma. I guess the real answer is that we have

to strike a balance between what the people are willing to live with in terms of water quality, and what they are willing to pay for in terms of cleanup process and taxes.

That balance is not always best mandated at the Federal level. That is another reason that you have perhaps 22 States, alluding to your third point, and that is that some do a job on their own, and others don't.

It is a legitimate question that these States are asking. Why should we be penalized and have to come up with greater and greater stringent programs where there are other States that are not doing even up to a standard.

Mr. EDGAR. Would the gentleman yield?

Mr. PACKARD. Yes, be happy to.

Mr. EDGAR. Thank the gentleman for his comments. But I might indicate that I had an opportunity to speak before a large group here in Washington that had come from all over the country, talking about the issue of the Clean Water Act and its provisions.

It was the water office in California that came up to me afterwards and indicated the very point that Mr. Weiss was making. That is that they need strong regulations at the Federal level so that California in turn can keep some strong controls on their industry, both in best available technology and best available management.

I was struck by the fact that it was the California representative who represent the State agency, now under Republican leadership, who indicated they really respected the Federal Government's strong position on this whole act of clean water.

I think the gentleman does make an interesting point, that we are asking people for more and more taxes.

Surveys in my area indicate that while people want less and less taxes, they also want more and more services. They want the Government to come in and find the Love Canals and valley of drums and point source pollutions that are dirtying their waters.

There is not only what you indicated is a balance necessary, but I also think that in some instances, the word is not balance, but it is setting up some priority as to what is available for future generations.

One of the things that the Clean Water Act states is what is valuable for future generations is water that is swimmable, fishable, drinkable.

I thank the gentleman for his point. I just wanted to raise that point, that the California offices have been asking us for, to at least keep fairly strong provisions in place.

Mr. ROE. Will the gentleman yield?

Mr. PACKARD. Certainly, Mr. Chairman.

Mr. ROE. I think you are both coming on to the point I was trying to make earlier.

You know, when we had the confrontation which is unfolding vis-a-vis the point of view the toxic waste disposal mechanism, thinking of Superfund, we are talking of billions of dollars involved.

I mean the part of the concern was the $1.6 billion, although an enormous resource, was small in order of the magnitude of the problem the country is faced with.

The country is faced with those problems because we allowed it to happen. I use the pluralistic there because the Nation allowed it to happen. I think both the gentleman from California and the gentleman from Pennsylvania are thinking along the same line I am. Is that what kind of commitment to make? How do we make that commitment? How do we fund that commitment?

For example, and I just use this as a thought process, if there is a dollar checkoff that people can deduct from their taxes to go to participate in the democratic system to elect representatives, this is done in States now and so forth, and if we were saying to people, yes, if you are going to have a dollar or $5 checkoff, it will go specifically in a trust fund to improve the water resources of America and be allocated for that purpose and not in competition with general funding.

So people could at least in some way be selective to the area where they want to put some of their investment and be sure it goes to that area.

Mr. PACKARD. One other point, then I will conclude, Mr. Chairman.

One of the things I like about the work we do on this committee is that we evaluate projects and programs on the basis of cost/benefit. There is a ratio set up to make certain that projects fit within a criteria that means that we are getting our value out of the dollar that is spent.

In setting up regulations, I think we need to think in those terms also. It is easy to pull out of the sky a requirement that is very nice. It is a motherhood issue, but maybe totally unachievable in terms of dollar value.

I think that when we set up regulatory legislation, we ought to evaluate each parcel of that regulation in terms of its cost to benefit ratio.

We don't tend to do that when we think of regulation. We do in projects but not regulation. Somebody pays the bill on the implementation of every bit of regulation. That ought to be thought out in terms of, is the benefit worth the cost?

Mr. WEISS. Mr. Packard, it will reassure you, I hope, that a number of studies have indicated that the Clean Water Act has led to a net economic benefit because of the health problems prevented, because of the jobs created and that sort of thing.

Second, you mentioned earlier about the demonstration of commitment.

You know it is easy for people to tell a pollster that they want to pay $100 more for clean water. Well, for instance, the community of Providence, R.I., was faced with building a sewage treatment plant. The people there voted to tax themselves another $90 million to build that sewage treatment plant and clean up the Narragansett Bay. That was in a referendum and passed, I believe, with 60 percent of the vote a couple of years ago. So we also have these other sorts of indicators like real votes on bond issues as in Providence that indicate yes, people are willing to spend the extra $100, and not just tell Lou Harris that.

People are really willing to put their money where their mouth is, when it comes to clean water.

Mr. ROE. The gentlelady from New York.

Ms. FERRARO. Thank you, Mr. Chairman. I would yield to my colleague on the subcommittee.

Mr. ROE. I just asked him to yield to you because you are prettier than he is.

Ms. FERRARO. We were just discussing which one was stronger on the committee. I see that he wins.

I just wanted to associate myself with the chairman's remarks with reference to the costs of these things, and prioritizing seems to be the direction we are going to have to go.

I am a Lou Harris fan. Nonetheless, when I take a look at that poll, it would seem to me that what has happened is that the perception of the public has heightened regarding the problems of air and water pollution and I think that is terrific.

I think that has happened over the last several years because of things like Love Canal.

Again, when you get down to would you want to pay $100 more, you might want to if it was something you would see an immediate result for in your neighborhood as that referendum, but when you talk about raising people's taxes by $100 bucks and it just goes into the general treasury and they have to rely upon us down here, I don't know about people throughout the Nation, but I know how people in my district feel about that.

Let me say there is something else besides whether or not it is—the things we are talking about doing with reference to the Clean Water Act are available in terms of dollar value. There is something else. That is how do we settle the competing environmental problems? I think one of the things that occurred last week, Mr. Chairman when you and I participated in a meeting with reference to hot spots on the Hudson River. You know Mr. Weiss indicated EPA should identify and remove those hot spots. Then I believe it was Mr. McComb indicated storage and replacement of toxic waste is a real problem in the country, and it is.

What do we do? We go to the hot spots, pick them up and other people certainly don't want them put on their property. I don't blame them. I wouldn't either. What do we do with them? How do we get rid of them? We don't have an incinerator large enough to take that sludge from the bottom of the Hudson River. What do we do with that once we have it picked up unless we come up with an idea like the pet rock, you know?

But what do we do with it? So there is more than the money problem. There is the second problem of environmental concerns which arise.

Mr. WEISS. Hopefully in a situation like the Hudson River where you are going to require additional clean-up requirements of the dischargers, they are going to have to pay for cost of removing additional pollutants. That creates an economic incentive for firms to develop techniques that recycle or reuse their wastes, and in a way that produces some income.

For instance, there are electroplaters in Rhode Island that have to pretreat their wastes—remove the toxics before they discharge their wastewater into the sewers. What they have found is that they are recycling a lot of the metals they used to just discharge into the sewers as waste.

Mr. ROE. If the gentleman would yield, that is—and I respect your judgment and background—but that might be a little simplistic because let me tell you something.

When we had the meeting with the Senators and Representatives from both New York and New Jersey it hinged upon the quarrel as to what EPA was going to do to clean up those upper hot spots. Those are not hot spots that are being generated. They are there now.

A lot of the work we are doing is going back and cleaning up. Then it turned out the funding Moynihan had in his bill to get that work done was one confrontation. Superfund got into it and that was another confrontation. Would you believe under the same agency there were two exact opposite lists of criteria involved?

Here you have the same agency, two potential pieces of legislation; they had developed different criteria for the same issue. Total, utter frustration.

Inability to determine should it be capped. Should the material be taken out of there? Will the dredging of the—dredges create a problem where it will be disseminated throughout the water?

Should it be put on the land? What will it do to the ground water supply? It reminds me of the giant with the Lilliputians and the little pieces of thread. They couldn't use the thread to make a decision. There are 400 to 500 percent additional PCB's going into that river every day. So we are coming back and saying we are not satisfied in the decisionmaking process. You will pardon my enthusiasm. I meant to be quiet this morning.

What we have invested is billions and billions of the taxpayers' dollars and we have made progress and we have written laws and amended the laws and we have worked and we have amended and so forth. In a lot of respects, we are still playing with the same deck of cards.

In the meantime, not one spoonful of PCB's have been able to be taken out of that river because EPA, in its own way, won't allow it to be achieved.

Now, something is wrong with the process. Money isn't going to solve that. Philosophy isn't going to solve it. Somebody has got to come back and say, hey, fellows, it has got to be moved. I don't want to get into the whole business but that kind of sums up our debate that day.

Ms. FERRARO. Thank you, Mr. Chairman. It does exactly.

I think it points out the additional problem besides money. There are other problems we seem to create for ourselves.

Another question I had was with reference to urban, nonpoint source situation you brought up, Dr. Dysart.

On page 21 you talk about urban runoff. You say one reason for this lack of implementation in reducing nonpoint source pollution is the prevailing perception that the problem of nonpoint pollution is enormous and that remedy is extremely difficult to devise.

You say that perception is incorrect. Could you expand a little bit on that, because you do not further on in your testimony. You merely say that it can be controlled through management practices targeted at those areas.

Dr. DYSART. I think the reason the perception is there that it is so great, so large, is that for many years, for decades, the Congress,

the environmental engineering profession, the State agencies, consulting engineering firms, have been coping with point source pollution. So I think people are much more comfortable in feeling that they know how to approach that. I think many of the institutions and individuals who were doing a good job with point source pollution have not paid too much attention to nonpoint source pollution.

This has been related to other agencies of government, other committees of the Congress, other professions, other areas.

I think that now the problem appears to be so enormous because we haven't been working on it so long.

In my own opinion, this is simply a matter of what we refer to in environmental engineering as unit operations, unit processes, physical, chemical, biological processes can be brought to bear on this.

In my own opinion and the federation's opinion, a great deal of the technology of the design and engineering profession and the agencies of Government can be brought to bear on this if, as I said in my testimony, there is a commitment on the part of the Congress and everyone else that this is going to be dealt with.

Do you have anything to add, Sharon?

Ms. NEWSOME. Well, I would just add that under section 208 of the Clean Water Act between 1974 and 1981 all of the States participated in developing plans which included management practices and techniques for controlling runoff and controlling nonpoint pollution.

Forty-nine of the States in fact had their plans approved, and so, by saying that we now are at a point where it looks enormous but it is not, really. I think what we are saying is that a lot has been done, a lot of study has been done.

These techniques and management practices have been identified, but very few States are using or implementing those practices.

Ms. FERRARO. Is that because of the costs?

Ms. NEWSOME. In some cases there is little or no cost for the management practices. In some cases they are merely a different way of doing things. For the Department of Agriculture they have been working on soil erosion for 30 years. In many cases it is just that some farmers are doing a good job of controlling soil erosion, while others are not.

We just need to get more people doing the right thing.

Ms. FERRARO. I guess I really was talking about urban runoff when I asked about costs because I would assume that some of those pollutants come from stuff that is used by us in the city to de-ice our streets when it snows, and bridges and stuff like that. Is that the type pollutant you are talking about?

Ms. NEWSOME. Yes, I am. Under the national urban runoff program, that is being run by EPA, they are looking at 28 metropolitan areas. What they are finding is that in most cities you can control runoff from a few areas, and control most of the problems.

For instance, industrialized areas of the city often contribute most of the pollution because that is where you are getting most of your chemicals and where they often have disturbed land that is not covered with grass or whatever, and that, by controlling runoff in those areas, either through cachement basins, or some other ways of holding the water to let it settle, you can control the runoff and how much contaminants you have in it.

They have also found that in residential sections those areas that are very dense, where perhaps litter pick-up and trash pick-up is not as good as it is in other sections, those sections are producing most of the contaminants. So that you don't have to have a very intense program throughout a city, but you can target the use of your funds and your practices for those areas.

Ms. FERRARO. Thank you very much.

Thank you, Mr. Chairman.

Mr. ROE. The gentleman from Pennsylvania.

Mr. EDGAR. Thank you, Mr. Chairman. I want to thank all of the panelists for their contribution this morning and particularly I want to thank the panelists for their specific recommendations.

I noted, for example, the recommendation on section 505 to make that comply and allow people to have an access throughout the courts.

I will try to get some more definition for the amending process. I think that is an appropriate process for looking at the legislation. I think what I have heard generally from you all is that you like the fact that this committee has come up with a bill that is generally favorable in the area of the Clean Water Act. Is that not correct?

Dr. DYSART. That is correct, Mr. Edgar.

Mr. EDGAR. I wonder if I could get us to focus on two other issues that are before us in the next couple of days?

One, we don't have to spend any time with. That is the fact that on the RCRA bill which is going to be on the floor later this week, I will offer an amendment which has the support of our chairman and also Jim Florio, who is chairman of the subcommittee that deals with resource recovery to establish a national ground water commission, and we need your help in talking with the members' offices about the value of the problems we face and the need for good analysis in the whole ground water and infiltration of that ground water supply.

But the second point I want to make, and I think is much more important; that is, tomorrow we are going to mark up a bill in this subcommittee dealing with an omnibus water bill. Over the past couple of years, many of you and your staffs have worked with me and others to try to hold up the process of an omnibus water bill because of policy concerns we have.

We have been talking this morning on clean water about policy concerns, best available technology, best available management techniques, whether dates should be put in place.

I am sure when the Clean Water Act was first put in place, there were some hopes, and it didn't go as far as everybody wanted it to go, but you know we have been working with it and nourishing it over time.

But it was a significant step in the right direction.

I would like to suggest that the bill that Congressman Roe and Congressman Stangeland and others have worked on that is going to be dealt with tomorrow is a very similar bill. That, in fact, if you think of it in terms of a hundred mile distance, and the fact that for the last 20 or 30 years in Congress we have been at the 20-mile mark, namely, in the way we have selected projects, the way we have argued about specific projects being negative, not always meeting the cost/benefit ratio, a lot of times in the legislation

waiving the cost/benefit ratio and approving projects because of certain special interests or individual members who have particular priority, I think that the bill we are going to be marking up tomorrow moves us almost to the 80-mile mark.

That is, we deal with a minimum cost-sharing of 25 percent, from zero to 25 percent makes a lot of sense to me. We deal with water supply in terms of a loan fund to provide replacement of water supply systems.

We deal with the cost sharing above 45 feet, not as much as some of the environmental community would like, but at least force 50 percent of that cost-sharing on to local communities.

We do put an environmental protection and mitigation fund together, putting emphasis on mitigation.

We have funds in there for the Tennessee-Tombigbee waterway mitigation plan. All of us have been angry about that project. It is now about to be completed.

At least we are going to mitigate some of those funds.

We go on further in that bill to establish the National Board on Water Resource Policy to try to return back to at least some principles and standards in the legislation.

We deauthorize almost $11 billion of projects. They are not all the projects that some of us would like to deauthorize, but I think we at least say that deauthorization is not a dirty word; that there can be a process put in place to deauthorize all these projects. Now, there is another 20 percent we would like to go.

Perhaps more cost-sharing, perhaps trying to weed out some of the individual projects that might be in this bill that are a problem. There are some amendments that are going to be offered to look at some of the issues that are raised by the bill, but I guess I am making a statement more than asking a question, and that is that I think those of us who have tried to carry a lot of the environmental concerns and issues have to begin to look at ways in which we cannot only be positive, but work with some of the people in our community to understand that we may have in fact made some headway.

For example, I think we might want to celebrate some of the specific reforms in the legislation and not get ourselves in the position of being confronted later with a much worse bill if we don't move in this direction.

I wanted to take this time to share this with you because it seems to me we have little time to fashion the bill that we are working on. We are under great time pressures. We will be in an amending process tomorrow. We will need a great number of your staffs involved in the process and looking at amendments. I hope as you go back and look at the bill real carefully that you will kind of measure the positives versus the negatives in the legislation because my experience in the brief 9 years that I have been here is that it is the first time that we have been able to get this committee and the Congress to deal seriously with policy decisions.

All along I think it has been, at least most of the environmental concern, that the Nation develop a national water policy, that we list out some policy options, that we know what ground rules are and that we get away from kind of the business as usual process here.

So I am making the argument that I think we are going at least in the direction of the 80-mile mark and that the last 20 miles we can fight another day.

So I urge your help and support, at least in those positive areas we have been working for over all of those years.

Mr. WEISS. Well, similarly we are at the 60-mile mark with the Clean Water Act, and the Howard bill, H.R. 3282, would take us to the 80- or 85-mile mark.

Mr. EDGAR. Thank you. I yield back my time.

Mr. ROE. Are there any other questions of the panel?

We want to thank you very much. We have kept you longer than we intended to, but I think your contribution has been extremely important.

Please review some of the thoughts we have had a chance to exchange. We are going to look to be calling you back when we meet again in September.

Mr. WEISS. Thank you, Mr. Chairman.

Mr. MCCOMB. Thank you very much.

Mr. ROE. I realize it is a few minutes after twelve. Be that as it may, the committee is going to go right on through because we have had witnesses waiting quite some time now. Time is our enemy.

Our next witness is Mr. Paul Freese, chairman of the Water Pollution Control Federation government affairs committee, to be accompanied by Mr. Robert A. Canham, executive director.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY ON 1983 AMENDMENTS TO THE CLEAN WATER ACT FROM PAUL V. FREESE, CHAIRMAN OF THE WATER POLLUTION CONTROL FEDERATION GOVERNMENT AFFAIRS COMMITTEE

INTRODUCTION

Good morning Mr. Chairman and members of the water resources subcommittee. I am Paul V. Freese, chairman of the Water Pollution Control Federation's government affairs committee. With me today is Mr. Robert A. Canham, executive director of the Federation, and Mr. Andrew E. Stevenson, director of public affairs.

Our president, Mr. Charles H. Jones regrets that he is unable to present our testimony in person. He has asked me to share the Federation's thoughts with you today. I am happy to do so.

You are probably aware that the Water Pollution Control Federation is the largest nonprofit, educational and technical association in North America that deals with clean water issues. Our 30,000 members come from all portions of the professional spectrum. The Federation is composed of 44 State and regional associations in the United States and Canada. It is also affiliated with 21 similar organizations around the world.

WPCF is not a lobby. It is a forum in which clean water professionals can discuss all aspects of a national campaign to improve and maintain water quality. Consequently, my remarks represent the general opinions of a majority of our membership and, I believe, of professionals across the country.

PROGRAM AUTHORIZATIONS

WPCF supports the research, development, and training programs contained in Section 104, 106, 112, 314, and 517. The Federation believes that the training and manpower forecasting programs in Section 104(u) and the State management programs in Section 106(a) contribute directly to the goals and objectives of the Act. WPCF also suggests that the Clean Lakes program of Section 314 deserves to be continued.

The programs in these sections support effective management of many other activities, the NPDES permit and the municipal construction grant programs among them. They also support continuing research into some of the basic questions about pollutants. These questions must be answered if our knowledge of the problems is to grow. Training programs are important because they prepare the next generation of pollution control professionals. As a minimum, WPCF recommends continuing these programs at their current authorization levels. We will need technically skilled people who are willing to make wastewater control a career if this country is to receive the full benefit of all clean water programs in the years to come.

MUNICIPAL CONSTRUCTION GRANTS

WPCF supports continuation of the municipal construction grants program. Two position papers—one from 1981, one from 1982—describe a plan for completing that program.[1] In fact, the 1982 position was a direct result of a question put to the Federation by a member of this committee in 1981. Briefly, the Federation recommends that Congress take the following steps when it consider reauthorizing the program:

(1) Set a completion schedule for the program;

(2) Endorse the concept of self-supporting municipal treatment authorities that can finance maintenance, operation, and capital improvements on their own, after they have met the requirements of the Act;

(3) Reaffirm its original intention that the grants program is a "one time only" opportunity for municipal treatment authorities.

The Federation developed these suggestions after much internal discussion. They represent a majority opinion of the membership. We believe they are compatible with the 1981 amendments to the construction grants program. The Federation's rule of thumb is this: Congress should support the grants program with appropriations that will meet the basic treatment needs that remain.

AREAWIDE PLANNING PROGRAMS

WPCF supports continued federal funding for regional and areawide planning. As technology-based controls are supplemented with water quality-based controls and nonpoint sources become more important, such programs will be important ways to coordinate monitoring, analysis, standard-setting, and enforcement.

NONPOINT SOURCE PROGRAMS

Pollution from urban and rural nonpoint sources (NPS) may prevent some streams from meeting their designated uses. Whether instances of such pollution are widespread enough to constitute a national problem remains to be seen, however. Nonpoint sources are difficult to control with conventional treatment systems and "end-of-pipe" technology. Each situation has unique features that must be assessed before controls are applied. For these reasons, a decision to create a national control program cannot be made lightly.

WPCF issued its first position paper on rural nonpoint sources in 1981.[2] At that time, the Federation concluded that too little was known about the various forms of the NPS problem to permit setting national control levels. Despite the many hundreds of research and demonstration studies that have been done on different aspects of the problem, this country still does not have a central information source at which studies can be compared and coordinated. Therefore, one of the first steps to take is collecting and analyzing the information that we already have.

A second aspect of the problem that this committee should be aware of concerns the benefits that NPS controls produce. In some cases, obtaining one benefit can mean giving up another one. As our position paper states:

"Unfortunately, not all of these benefits can be realized at the same time in every case . . . Sediments fill up reservoirs, reducing their storage capacity and shortening their useful lives. Controlling sediment flows into reservoirs can prolong their lives. But sediments also bind pesticides, excess nutrients, and even toxic chemicals. Caught behind a dam in bottom silts, these pollutants do not affect water quality farther downstream. Slowing the buildup of sediment also slows down the removal

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[1] "Phasing out the federal construction grants program: a sequel to 'Funding national water pollution control programs';" Journal Water Pollution Control; December 1982; page 1539 ff. and "Funding national water pollution control programs;" Journal Water Pollution Control; April 1981; page 430 ff. Available as separate reprints.

[2] "Controlling rural nonpoint source pollution;" Journal Water Pollution Control; April 1981. Available as a separate reprint.

of other pollutants. When is sediment control more important than pesticide, nutrient, or toxic removal?" [3]

Mutually exclusive benefits occur in other instances as well. Groundwater recharging, for example, may be possible only at the expense of controlling euthrophication and steamside ecological systems. In another situation, salinity control might require changes in the types of irrigated crops grown because control could keep more salts in the soil.

The question of salinity brings us to the third aspect of the NPS problem that will interest this committee. In many rural and agricultural settings, nonpoint sources are not thought of as pollutants. Over time, people making their livings in such settings adjust to the phenomenon and even use it to their advantage. Irrigated farming operations, for example, accept increased salinity as a consequence of their production methods. And the consumer benefits from this trade off. Are controls worth the price we might pay by changing crops or raising prices on crops that require more water? Answering this question goes beyond the issue of water quality.

We can also ask this question of other activities that contribute to the NPS phenomenon. It is relevant to silviculture, to pesticide application, and to fertilizer use. Controlling a water quality problem may mean creating some other type of problem. WPCF suggests that Congress needs more information about the ramifications of such controls before requiring them as federal policy.

While we are still some distance away from collecting and synthesizing the knowledge we have gained on rural nonpoint sources, U.S. EPA has made good progress toward improving our knowledge about urban runoff. In 1982, the agency published preliminary results of a study called the Nationwide Urban Runoff Program (NURP). Final results have yet to be published, but the data gathered under that project exceeds all prior studies in its depth and validity, according to NURP's managers.

The tentative conclusions of that study will interest this committee. We do not present them as the last word on urban runoff, but they do appear to be the latest word. For example, on the question of how runoff affects fresh water aquatic life, the study notes that:

(1) Half of the substances on EPA's priority pollutant list sometimes occur in urban runoff.

(2) Heavy metals such as cooper, lead, and zinc appear more frequently than organic pollutants from the list do.

(3) High concentrations of heavy metals are found frequently enough in urban runoff to pose some chronic risk to beneficial uses. But the degree of risk is not great enough to become a serious local concern.

I will not take any more of this committee's time to also present the tentative conclusions about impacts on the other beneficial uses of marine aquatic life, recreation, and public water supply. They are summarized well enough in Chapter 6, Volume I of the project. Generally speaking, however, project managers have concluded at this point that most beneficial uses are not being systematically denied for long periods of time. Where urban runoff creates water quality problems, they seem to be local in nature. They do not appear to warrant a national control program. Given our knowledge about rural and urban nonpoint sources at this time, WPCF does not recommend that Congress create a national control program for either aspect of the problem. For rural and agricultural nonpoint sources, we need to review the data and information we already have. For urban nonpoint sources, we need to complete the EPA study already underway and then move on to evaluate runoff controls.

DEADLINES; FOR EFFLUENT LIMITATIONS AND PERMIT COMPLIANCE

In 1982, WPCF testified before this committee in support of extending the compliance deadlines for direct industrial dischargers.[4] We do so again this year. The Federation feels that final promulgation of the effluent limits remaining from the 1976 consent decree is a highly urgent matter. The exact length of a permit extension will depend on the resources Congress directs EPA to expend on promulgating those limits. Therefore, WPCF reserves judgment on proposals for a flat 3-year extension of the current deadline of July 1, 1984.

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[3] "Controlling rural nonpoint source pollution;" op. cit., page 9 of the reprint.

[4] "Testimony of E.J. Newbould, WPCF President, before the House Public Works Water Resources Subcommittee, July 28, 1982, regarding H.R. 6670"; available on request from the Water Pollution Control Federation office of public affairs.

OCEAN DISCHARGE WAIVERS

WPCF favors the consideration of ocean discharge as a possible alternative to secondary treatment, where circumstances permit. The Federation accepts the criteria in Section 301(h) as a reasonable basis for reviewing applications for waivers. We understand that some congressional supporters of a strong Clean Water Act are afraid that existing language can be interpreted to allow applications for discharges that would be of less than primary quality. WPCF does not support such an interpretation. As a profession, our understanding of marine ecology is too limited to justify the short-term benefits that such dischargers would bring to individual communities at the expense of longer term marine water quality.

WPCF supports the requirement that water quality standards must exist for the specific pollutants covered by a waiver. It supports the need for a biological monitoring system whenever a waiver is granted. It agrees that applicable pretreatment requirements must be enforced and that a program for reducing or eliminating toxic pollutants from nonindustrial wastes must also be required. And finally, the Federation strongly supports the requirements that modified discharges should not be allowed to add to the treatment needs of other point and nonpoint sources.

WATER QUALITY STANDARDS

In April 1981, WPCF published a position paper entitled, "Improving Water Quality Criteria and Standards." [5] In it we suggested four steps to improve water quality standards. The first step had already been taken by EPA while our position was still in draft form: "presumptive applicability" was eliminated from the regulations. Three steps remain. They are:

(1) Developing concise descriptions of the water quality investigations that are needed to create and revise accurate standards;

(2) Spending more time on local water quality investigations; and

(3) Finding constructive ways to enforce the standards-setting program.

On October 29, 1982, EPA published proposed revisions to its water quality standards regulations and invited public comment on those changes. WPCF reviewed the changes and responded officially on February 9, 1983.[6] In general, the Federation supported the changes that EPA proposed. At the time, we felt that the revisions would fulfill the remaining three steps in our 1981 position paper. We still believe that to be true.

Since EPA's 1982 announcement, however, reactions among congressional supporters of the Act have been negative. Some people are concerned that the agency was "backing off" of the gains made with technology-based standards. They apparently fear that EPA's proposal will open the way to wholesale downgrading of designated uses and thus undercut the need for further pollution control. WPCF does not believe this would be the case.

But the fears of congressional critics can not be soothed by debating the way a regulation may be interpreted and applied. When such critics become convinced that regulations will weaken a program rather than strengthen it, the real question is how much does one trust the implementing agency? Earlier this month, EPA Administrator Ruckelshaus took steps to restore that trust. He submitted a new version of the revisions to OMB for clearance. Press reports on the new proposal indicate that it is designed to allay the fears and answer the criticisms created by the original notice. More recent reports state that OMB has approved the proposal.

WPCF commends Mr. Ruckelshaus for his actions. The water quality standards program is a complex one. It is not fully understood by many people in the water pollution control profession, even today. Working together through informal meetings, legislative and executive branch specialists can, we are sure, arrive at a new set of regulations. Rather than codifying existing regulations or freezing the designated uses already set, WPCF recommends that Congress encourage negotiations between the two branches of government and review the final product.

NPDES PERMITS

WPCF supports changes that will allow States to accept partial delegation of the NPDES permit program. The Federation also supports the creation of 10-year permits. Renewal programs now have a backlog of 5-year permits to review. Allowing

[5] "Improving water quality criteria and standards"; Journal Water Pollution Control; April 1981. Available as a separate reprint.

[6] Letter from Charles H. Jones, WPCF president, to David Sabock, U.S. EPA Office of Water Regulations and Standards; February 9, 1983.

10-year permits will help to reduce that backlog. It will relieve reviewers of the need to check dischargers whose effluent characteristics remain stable for many years. All permits have a "reopener" clause that allows the issuing authority to make any changes that might be necessary during the life of the permit. Thus, WPCF does not believe that a 10-year period will delay the adoption of new controls or the addition of new pollutants when they are needed.

WATER POLLUTION CONTROL FEDERATION,
Washington, D.C., February 9, 1983.

Subject: Comments on U.S. EPA's October 29, 1982 Notice Regarding Water Quality Standards Regulation, 40 CFR Parts 35, 120, and 131; as Published in 41 FR 210, pp. 49234-49252.

Mr. DAVID K. SABOCK,
Criteria Branch, Office of Water Regulations and Standards, U.S. Environmental Protection Agency, Washington, D.C.

DEAR MR. SABOCK: This letter addresses nine major policy changes in the U.S. Environmental Protection Agency's (U.S. EPA) October 29th notice. It does not comment on the specific language of the regulations to be revised. In general, WPCF believes the policy changes proposed will improve the current program. The Federation's evaluation of the agency's October 29, 1982 proposal is based on a position paper entitled "Improving Water Quality Criteria and Standards," published originally in the April 1981 edition of Journal WPCF. A copy of the position is enclosed for the record.

The Water Pollution Control Federation (WPCF) is a non-profit educational organization devoted to developing and distributing information concerning wastewater pollution control. WPCF accepts no money from the federal government for any of its activities. It is composed of 44 member associations in the United States and Canada, and is affiliated with 21 other organizations around the world which share similar objectives. Over 30,000 professionals belong to WPCF, either through these member associations or directly.

Over two years ago, WPCF began investigating the problems that the profession faced when developing water quality criteria and standards. The April 1981 position was the culmination of that investigation. Since EPA's October 29, 1982 notice deals almost exclusively with water quality standards, this response deals primarily with the same subject and tangentially with water quality criteria. WPCF maintained in its position that four major steps had to be taken to improve the water quality standards program. Those steps are:

One, eliminate the policy of presumptive applicability.

Two, explain clearly what it takes to do valid water quality investigations.

Three, spend more time and effort on local water quality investigations.

Four, find constructive ways to enforce standard-setting programs.

Eleven specific recommendations to execute the four steps were also offered in the position.

Where the WPCF position and the U.S. EPA proposal address the same issues, they are compatible. The first step—eliminating the presumptive applicability policy—was actually taken by EPA before our 1981 statement was formally adopted. The second step—explaining the requirements of valid water quality investigations—will be taken when the agency decides to publish a final version of "Water Quality Standards Handbook," provided that guidance includes adequate treatment of the processes for calculating total maximum daily loads (TMDLs) and wasteload allocations (WLAs). The third-step conducting more local water quality investigations—will be promoted by the agency's decision encouraging States to concentrate their resources on a small number of high-priority, water quality limited segments.

It is evident that where the U.S. EPA proposal and the WPCF position address the same issues, they are compatible. Moreover, WPCF perceives in the agency's initiative that another common goal is shared: The adoption, at a later date, of means to forge an enforceable link between in-stream water quality standards and discharge permits. The Federation recommends that work to reach this goal begin immediately.

Details of the areas in which WPCF and U.S. EPA agree are presented below. They are listed in the order of the agency's nine major proposed changes.

1. FOCUS ON PRIORITY WATER BODIES

WPCF agrees with the proposal to end the current requirements that States review all their water quality standards every three years. States must be encouraged to focus their reviews on priority water bodies, especially those segments that are water quality limited. EPA's proposed change recognizes the constraints under which most State agencies must operate and quite properly emphasizes a review system that should result in improved water pollution control.

2. USE ATTAINABILITY

WPCF concurs with the new procedure by which States can examine the designated uses of a given water body and revise those designations if the uses cannot be attained. The proposed process includes assessing the benefits and the cost of attainment for each water body investigated. Both the attainability analysis and the benefit-cost analysis are designed to involve all interested and affected parties. WPCF supports this change with the qualification that analyses involving evaluations of nonpoint source pollution must be reviewed very carefully, given the profession's general lack of information about such sources. (For WPCF's position on nonpoint source control, please refer to the enclosed position paper entitled "Controlling Rural Nonpoint Source Pollution.")

3. TYPES OF CHANGES TO DESIGNATED USES

WPCF supports the proposal to abandon the use of the term "upgrade" and "downgrade" when referring to changes in designated uses. These terms and ambiguous because water bodies often have more than one use. States should be allowed to "add," "remove," or "modify" a designated use under certain conditions. WPCF took this stand in its position paper, saying:

"EPA and state agencies consider defining special water use designations and developing appropriate criteria for: special aquatic habitats, headwater, intermittent streams, and streams containing naturally high levels of dissolved solids or other constituents."

4. LEVELS OF AQUATIC PROTECTION

WPCF approves of U.S. EPA's proposals to allow States to define subcategories of aquatic protection within each use. Such subcategories would specify different levels of protection. This change will result in the need to develop water quality criteria for the subcategories created and is consistent with the notion of modifying a designated use as described above. WPCF supports the change proposed.

5. DEVELOPING SITE-SPECIFIC CRITERIA

WPCF concurs with U.S. EPA that States should be able to modify the criteria for specific segments if a thorough survey of the water body shows conditions support the designated use, even though the existing criteria are not being met. Criteria derived from models uncalibrated for local conditions do not reflect reality. To quote from the Federation's position:

"Analyzing the wasteloads for water quality-limited streams using verified mathematical models that are calibrated with local information.

"Consider setting aside some of the stream's capacity as a reserve for future discharges and as a hedge against error or inaccuracies in the predictions made with the model."

This change follows naturally from the 1980 decision to rescind the presumptive applicability policy. It is consistent with U.S. EPA's proposal encourage States to draw up site-specific criteria that reflect local water quality characteristics.

6. ANTIDEGREDATION AND MAINTENANCE OF EXISTING USES

U.S. EPA's proposal includes the existing antidegradation policy and three alternatives. The agency favors Option 1 over the existing policy or Options 2 and 3. Options 1 and 2 and the existing policy are all compatible with Federation sentiments on the antidegradation issue. The Federation's position on this question is based on a policy adopted by WPCF in 1960. In part, the 1960 position says: ". . . National survival—in terms of future urban, industrial, and commercial growth and prosperity—dictates the protection of all water resources from any acts, such as the discharging of harmful substances, which cause unreasonable impairment of water quality and adversely affect their highest levels of usefulness."

7. PROTECTION OF OUTSTANDING NATIONAL RESOURCE WATERS

EPA proposes to remove that part of the existing regulations which provides for the designation of "outstanding national resource waters" on the grounds that such a designation is not provided for by the statute. WPCF's views on this subject are expressed in item 6 above.

8. GENERAL POLICIES

Current regulations do not recognize the ". . . general policies applicable to States' water quality standards," to use EPA's own phrase. The agency proposes to encourage States to adopt policies that ". . . are generally applicable to a State's water quality standards program such as policies on mixing zones, variances, and low flow exemptions." WPCF does not take a position on this proposal as a general change.

Some of the issues EPA desires to treat as general policies appear consistent with Federation objectives. But the proposed variance to individual dischargers based on economic hardship is difficult to understand. The notion of granting a variance from a water quality criterion (as opposed to a standard) appears to have little value. For one thing, criteria apply to bodies of water, not discharges. For another, criteria do not have the force of regulation or law, so it is not clear how receiving a variance from one would change a discharger's permit requirements.

9. REVIEW AND APPROVAL

EPA proposed to define more precisely the approval process for State water quality standard. The agency's detailed recommendations on this point go beyond the scope of the Federation's position.

Under the current regulations, EPA and the States have had to negotiate their disagreements over a particular standards. The proposed change appears to do little to make the negotiation process any shorter or less complex. This may be due to the difficulty of writing exact regulations for an activity—such as negotiating—that is fluid and somewhat unpredictable by its nature. The element of "good faith" is critical if negotiations are to work efficiently, but good faith cannot be written into regulations.

For this reason, WPCF believes that time will tell whether the proposed change is better than the current policy. The Federation only offers the observation that the proposed regulation appears to place the burden of proof in any dispute on the State. This is precisely where it lies under the existing system.

ADDITIONAL EPA ISSUES

WPCF wishes to comment on two remaining points in this letter. First, under its discussion of antidegradation alternatives, U.S. EPA specifically requests examples of instances where the existing policy has precluded—or might preclude—economic development. WPCF has no cases to offer, since collecting examples of such occurrences is outside the scope of its present activities. However, it is fair to say that instances of the type the agency is interested in have not been brought to the attention of Federation leaders or staff members.

Second, WPCF commends U.S. EPA for publishing a draft edition of the first in a two-volume set entitled "Water Quality Standards Handbook." The draft of the first volume conveniently assembles much of the information needed to carry out the changes proposed in the October 29th notice. WPCF reserves judgment on specific procedures contained in that draft until a draft of volume two (dealing with field tests of water body surveys and tests of the benefit-cost procedure) is released.

Two other documents related to the "Handbook—Wasteload Allocation Guidance" (in draft form since 1981) and the "Benefit-Cost Assessment Handbook" (in draft form since November 1982) are also important. Taken together, these four publications are supposed to completely describe all that is needed to implement to the proposed policy. WPCF recommends publishing the final versions of these documents before a final revised rule on water quality standards is promulgated.

In conclusion, the Water Pollution Control Federation appreciates the opportunity to comment on this action. WPCF congratulates U.S. EPA on the effort that went into preparing the revisions. The Federation believes that the proposed water quality standards program will be more effective than the existing program.

Sincerely,

Charles H. Jones, President.

Mr. ROE. Please proceed.

TESTIMONY OF PAUL V. FREESE, CHAIRMAN, WPCF GOVERNMENT AFFAIRS COMMITTEE, WATER POLLUTION CONTROL FEDERATION, ACCOMPANIED BY ROBERT A. CANHAM, EXECUTIVE DIRECTOR, AND ANDREW STEVENSON, PUBLIC AFFAIRS MANAGER

Mr. FREEZE. Thank you, Mr. Chairman.

Mr. ROE. Now, if I can offer a suggestion, you understand the time restraints. We don't want to reduce you; we will be calling you back anyway. I would ask unanimous consent your testimony be included in full in the record, but give us a summary so we have a few minutes to be able to exchange thoughts with you so our time is productive.

Mr. FREEZE. Good morning, Mr. Chairman. I am Paul Freese. I am chairman of the Water Pollution Control Federation, government affairs committee. The executive director of the federation, Mr. Canham, is here on my right.

Behind me here is Mr. Andrew Stevenson, the public affairs manager for the federation. I will just summarize my points of my formal statement which you have. The order of the topics that I would like to mention are in the same order as they appear in the Clean Water Act.

The first is on program authorizations, the federation supports the training and R&D programs contained in sections 104, 106, 112, 314, and 517. The federation believes that the training and manpower forecasting programs in section 104(u) and the State management programs in section 106(a) contribute directly to the goals and objectives of the act.

WPCF also suggests that the clean lakes program of section 314 deserves to be continued.

The programs in these sections support effective management of many other activities, the NPDES permit and the municipal construction grant programs among them. They also support continuing research into some of the basic questions about pollutants. These questions must be answered if our knowledge of the problems is to grow.

Training programs are important because they prepare the next generation of pollution control professionals. As a minimum, WPCF recommends continuing these programs at their current authorization levels.

Under municipal construction grants, we also support continuing the municipal construction grants program.

We recommend, however, that Congress take the following steps when it reauthorizes this program.

First, set a completion schedule for the program;

Second, endorse the concept of self-supporting municipal treatment authorities that can finance maintenance, operation and capital improvements on their own after they have met the requirements of the act;

Third, reaffirm its original intention that the grants program is a one time only opportunity for treatment authorities.

I will not speak at this point in any detail on that. We will respond to questions if you have some.

On the areawide planning programs, the federation supports continued Federal funding for regional and areawide planning. As technology-based controls are supplemented with water quality-based controls and as nonpoint sources become more important, such programs will be important ways to coordinate monitoring, analysis, standard-setting, and enforcement. Nonpoint sources are becoming more important, as we have heard this morning. Intergovernmental programs such as those in section 208 are needed. Under the nonpoint source program there are several aspects that this committee will have to address if it decides to call for additional legislation in this area.

We need a centralized operation to collect, compare and use the results of existing research programs. Hundreds of projects have already been completed and we need to analyze that information before directing that more studies be done.

Some situations where nonpoint source controls have been considered, it appears some of the benefits are mutually exclusive.

Environmental Protection Agency has made progress in assessing the problem of urban storm water, mentioned just a few minutes ago. Preliminary conclusions from one study suggest that most beneficial uses are not being denied for long periods of time. The problems seem to be local in nature. Thus the Water Pollution Control Federation does not recommend that Congress create a national control program for urban runoff.

We do recommend, however, completion of the nationwide urban runoff project, from which the preliminary conclusions came.

Under deadlines for effluent limitations and permit compliance, we support extending the promulgation deadlines for effluent limits.

The federation feels promulgation of the remaining limits is an urgent matter. EPA needs the full support of Congress in order to finish this job. Since compliance is a function of promulgation, WPCF suggests the period for compliance be based on when they are promulgated.

Under ocean discharge waivers, we favor considering ocean discharge as an alternative to secondary treatment where the circumstances permit. We accept the criteria in 301(h) as safeguards for marine water quality, but we do reject any interpretation of existing language that suggests applications for discharging anything less than primary effluents are permitted. Under water quality standards, recently congressional concern about the implications of EPA's 1982 proposal for revising water quality standards has grown. WPCF believes at this point that the legislative branch must trust the executive branch or no improvements in the current program are going to be possible.

Mr. Ruckelshaus has taken steps to restore that trust. WPCF recommends that the committee wait for the final product in negotiations between EPA and congressional experts before making any changes in the law.

Under NPDES permits, WPCF supports changes that will allow States to accept partial delegation of the NPDES permit program. WPCF also supports the creation of 10-year permits. We feel both steps will contribute to reducing permit backlogs and increasing the amount of attention that goes into each permit review.

I thank you, Mr. Chairman, for the opportunity to present these thoughts to you.

My formal statement has been supplied to you. If there are any questions, Mr. Canham or myself will be glad to try to answer them.

Mr. ROE. We too want to thank you for your comprehensive presentation which basically tracks the legislation itself. I don't have any questions at this time.

Are there any questions from the gentleman from Minnesota?

Mr. STANGELAND. Thank you, Mr. Chairman. Just a couple.

On page one you note that the Water Pollution Control Federation suggests a clean lakes program under 314 deserves to be continued. I think you will find a great deal of support on the subcommittee for your position.

Would you kindly provide, either here or for the record, a little more detailed explanation of why you believe the clean lakes program is important and why it should be continued?

Mr. FREEZE. We will be glad to furnish that to you.

[The information received follows:]

WATER POLLUTION CONTROL FEDERATION,
Washington, D.C., September 9, 1983.

Hon. ARLAN STANGELAND,
Longworth House Office Building,
Washington, D.C.

DEAR MR. STANGELAND: On Tuesday, August 2nd, during hearings before the water resources subcommittee, you asked three questions of Mr. Paul V. Freese, a witness for the Water Pollution Control Federation. Mr. Robert A. Canham, our executive director, has asked me to respond to your inquiries.

Why should Congress continue funding for the Clean Lakes Program?

The Clean Lakes Program is authorized by Section 314 of Public Law 92-500. It was created in 1972, when Congress recognized the need to support the restoration of freshwater lakes across the nation. Several thousand publicly-owned lakes were in desperate need of resuscitation by the middle of that decade. And U.S. EPA realized that the funds available could not meet all of the identified needs. Thus the agency set as its objective the restoring and protecting of at least one lake within 25 miles of every major population center. Now, 10 years and $70 million later, EPA's goal is well on the way to being achieved.

There are 280 major population centers or "standard metropolitan statistical area" (Hereafter called SMSAs) in the United States. By the end of 1982, 127 of them had at least one Clean Lakes project within 25 miles of their borders. Projects selected for the program produced a very high return for each federal dollar invested. The public benefit ratio is approximately 8:1, according to a 1982 EPA report. Further, most of the federal money invested in the program went directly to cleanup measures. Classifying potential projects took 5.5 cents; diagnosing their problems took 7.5 cents; and carrying out corrective measures took 87 cents of each federal dollar appropriated. These figures demonstrate that the program was largely free of duplication and red tape. The money went to the problems, not to paperwork.

WPCF also believes that the Clean Lakes Program deserves to be continued because it produces a very high level of Federal-State interaction. EPA gave priority to projects in States that promised to assume responsibility for continuing protective or restorative measures once the work was completed. States had to give serious thought to participating in the program for another reason. They had to help local communities come up with the 50 percent non-federal matching requirement. And EPA built on this need by conditioning the award of cleanup money upon local willingness to assume responsibility for other water-related concerns. Immediate corrective actions are best at eliminating the symptoms of long-term pollution. So stressing local responsibility for maintenance made State and community participants look at best management practices and nonpoint source controls on a regional or watershed basis to make sure that their funds were also effectively spent.

In summary, there are several very good reasons for continuing this program. First, it has restored at least one lake within 25 miles of nearly one half of the

SMSAs in the country. Second, it has done so with an exceptionally low level of administrative "overhead." Third, the benefit-cost ratio is approximately 8 to 1. Fourth, Clean Lakes projects have been combined with other federal and state level actions to multiply the total benefits obtained. Fifth, the program has provided valuable information on the effectiveness of nonpoint source pollution control—a subject your committee has become more concerned about as point source pollution is abated. And finally, a sixth reason was offered by your colleague, Representative Hammerschmidt, when he rose to support to $5.0 million appropriation for the program on June 2, 1983.

During floor debates on the HUD-Independent Agencies fiscal '84 budget measure, Mr. Hammerschmidt said:

"We have all become more aware of the need to address various aspects of acid rain pollution problem that is increasingly threatening our environment. The Clean Water Act's clean lakes program is the only program currently in place and operating today which attempts to deal with at least the lake pollution aspect of this problem on an immediate basis. It would be a bad decision, even a foolhardy one, to abandon this program now at a time when our need for it has probably never been greater."

What more can the committee do to encourage self-supporting public utilities?

Federation witnesses have appeared before your committee to offer recommendations on improving the Clean Water Act many times. Each time they stress the need for municipal wastewater utilities to become self-supporting after meeting the requirements of the act. There is no doubt that members of your committee were concerned, in 1972, with the problem of creating an endless federal grants program for municipal agencies. That is why the grants program in Section 201 was tied directly to the goals in Section 101 and the enforceable deadlines for PTOWs in Section 301. A revised statement of that concern is needed today.

The intent of the House is clearly stated in its March 11, 1972 report on H.R. 11896. That bill and its report were the House basis for the conference that produced S. 2770, the measure enrolled and passed over President Nixon's veto at PL 92-500. Regarding the grants program, the H.R. 1896 report states:

"A major new condition for receiving a grant relates to the establishment of user charges. This section (Section 204) specifically provides that the Administrator shall not approve any grant for publicly owned treatment works, after June 30, 1973, unless the applicant has adopted or will adopt a system of user charges to assure that each recipient of waste treatment services within his jurisdiction, as determined by Administrator, will pay its proportionate share of operation, maintenance (including replacement) and expansion costs. The applicant's jurisdiction means his entire service area.

"The Committee believes it is essential to the successful operation by public agencies that a system of fair and equitable user charges be established. The Committee recognizes that differing circumstances and conditions in local areas may call for especially designed systems and has therefore proposed that the Administrator promulgate general criteria and that such general criteria allow for variations to meet local conditions. This section contains standards the Committee believes should be taken into account by the Administrator; foremost among these is the underlying objective of achieving a local system that is self-sufficient." (Taken from House Report 92-911, page 91.)

This excerpt reveals that the House intended the grants program to end when municipal treatment authorities met the requirements of the law. The House intentions were understood and accepted by U.S. EPA's first administrator, William Ruckelshaus. We know this because the House report just cited also contains a letter from Ruckelshaus dated December 13, 1971 commenting on the provisions of H.R. 11896. On the subject of grants and POTWs, the Administrator wrote:

"We strongly support the concept of requiring that grant recipients have the legal, institutional, and economic capability of self-sufficiency. Accordingly, we believe that the funds recovered from user charges should be retained by the communities in support of this important objective." (House Report 92-911, pages 151 and 152.)

Incidentally, the Office of Management and Budget concurred with Mr. Ruckelshaus letter. So House leaders and administration officials agreed in 1971 that the grants program should produce financially independent wastewater agencies. Finally, a statement of similar intent can be found on page 28 of the Senate's October 28, 1971 report on S. 2770, Senate Report No. 92-414.

In spite of this documentation, Paul Freese, the Federation's witness on August 2, 1983, recommended reaffirming your original intentions. He did so because the legislative record on the conference report to S. 2770 does not reflect the same commit-

ments to independence as the pre-conference reports. That record, Senate Report No. 92-1236, describes the conference version of Section 204 of the measure this way:

"The conference substitute is basically the same as the Senate bill as revised by the House amendment with the following changes:

(1) The requirement that users pay for the cost of future expansion of waste treatment services has been stricken." (Page 112.)

Thus, the final version of the Clean Water Act contains a vaguer, more ambiguous reference to the grants program and self-sufficient POTWs. The exact reasons for this softening of concern are not recorded.

We suspect that the conferees believed that the estimated needs of $24 billion given Congress by the U.S. EPA were too low. Indeed, studies done at the time by the National League of Cities suggest a more accurate figure would have been $33 to $37 billion over the period from 1972 through 1977. This range of estimates is more than $10 billion over the figure that the conferees based their grants program upon. So, in hindsight, prudence might have dictated that they temper their language on the subject of self-sufficiency rather than raise false hopes about the final cost of the program.

Eleven years have passed since that legislative conference. During the past decade, Congress remained firm in its belief that user charge systems had to be a part of any grantee's program. It has never altered the language of Section 204 regarding each POTW's responsibility to maintain a plant and replace its components through user charges. Thus the Federation believes that your committee should take this opportunity to dispell any doubts that have grown up in the intervening years regarding the connection between financial self-sufficiency and the grants program.

Why does the Federation feel that a more aggressive national program on nonpoint sources is unnecessary at this time?

In our testimony, Paul Freese took care to say that the Federation does not support a national program of nonpoint source controls at this time. WPCF does support, however, collecting and analyzing the various studies that have been done on nonpoint source problems. This country needs a center for nonpoint source information. With proper organization, that center could be managed so that research and demonstration funds are spent in the most effective way possible.

Nonpoint sources of pollution are, by definition, multi-faceted phenomena. They are difficult to control with traditional "end-of-the-pipe" treatment systems. Whether rural or urban in nature, controlling such sources will take a very high level of management, as distinguished from pure "treatment." Unless we analyze the information we have on the various aspects of the problem within a coherent framework, our plans for control and management will be disjointed and ineffective.

Moving away from the question of national controls, the Federation feels that there is much Congress can do to encourage the development and testing of local control programs. Regional planning programs like those created through Section 208 of the act can be used to implement nonpoint source controls. Special study programs such as those involving the Great Lakes or the Chesapeake Bay also provide a context for local initiatives. Other local and regional efforts would be encouraged by vigorous dissemination of R&D information from a central organization, as suggested above.

WPCF recognizes that nonpoint sources are serious contributions of pollutants in many areas. And, as technology-based treatment requirements are met on more and more stream segments throughout the country, assessing the possibilities of nonpoint sources control in water quality-limited areas will be necessary. Past experience demonstrates that controls make it possible to attain some benefits or uses, but only at the expense of other desirable outcomes. This point is described more deeply in our 1981 position paper on the issue. Thus, combining the fragmented nature of our knowledge about nonpoint pollution with the possibility that benefits sometimes cancel each other out, produces a very good reason why Congress should require the federal government to organize and improve the state of the art for this problem.

IN SUMMARY

Thank you very much for your interest in the Federation's suggestions for improving clean water programs in the United States. I have tried to keep our answers to your questions brief. At the same time, I have also mentioned some of the larger issues that lie just under the surface of those answers.

If you or your staff would like to explore these issues further, please contact me. I would be pleased to provide you with additional information or to arrange for some of our experts to discuss them with you directly.

Sincerely yours,

ANDREW E. STEVENSON, *Director of Public Affairs.*

Mr. STANGELAND. On page two you recommend that reauthorization of the construction grants program should endorse the concept of self-supporting municipal treatment authorities that can finance maintenance operations and capital improvements on their own after they have met requirements.

I believe the concept is already firmly built into title II of the act. If you have any specific thoughts on how we can amend the language to further emphasize the concept, I think the subcommittee would welcome working with you.

On page four of your prepared statement, you conclude while nonpoint sources are an important part of the pollution control equation, they do not appear to warrant a national control program. Many believe nonpoint sources have been inadequately addressed so far in the Clean Water Act and we will never achieve our goals of fishable, swimmable, until we have better solved the problem of nonpoint sources.

Why is it we should not in your opinion embark on a more aggressive national effort to solve the nonpoint source pollution problems?

Mr. FREEZE. It is not that we disagree that there needs to be a national program. We believe at this time there is an awful lot of research work being carried out that is in progress, the results need to be coordinated and understood better in order to have a meaningful national program.

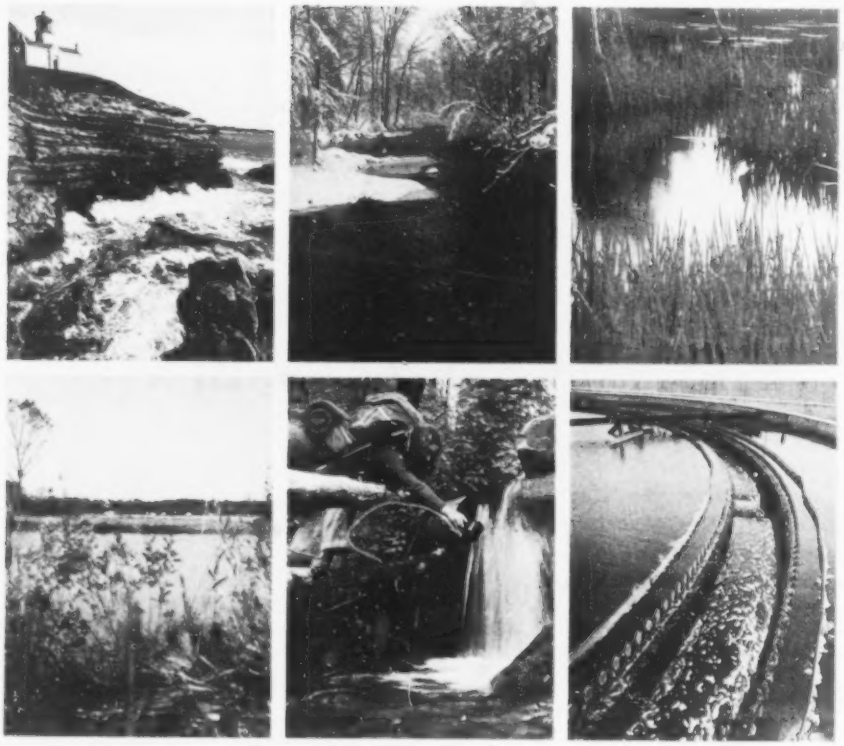
We do not believe the data is in hand to permit the writing of that type of national legislation at this time. We would be glad to give you additional information on that.

[The information follows:]

JOURNAL
Water Pollution Control Federation

WPCF Position Papers

Industrial pretreatment needs to be overhauled at the national level



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FEATURE

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Industrial pretreatment needs to be overhauled at the national level

FEATURE

WPCF Position Papers

Industrial pretreatment needs to be overhauled at the national level

Pretreatment of industrial wastewaters before discharge to municipal systems is required by the 1972 Federal Water Pollution Control Act. In spite of this requirement and the fact that most municipal treatment authorities have sewer use ordinances on which local pretreatment programs can be developed, many metropolitan areas do not have active control plans. There are several reasons why progress has been slow. Court actions and administrative decisions within the Environmental Protection Agency have resulted in a complex set of pretreatment regulations, the foundation of which—pretreatment standards—has never been finalized. Added to this has been the need to learn more about the kinds of toxic substances controlled under a pretreatment scheme. In this position paper, WPCF reviews the current state of national pretreatment policy and recommends that five steps be taken to improve the program. First, the distinction between direct and indirect industrial dischargers must be recognized. Second, pretreatment requirements for old and new indirect dischargers should be the same. Third, the concept of "indicator pollutants" must be eliminated. Fourth, the removal credit concept must be eliminated as a national requirement. Fifth and finally, the federal government can do more to encourage state and local authorities to develop strong local programs.

Pretreatment of industrial wastewaters has become one of the thorniest issues facing a treatment agency and its industrial customers. The list of difficult questions that must be answered before a local pretreatment program can work is long. In most cases, pollution control experts do not know enough generally about the toxic substances pretreatment is intended to remove or reduce. Biologists and toxicologists do not have enough data to say how much of an aquatic or human health risk is attached to a particular concentration of a given substance. Treatment agency researchers are still working to determine how much of a substance is removed in the normal course of wastewater treatment. Engineers faced with the challenge of developing the equipment and processes needed to control toxic pollutants are hampered by the lack of good information from the other areas just mentioned, as well as by the "moving target" presented them in the form of categorical standards that are never finalized. What can be done to resolve the problems and move ahead with the program?

Pretreatment objectives were put on the national agenda in the 1972 amendments to the Federal Water Pollution Control Act (PL 92-500). At the time, pretreatment was thought to be necessary wherever industrial dischargers contributed organic and inorganic pollutants that could pass through a plant untreated, or could upset the normal operation of a plant. The concept was not a new one. Its antecedent was the sewer use ordinance developed by many treatment agencies as a way to protect their facilities. At the national level, however, the concept was broadened to embrace the hundreds of substances that were thought to be chronically or acutely toxic to aquatic and human life. The 1972 pretreatment program was legislatively joined with an effluent limits system for direct industrial discharges that was designed to evaluate the toxicity of substances on a chemical-by-chemical basis for direct and indirect industrial dischargers. Section 307(b) of the act gave the Environmental Protection Agency (EPA) the authority to write pretreatment limits for any such substance. The limits could be based on either water quality or pollutant control technology criteria. Although EPA could develop standards for direct and indirect discharges separately, it was required to publish effluent limits and pretreatment limits for *ned* industrial dischargers (as distinguished from dischargers existing when the act was passed) simultaneously. No one foresaw there would be serious problems developing both types of standards for both types of discharges, much less new or existing industries.

Unfortunately, the 1972 program

was a failure. Managers of the national toxics control program who wrote effluent limits found that existing biological and toxicological data were inadequate. Collecting a reliable data base for most substances required years of patient work and millions of dollars. Experts within the scientific community disagree—often sharply—over the interpretation of the studies that were completed. Indeed, the very term "toxicity" was open to debate. EPA investigators managed to produce standards for only six substances in 5 years. The Natural Resources Defense Council (NRDC) then took EPA to court, charging that it was dragging its feet on the national toxics control program. A settlement between the parties was reached in June 1976, scrapping the 1972 program and substituting a new one.

Pressure from NRDC and other activist organizations produced a consent decree in which EPA agreed to look at 65 compounds and to consider writing limits for 129 substances (referred to as "priority pollutants"). As part of the decree, EPA also agreed to basing any limits produced on technological criteria exclusively. Those limits were to be incorporated into the permits of some 14 000 industrial dischargers, grouped into 29 separate categories, and further divided into 399 subcategories. Federal District Court Judge Thomas A. Flannery gave EPA 3.5 years to do most of the work (until December 1979). He assumed that the period would be long enough for standards to be written and for industrial dischargers to meet the July 1, 1983, deadline for putting the proper effluent control on-line. Congress revised the act in 1977 to incorporate the court settlement. It also gave industry an extra year to meet its legal deadline by extending the cutoff point from July 1, 1983, to July 1, 1984.

Even with the extra time, EPA found itself unable to produce the standards with the resources at hand. "It is clear," Administrator Douglas M. Costle reported to the principal plaintiff in the court case, "that the task has proven to be far more resource intensive (sic) and time consuming that originally perceived." On March 9, 1979, all parties to the settlement agreed with Costle and recast their compact to extend the standards deadline a third time, the new date being March 1981. But there was a *quid pro quo*. The agency had to agree to an expanded list of subcategories—from 399 to 700. It was a hard bargain: in return for more time, the agency got more to do.

Throughout the process of renegotiation, many people assumed that significant amounts of toxic substances in question were not removed by conventional treatment and passed through municipal plants to pollute receiving waters. However, testimony before the House oversight subcommittee in 1980 revealed that treatment plants were often more effective removers of the toxic substances than originally supposed. The director of EPA's Municipal Environmental Research Laboratory reported that studies done in three municipal plants showed only 37 of the priority pollutants could be detected entering the facilities. "The concentrations measured were generally low . . . and highly variable," he noted. Information independently presented by municipal authorities and industrial waste treatment plant operators supported the agency's findings that well-run biological treatment plant operators supported the agency's findings that well-run biological treatment systems did, in fact, control toxic substances to a significant degree.

Because effluent limits have to be written before pretreatment limits, the pretreatment program languished somewhat while EPA wrestled with the problem of deadlines. But the lack of attention at the federal level was more than compensated by problems municipal authorities and industrial customers found they had to solve before local treatment agencies could make the program work. WPCF's pretreatment task force held a national symposium on the issue in July 1980 that highlighted the trouble spots. From the meeting came five objectives that must be met to make it work better. They are:

- Recognize the distinction between direct and indirect industrial dischargers;
- Make pretreatment requirements similar for old and new indirect dischargers;
- Eliminate the concept of "indicator" pollutants;
- Eliminate the removal credit system; and
- Encourage state and local authorities to develop strong programs.

Objective—recognize the distinction between direct and indirect industrial dischargers

Under the consent decree worked out between NRDC and EPA, technology-based effluent limits (designed to attain "best available treatment" and therefore called BAT limits) have to be considered for different categories of direct industrial dischargers. By the same logic, the pretreatment limits considered for indirect industrial dischargers have to follow the same classification scheme. The Standard Industrial Classification (SIC) Code contains the categories used. It divides businesses into such processes as: electroplating, gum and wood processing, leather tanning, textile milling, and so forth. Each category is further broken down into subcategories of plants using similar processes within a given industry.

Standard-setters within EPA decided that each category had to be investigated separately. Thus the BAT limits on chrome discharged by electroplaters could be different from the BAT limits on chrome discharged by tanneries. Pretreatment limits on chrome could differ the same way. These divisions have created some extreme variations in the

limits proposed, all in the name of trying to achieve economic "parity" between the direct and indirect discharger groups and between industries in each group that happen to fall into different subcategories. Given the lack of hard data on which to base the setting of even a single, uniform effluent limit for all dischargers of a different toxic substance on the priority pollution list, it is no wonder that the search for parity among different groups of dischargers has bedeviled standard-setters since the beginning of the program.

On the question of parity between categories of direct industrial dischargers, investigator James Patterson of the Illinois Institute of Technology found that tentative EPA limits on common parameters showed nearly a 1 000-fold variability. Patterson gave two possible reasons for the wide range. First, the outside contractors hired by the EPA to study industrial waste streams sometimes had little or no knowledge of the nature of those industries. Second, a lack of coordination within EPA between the effluent guidelines division and other groups familiar with industrial pollution control prevented the cross-checking of research results to uncover the variations before the standards were publicly discussed.

Patterson also found alarming differences between the limits proposed for indirect dischargers within the same category. After taking into account the removals that could be expected at the municipal treatment plant, he calculated a 20-fold difference for limits on antimony and nickel, a 9-fold difference for zinc, a 28-fold difference for lead, and a 100-fold difference for chromium and copper in the inorganic chemical industry. Patterson concluded that the variations created economic disparity between inorganic chemical manufacturers discharging the same pollutants to a treatment system.

Still examining the question of parity among indirect industries, Patterson compared the pretreatment standards proposed with the treatment capabilities of a well-run industrial facility's pretreatment system. That comparison revealed that the range of proposed limits bracketed the removals possible. Total chromium, copper, and nickel, for example, had limits that were 10 to 25 times lower than the concentrations that could be removed. Other substances such as arsenic had limits that were 10 times higher than could be removed. Such a wide spectrum of proposed limits would require some industries to install sophisticated equipment to extract painfully small amounts of one substance while allowing extraordinarily large amounts of other substances to pass through.

Finally, Patterson wondered about parity between direct and indirect dischargers. He compared the equivalence of proposed pretreatment limits with alternative direct discharge limits for equivalence of proposed pretreatment limits for seven industries. In four cases, the proposed pretreatment limits were equivalent to the BAT limits. In one case, they were comparable to "best practicable technology" (BPT) limits (a lower set of figures than BAT numbers). In two cases they were not equivalent to either BAT or BPT restrictions.

What did Patterson's quartet of studies prove? The first point they drive home is that parity is an impractical concept on which to base standard-setting. In the past, long legal battles have surrounded the release of each proposed pretreatment standard. Holding to the notion of parity invites court suit on the grounds of disparity. A second point is that insisting on parity will, in many cases, mean requiring some industries to install pretreatment equipment solely for pretreatment's sake. Achieving parity becomes more important in those cases than protecting the municipal plant, its sludge, or the receiving stream. Indeed, the lengths to which one might go to reach parity sometimes pass the point of no return, as illustrated in an analysis by James North of Resource Consultants, Inc.

Recommendation: recognize the differences between direct and indirect industrial dischargers. Eliminate the parity principle from the standard-setting process. Concentrate on building data bases that are needed to support reasonable BAT standards for direct dischargers. Direct industrial dischargers and municipal treatment plants could then meet comparable effluent limits. With a firm set of effluent limits, municipal authorities can develop pretreatment limits to protect their facilities and receiving waters.

Objective—make pretreatment requirements similar for old and new dischargers

Section 307 of the act requires the EPA administrator to publish new pretreatment limits each time new source direct discharge limits are set under Section 306. Program officials at EPA can interpret this to mean that new source pretreatment standards will naturally be more restrictive than those that were set for existing sources. Nothing in the law or the legislative history of the act supports this interpretation as the only possible one. Indeed, a pretreatment standard may be modified on any one of three grounds: limitations of technology, economic burden, or limitations on space available for new pretreatment equipment at the plant site. The underlying intent of revising Section 307 in 1977 was to help the agency improve its response time when certain substances were shown to be toxic, yet were not covered by either a performance standard under Section 306 or a pretreatment standard under Section 307. Revisions to both sections were also intended to make it easier for EPA to raise direct and indirect effluent limits, *if justified by actual findings.*

Problems endemic to the national pretreatment program arise from the agency's inability to commit enough time and energy to the BAT stand-

ard-setting process before deadlines run out. More effort must be devoted to setting standards for existing sources. Concentrating on existing sources and the limits they will need to adopt contributes to the pace of local pretreatment program development. The requirements of Section 307(c) can be satisfied by initially promulgating the same pretreatment limits for new sources as for old sources.

Recommendation: A single pretreatment standard for each pollutant in each industry category should be set under the national program. No distinction should be drawn between limits on the same pollutant for new and old sources.

Objective—eliminate the concept of "indicator" pollutants

EPA pretreatment program developers have shown a fair amount of flexibility in their efforts to find effective ways to set limits with inadequate information on many of the priority pollutants. One line of reasoning pursued was the idea that certain well-known pollutants (such as suspended solids) could be used as "surrogates" for pretreatable substances. However, the creation of a surrogate depends on amassing enough removal data to establish a statistical relationship between the surrogate and the substance to be controlled. In most cases, surrogates could not be developed. Thus the concept of "indicators" was advanced. Indicators would be substances for which reliable information existed and for which a causal relationship between their removal and the removal of pretreatable pollutants (for which little reliable information existed) was presumed to exist. In short, the indicator concept acknowledged the lack of a firm statistical link but asserted a reasonable judgment that removing the indicator also removed the controlled substance.

Attempts to apply the indicator concept to priority pollutants have focused primarily on organic substances. But the agency has run into serious problems in validating the notion. The main difficulty is that EPA has a much smaller data base for organic toxicants than it does for the more common substances such as heavy metals (copper, chromium, nickel, and zinc) that could serve as the indicators. We do not know enough at this time to link lesser-known pollutants with the more familiar ones—statistically or otherwise. The correlations cannot be drawn and the removal relationship cannot be inferred.

Agency investigators at the 1980 WPCF symposium cautioned against expecting widespread adoption of the indicator concept as a way to speed up the writing of pretreatment limits. At the same conference, Wesley Eckenfelder of Vanderbilt University suggested that EPA concentrate on building better data bases for the lesser known pollutants by concentrating on questions about their actual fate in a municipal treatment plant, their reaction rates when mixed with domestic wastewater flows, and their potential to cause bulking problems in the treatment process.

Recommendation: while an excellent example of how to keep an open mind in the standards-setting process, the indicator pollutant concept should not be pursued any further as a way to develop pretreatment standards. The EPA investigation effort must be directed towards learning more about the actual fate of the pollutants being controlled.

Objective—eliminate the removal credit system

A second idea that gives more flexibility to the pretreatment program is the granting of "removal credits" to the industrial customers of a municipal system where it can be proven that the municipal plant consistently removes significant amounts of regulated pollutants. For example, if the pretreatment standard for copper was 4 mg/l and a municipal authority could show consistent removals of 1 mg/l for copper, industrial contributors to that system would be allowed to discharge up to 5 mg/l of copper in their wastes. Industrial groups following the development of the national pretreatment program strongly favor the removal credit concept. Municipal groups agree that it has merit and can work, but they do not believe the removal credit regulations proposed thus far are practical.

Legal action against EPA by the Chemical Manufacturers Association on this issue led to reproposing the general pretreatment regulations in October 1979. While trying to work out a removal credit arrangement that would work for industries and still meet the objectives of the pretreatment program, EPA negotiators made it very difficult for a municipal authority to actually calculate credits. Most have decided it simply isn't worth the trouble.

There are alternatives to the credit system. Congress should authorize treatment authorities to run their own pretreatment programs independently of the national categorical standards for direct dischargers. This would give municipal treatment authorities full control over the actual design of their programs. They could set their own standards, develop their own system, and eliminate the question of parity as long as their programs meet the discharge requirements of their National Pollutant Discharge Elimination System (NPDES) permit. A pretreatment program of this type would also let local authorities focus on the highest concentrations of toxic substances first, thereby setting their priorities according to local conditions rather than administrative convenience at the national level. This approach leads to the issue of making pretreatment work on the "front line."

Recommendation: Congress should amend the law to require treatment authorities to design their own own programs. EPA would still be responsible for setting effluent limits for end-of-pipe discharges from POTWs.

Objective—encourage state and local authorities to develop strong programs

The objectives and recommendations examined so far are primarily aimed at making it possible for EPA to develop a more reasonable toxic pollutant control program nationally. One of those improvements involves giving treatment authorities full control over the design and execution of their program. Selectively choosing other facets of the general program that state and local participants could assume more responsibility for would also speed up its implementation.

Overall, the concept of pretreatment is sound. The pretreatment regulations should be a good framework for toxic pollutant control in municipal systems that mesh with the NPDES compliance system. However, state and local governments simply do not have the time, people, or money necessary to install a full-blown pretreatment program immediately. At House oversight hearings in the summer of 1980, one state official reported that ". . . the State's request to EPA for pretreatment program authorization projects the need for a staff of 124 for the work for (the state agency) alone, with no mention of the needs at the local levels. In reality, because of Federal and State funding constraints, we can eventually expect a total State staff of a maximum of only 31 people."

The ability of state and local governments to move swiftly once national program requirements are developed has been crippled by the continuing doubt that EPA will be able to meet any of its own deadlines. Accepting the recommendations made in this paper could lead to faster progress nationally, but the agency should not insist that state and local authorities try to do in a few years what is taking the federal government a decade to accomplish. The stumbling block in the critical path of the national program has been our ignorance about most of the toxic substances. But different obstacles confront the other governments.

At the state and local levels, the problem is mainly one of time and energy. Both of these factors depend on the budget available to implement a program. That budget is not a function of the program's complexity, but of how important pretreatment is within the state, compared to all other environmental priorities. As the originators of the national program, EPA officials are rightly concerned about developing regulations and guidance for controlling *all* of the substances on the priority list. At the lower levels, however, it doesn't make sense to be equally concerned about all possible toxic pollutants that may enter the streams. A more effective use of available resources would be to first control those substances that are already known to be a problem. States and local authorities can fulfill the basic objectives of the program by identifying and controlling all indirect dischargers who are contributing to municipal treatment plant interference. To its credit, EPA has been willing to honor this type of arrangement.

Recommendation: EPA should interpret pretreatment program regulations to permit state and local authorities to phase in their programs, starting with pollutants and industrial contributors that are known to upset plant operations. Additional control for eliminating pass-through problems and for tracking the fate of lesser-known substances may be developed later.

"Industrial Pretreatment Needs To Be Overhauled At The National Level" is the fourth in a series of WPCF position papers. It was developed by a task group consisting of Jack Washburn (chairman), Ken Kirk, Gerald McDermott, and Robert O'Dette.

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This is a reprint from the *Journal Water Pollution Control Federation*, the monthly technical journal published by the Water Pollution Control Federation.

The Water Pollution Control Federation (WPCF), a non-profit educational membership organization, was founded in 1928. Pledged to provide leadership and guidance in the control of water pollution, the Federation acts as a source of education and information to the public as well as to individuals in the field of water pollution control. As such, it does not lobby or accept federal funding.

WPCF is composed of 40 member associations in the U.S. and is affiliated with 25 other organizations around the world. More than 30 000 people belong to the Federation. Our members include engineers, biologists, chemists, academia, federal, state, and local government officials, wastewater treatment plant operators, consultants, equipment manufacturers, contractors, industrial representatives, students, and others interested in clean water.

The U.S. and foreign associations are autonomous groups represented on the WPCF Board of Control, the policy-making body of the Federation. This bonding of individually strong groups under one banner is why the Federation has long been the leading technical organization in the water pollution control field.

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Mr. STANGELAND. I would appreciate it if you could flesh that out for our benefit. Thank you.

Mr. ROE. Are there any other questions?

The gentlelady from New York.

Ms. FERRARO. Thank you, Mr. Chairman. I would just like to follow up a little bit on the municipal construction grant.

On page two of your testimony you make some suggestions that Congress take the following steps. You set out three steps.

Could you give us a little more detail on that? What would the completion schedule be? How long would it take? How much per year in Federal grants?

Mr. FREEZE. We, in putting together a position paper for the federation, suggested a 10 year phase-out of the program. There are several reasons for that.

One is that we believe there must be a certain amount of money available for the program that people can depend on.

We believe if there were a set period of time—we suggested 10 years, over which people could know how much money they could count on—they could plan and set their projects up on that basis. That would be a much more realistic effort than hoping for $5 billion this year and nothing next year.

So we have suggested 10 years. We are not locked into that position, but that is what our paper says. We have always endorsed the concept of self-supporting plants.

We believe in the long run, as we say in point three. We believe this is a one-time-only program.

It was intended, as I understand the bill, it was intended to be that type of financing, a shot in the arm to get our industry on its feet.

But it never was anticipated to my knowledge that that would be continuing forever, but we would have to go back to the tried and true fundamental way of funding municipal projects through water and sewerage usage charges or something similar to that.

Something on a local financing basis. In our position paper that is what we have emphasized.

Ms. FERRARO. You have mentioned the position paper twice. Could you share that position paper with the committee so we would have your full thoughts on the matter?

Mr. FREESE. We would be pleased to.

[The information received follows:]

Washington, D.C., August 23, 1983.

Hon. GERALDINE FERRARO,
Cannon House Office Building,
Washington, D.C.

DEAR REPRESENTATIVE FERRARO: On Tuesday, August 2d during hearings before the water resources subcommittee, you asked two questions of Mr. Paul V. Freese, a witness for the Water Pollution Control Federation. Mr. Robert A. Canham, our executive director, has asked me to respond.

Your first question pertained to the WPCF documents supporting Mr. Freese's formal statement. We are sending enough sets of the reference documents to the majority and minority staffs for each member of the subcommittee to receive one.

Your second question pertained to the Federation's position on completing the construction grants program.

When the 1972 act was passed, leaders within WPCF recognized that federal support for publicly owned treatment works (or POTWs) would be needed. There was no

other way to meet the 1977 and 1983 water quality goals Congress had set. Our members applauded provisions in Titles I and II that required construction grant recipients to plan their financial affairs so that the federal government would not have to continue subsidizing the POTWs once the goals were fulfilled.

Since that time, the construction grants program has directed over $30 billion into improving municipal treatment systems around the country. Many of the facilities are not yet completed, because the process of designing and constructing such systems takes many years. Once in operation, those facilities will do a great deal to restore and maintain our nation's water quality.

In 1972, Congress was primarily concerned with improving treatment capacity on a massive scale. Now, a decade later, we believe that congressional leaders should be primarily concerned with guaranteeing that the facilities constructed will operate properly. WPCF members believe the change in focus is appropriate, given the progress that we have made in the grants program. We strongly believe that now is the time for Congress to reaffirm its original intention that POTWs become self-supporting public utilities. Thus the statement enclosed deals extensively with that issue.

At this point, let me define the term "self-supporting" as we use it in our paper. "Self-supporting" means that communities can meet their treatment requirements without additional assistance from the federal program. Our definition of the term does not preclude a State from deciding that it wants to assist POTWs through a grant or loan program. It simply means that when a community meets the federally required goals, it is no longer eligible for federal assistance.

In 1980, we began to receive reports from our members and from grant managers at U.S. EPA that some communities were applying for a second round of grant assistance. These were communities that had already built facilities required by the law and were now coming back for more money to expand or improve those facilities. This disturbed us greatly.

At the same time, the Public Works subcommittee on investigations and oversight began hearings on the results of the grants program. Subcommittee investigators uncovered instances of grant-funded facilities that were inadequately staffed and operated. The General Accounting Office supplied similar reports of its own. From this, WPCF concluded that the goal of self-supporting utilities had to be re-emphasized, or the reason for creating the grants program would be lost.

In 1981, the Federation published its first statement on the grants program, urging that it be completed. The position was controversial, even within our own membership. It remains so today. In fact, our 1982 sequel was the results of a question about that statement from this subcommittee. In our supplement we recognized the contributions of the 1981 amendments to the program and suggested a 10-year completion schedule for it. The schedule included a minimum of $19.6 billion from the federal government. We also encouraged consideration of a federally-supported trust fund as the vehicle for channeling money into construction during the latter half of the completion period.

To my knowledge, the Water Pollution Control Federation is the only organization that advocates completing the program. And I am sure that the Federation is the only one that has suggested a specified timetable and budget for the program. We hope that our position will lead other interested groups to address the same question.

In closing, let me say that WPCF is very sensitive to the practical implications of making POTWs financially independent. It will mean that customers will pay more for wastewater treatment. And traditionally, sudden increases in wastewater charges make voters critical of their local officials. Few politicians would support such an unpopular decision if they doubted the public was behind them. Consequently, those of us in the "clean water community" need to capitalize on the strong public support that several witnesses at the hearings mentioned.

It will take many years of public education to make people appreciate the value of wastewater treatment. Is the environmental consciousness that Lou Harris reports strong enough to ease the jolt many customers will feel when their rates go up? We believe it is, if nurtured through public education. And the first step in that educational process is making people aware of the benefits they receive through the grants programs . . . benefits that can only be retained through financial independence.

Thank you for the opportunity to explain our position. Should you or your staff wish to discuss the grants program further, please contact me. My telephone number is 337-2500, extension 33.

Sincerely yours,

ANDREW E. STEVENSON, *Director of Public Affairs.*

Ms. FERRARO. At the risk of appearing to be in a bit of a rush, on the nonpoint source programs, you at the bottom of page 3 indicate that you would not take any more of the committee's time to present tentative conclusions of the impacts on other beneficial uses of—et cetera.

Could you briefly discuss those other matters with us?

Mr. FREESE. We could briefly discuss it or supply, again, a position paper we have prepared on nonpoint sources, on rural nonpoint sources. The paper is specifically on rural NPS.

It does not address the urban problem which you have raised. What we have seen are—as I believe was mentioned again this morning—studies by a number of different agencies. The Farm Bureau has been involved. Soil Conservation Service has been involved. We have been involved.

That information has not been brought together, shared and put into a results oriented paper. We believe before any action is taken that the information that is available needs to be analyzed and understood.

That was the point of our comment here. On the urban runoff, which you asked about earlier, we made some note that half of the substances on EPA's priority pollutant list sometimes occur in urban runoff.

Heavy metals we mentioned, copper, lead, zinc, appear more frequently than the organics do. But they are there, also.

High concentrations of heavy metals are found frequently enough in urban runoff to perhaps pose a chronic risk in some cases.

So we believe the problem is there. We just don't believe that the results of the research have been completed and understood at this point.

Ms. FERRARO. Thank you. I would appreciate it if you would supply a position paper on this point as well.

[See Journal—Water Pollution Control Federation, page 333.]

Mr. ROE. We want to thank you very much for your presentation. Again, don't think the brevity is lack of interest. It is not. We will be calling you back further.

I know you are going to be monitoring as the hearings are held and we will look for further input as we go along.

We want to thank you very much for being with us this morning.

Mr. FREESE. Thank you very much.

Mr. STANGELAND. If I might point out, Mr. Chairman, I think I have tallied up over 800 hours on the bill we are presently moving through committee, so they can rest assured brevity is not going to be the order of the day on this piece of legislation, either.

Mr. ROE. Very good.

Our next witness is representing the National Association of Manufacturers, Mr. Harold Jensen, director of energy, conservation and environmental control, Warner Lambert Co., Morris Plains, N.J. and chairman, NAM water task force.

Mr. Jensen, welcome to our committee. If you would be kind enough, your testimony will be inserted in the record in full. If you would summarize, we would appreciate it.

[Statement referred to follows:]

TESTIMONY ON BEHALF OF THE NATIONAL ASSOCIATION OF MANUFACTURERS, PRESENTED BY HAROLD JENSEN, DIRECTOR OF ENERGY CONSERVATION AND ENVIRONMENTAL CONTROL, WARNER-LAMBERT CO.

I am Harold Jensen, Director of Energy Conservation and Environmental Control for Warner-Lambert Company and Chairman of the National Association of Manufacturers' Environmental Quality Committee.

The National Association of Manufacturers is a voluntary association of more than 13,000 enterprises engaged in manufacturing in the United States. The greater bulk of its members discharge water into navigable streams either directly or through Publicly Owned Treatment Works (POTWs). Therefore, they are greatly impacted by the provisions of the Federal Water Pollution Control Act, referred to as the Clean Water Act. Therefore, we deeply appreciate the opportunity to present our views on needed amendments to the Clean Water Act before the Subcommittee on Water Resources.

We understand that at this initial one-day hearing, the Subcommittee is interested in an overview by major interest groups of the issues involved in reauthorization of the Act. Consequently, we will limit our testimony to a brief listing of what we believe are the most important issues. We understand that the subcommittee will hold further hearings in September, at which time we would like to have the opportunity to elaborate on these points.

On July 20, 1983, the NAM sponsored a National Conference on Clean Water Act Reauthorization held in Washington, DC. The issue which was the subject of most discussion was that of pretreatment. The present National Categorical Pretreatment System has created a vast amount of confusion among dischargers and among owners and operators of Publicly Owned Treatment Works. This rigid and inflexible system does not take cognizance of variations in individual plant discharge streams and variations in the capacities of POTWs to handle the particular wastewater streams involved. These interrelated factors are site specific and cannot be properly considered under any national uniform industrial program. Representatives of various industries, representatives of agencies operating POTWs, and representatives of state regulatory authorities all agreed on this matter at the National Conference on Clean Water Act Reauthorization. Thus, there is widespread support among all interested parties for alternative local pretreatment systems. Consequently we strongly urge that the Subcommittee approve an amendment which would allow the establishment of alternative local pretreatment systems.

I will briefly touch upon other issues of great importance to industry. The first is the fact that present law specifies a deadline date of July 1, 1984 for effluent limitations based on Best Available Technology. Some of these effluent limitations have not yet been promulgated, some have been promulgated only recently, and some are being litigated. It would be either impossible or extremely costly at best to meet this deadline date. The Act should be amended to allow at least three years from the date of promulgation of the effluent limitations for each particular industry's category or subcategory. There should be no fixed deadline date specified in the law since experience has shown that specific deadline dates have become meaningless in actual practice.

Another disturbing aspect of the implementation of the Clean Water Act relates to the fact that there is a backlog of some 70 percent of applications filed for reissuance of National Pollutant Discharge Elimination System permits usually referred to as NPDES permits. From a realistic point of view, there is no point to limiting NPDES permits to a term of 5 years. Many different interest groups believe that the resources of both EPA and dischargers could be conserved without sacrificing the objectives of the Act by extending the term of NPDES permits from 5 years to 10 years.

We also urge that effective steps be taken to control water pollution from nonpoint sources. Industry has spent billions of dollars over the last dozen years in installing, operating, and maintaining water pollution control facilities. The result has been very substantial improvement in water quality in many areas. In other areas, the remaining problems are frequently due to municipal dischargers or discharges from nonpoint sources. It is not rational to continually ratchet down on industry when the results will be little perceptible improvement in water quality and the problems still remain. In many instances, manufacturing plants return water of better quality to the receiving stream than the water originally withdrawn. We note that the Small Watershed Program administered by the Soil Conservation Service of the Department of Agriculture has helped to minimize the problems of erosion and siltation in many areas. Perhaps this program could form a foundation for an expanded comprehensive program to control water pollution from nonpoint sources

both in rural and urban areas. We strongly urge that the Subcommittee provide for such a program.

The evidence indicated that the installation of Best Practicable Control Technology (BPT) by industry has served to control many pollutants which have been classified as "toxic". Therefore, we urge that the Act be amended to provide that the Best Available Technology be required only in the case of truly significant toxic problems.

Another matter of concern to manufacturing companies is the fact that a number of designated water uses in various parts of the country are impossible of attainment. We urge that the states be allowed flexibility to adjust water quality standards and uses to meet realistic conditions and needs of each particular state.

We greatly appreciate the opportunity to present our views.

TESTIMONY OF HAROLD JENSEN, DIRECTOR OF ENERGY, CONSERVATION AND ENVIRONMENTAL CONTROL, WARNER LAMBERT CO., REPRESENTING THE NATIONAL ASSOCIATION OF MANUFACTURERS

Mr. JENSEN. Good afternoon, and thank you.

I anticipated that this would be a brief overview, as openings. Therefore, we hit upon a few key issues. Like other witnesses, we would be glad to come back and get into more depth at some time, if you wish.

As chairman of the water task force of National Association of Manufacturers, I know you are aware that we are representing some 13,000 enterprises involved in uses of our waters and greatly impact it.

I would just like to call to your attention that 2 weeks ago, July 20, NAM sponsored a national conference on Clean Water Act reauthorization held here in Washington, D.C. The subject that received the most discussion was that of pretreatment. It was brought out that the national categorical pretreatment system has created a vast amount of confusion among dischargers and among owners and operators of publicly owned treatment works.

This rigid and inflexible system does not take cognizance of variations in individual plant discharge streams and variations in the capacities of POTW's to handle the particular wastewater streams involved. We came to the conclusion from this conference that the national uniform industrial program is not workable.

Representatives of various industries, representatives of agencies operating POTW's, and representatives of State regulatory authorities all agreed on this matter at the national conference on Clean Water Act reauthorization. Thus, there is widespread support among all interested parties for alternative local pretreatment systems. Consequently, we strongly urge that the subcommittee approve an amendment which would allow the establishment of alternative local pretreatment systems.

Other issues we feel that are of importance, and these are not listed necessarily in order of priority, we would like to look at extension of effluent limits from the 1984 date. As you know, some of these regulations have not yet been implemented, some of them have. Some of them are under litigation. So we strongly urge we have the 3-year extension spoken of before.

One thing we are concerned about is that there should not be a fixed deadline for the completion because we have learned in the past history of the Clean Water Act that in actual practice, fixed deadlines do cause problems.

With respect to the NPDES permit life, most we think would agree that the resources of both EPA and dischargers could be conserved without sacrificing the objectives of the act by extending the term of NPDES permits from 5 years to 10 years.

Nonpoint sources have been discussed today and we definitely feel this should be an issue in the discussion of the amendments to the act. Industry feels they have done a fairly good job in treating their wastewaters and would hate to be the—having more implementation placed upon us, ratcheting us down only to find that the nonpoint sources were contributing large quantities of the pollutants, then find the problem is not completely solved.

Another area that has been discussed, the toxics. The evidence indicates that the installation of best practicable control technology (BPT) by industry has served to control many pollutants which have been classified as toxic. Therefore, we urge that the act be amended to provide that the best available technology be required only in the case of truly significant toxic problems.

The last issue is water quality standards. We feel designated water uses be more flexible and in the State area to relate to the fact that local conditions do prevail and many times the natural conditions are the ones that are causing the water not to meet the water quality standards.

Well, I appreciate the opportunity to testify. We would be glad to offer further information or answer any questions you may have.

Mr. ROE. Are there any specific questions?

We will be calling you back, as you know. Are there specific other questions of Mr. Jensen at this point? We want to thank you for your presentation. I think what you have done is highlight the concerns of the National Association of Manufacturers. We will be calling you back.

Our next witness is Mr. William West, director of environmental control, Republic Steel Corp., and chairman of the AISI committee on environment. We want to welcome you to the committee.

Mr. West, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF WILLIAM L. WEST, DIRECTOR OF ENVIRONMENTAL CONTROL, REPUBLIC STEEL CORP. ON BEHALF OF THE AMERICAN IRON AND STEEL INSTITUTE

Mr. Chairman, Members of the Subcommittee, I am William L. West, Director of Environmental Control for Republic Steel Corporation. I am appearing here today on behalf of the American Iron and Steel Institute, a trade association which includes 62 domestic corporations representing about 88 percent of the steel production capacity in the Untied States. I am Chairman of the Institute's Committee on Environment.

I would like to present the viewpoints of the American Iron and Steel Institute on amending the Clean Water Act. Before discussing amendments to the Act, I would like to provide a little background on the steel industry. The steel industry has in the past and continues to support the environemtnal objectives established by the Congress. Our industry is committed to carry out responsibily our share of the nation's water pollution control program. The steel industry has already invested over $2 billion in facilities for the control of water pollution. We have in place and operating today facilities to control over 95 percent of all water pollutants generated in our plants. Under the new effluent limitations guidelines established for our industry last year, we will be installing within the next few years additional facilities to achieve about 99 percent control of conventional and nonconventional and toxic pollutants generated within our plants. I think our record in the area of water pollu-

tion control is one of which we can and should be proud. We recognize that we have a responsibility to improve upon our accomplishments to date.

This nation and the steel industry are faced with an unprecedented economic situation. The nation is just recovering from the worst economic climate since the Great Depression on the 1930's The steel industry, the nation's most basic industry, was one of the hardest hit in this recession. In 1982, our industry operated at well under 50 percent of its capacity. The industry's employment level in 1982 reached its lowest since the days of the Great Depression. While there real signs of recovery today, the industry is not yet profitable. It is widely recognized that we must make major capital investments in modernizing and improving our facilities if we are to retain our position as a world leader in steel production. We believe that modernization and growth of our industry are fully compatible with rational environmental policies. We would empahsize that new, modern facilites are inherently cleaner and less polluting than other, existing plants. We believe that at this stage in the evolution of the nation's water pollution programs some amendments to the Clean Water Act and some changes in regulatory approaches are essential to permit prudent use of our environmental spending, so that we can have a balanced program of economic growth and environmental progress.

Turning now to the Clean Water Act, I testified before this Subcommittee a little over a year ago and pointed out the industry's urgent need for extending the deadlines under the Clean Water Act. The passage of a year has magnified the necessity for extending the compliance date of July 1, 1984, the present deadline in the Act for technology requirements. That deadline was based on the premise that effluent limitations guidelines were to have been established by mid-1980. That schedule would have provided for industry a 48-month period from establishment of the guidelines to completion of facilities. I would point out that establishment of effluent limitations guidelines is only the first step toward final compliance. The second step is incorporation of these guidelines into NPDES permits establishing the requirements for specific plants. This, in itself, is a complex, time-consuming step. It is not a simple, cookbook procedure; analysis and evaluation of the uniqueness of the individual plant and site specific problems can be addresssed only by the permit writer working closely with the plant operator. The complexity of the permitting process is illustrated by the fact that the U.S. Environmental Protection Agency or the states, where delegation is in effect, are jsut now beginning to issue NPDES permits to the steel industry. Most steel plants have not yet been issued permits even though the applicable effluent limitations guidelines were issued over a year ago. The time for compliance has thus been reduced to less than a year.

Only when the permitting process is complete can the discharger have all of the necessary information to begin process selection and design and construction of a treatment facility. Based on extensive [illegible] industry experience, we can say that the lead time from the establishment [illegible] permit requirements to routine operation of complex control systems, the ty[illegible] for final treatment in the steel industry, is a period of about 36–42 months.

Therefore, we believe it essential that the Clean Water Act be amended to extend the deadlines for all technology-based requirements by a period of 42 months after the date of enactment or 36 months after the imposition of specific limits for industrial operations, whichever is later. This extension should apply to all newly imposed technology-based requirements, including those under Section 301(b)(2) of the Act and those under Section 301(b)(1)(A)(1), that is, any modified or redefined BPT which will in most cases be achieved concurrently with the requirements for attainment of limitations set under Section 301(b)(2). We encourage this Subcommittee to initiate amendments to effect such changes.

Another section of the Clean Water Act that we believe should be amended deals with programs for pretreatment of industrial wastewaters. We believe it quite appropriate that the pretreatment portions of the law be reexamined and amended significantly to provide a more workable, practical system of pretreatment permitting. In 1977, the Congress amended the Clean Water Act specifically to provide for the granting of removal credits by a publicly owned treatment works (POTW). EPA's implementation of the removal credit program has resulted in regulations that are so complex and administratively difficult that they tend to discourage rather than encourage cost-effective joint treatment of industrial and municipal wastes. Several large operators of POTWs, the very people who are required to administer the program, have stated that the removal credit regulations are unworkable. In addition, a report by the House of Representatives Subcommittee on Oversight and Review of the Committee on Public Works and Transportation in the 96th Congress also concluded that removal credit provisions are unworkable. To resolve the problem, AISI recommends legislation to establish a process which would enable

local agencies having effective local programs to implement them without continued reliance on national categorical programs. Local agencies would be required to have in place, or be on a schedule to have in place before the compliance date for a categorical pretreatment standard, a pretreatment program that meets national pretreatment objectives and demonstrates the legal, administrative and technical capability to require industrial compliance with locally set requirements acceptable to the states and EPA. The local standards would be derived on a site-specific basis to protect water quality and sludge quality as well as plant operations.

Another serious problem to industry is encountered where diverse manufacturing operations discharge to the same wastewater collection system, requiring the application of two or more of the 21 major industrial pretreatment effluent limitations guidelines. Industry is required to meet pretreatment guidelines no later than three years after promulgation. Many of these guidelines, however, are yet to be promulgated. The net result is that individual plants are faced with the impossible situation of having to comply with at least two different compliance dates. This has been identified as "the moving target" problem. We believe that a better solution is to require a facility to meet its specific pretreatment standards three years after promulgation of the last set of regulations applicable to each specific facility.

In addition to these two areas where we believe that significant amendments to the Clean Water Act should be made, there has been considerable discussion of the need for amendments in other areas, particularly those of water quality standards and toxic pollution of streams. Relative to water quality standards, there has been a great deal of discussion of preventing the downgrading of waterways and maintaining existing designated uses. The steel industry, let me assure you, does not favor increased pollution levels in streams. We do not favor changing properly designated uses of various streams or allowing increased pollution which would prevent a stream from maintaining its presently achieved uses. On the other hand, we know that some present water quality standards were improperly set to provide for protection of fish, shellfish, and wildlife and recreation in and on the water, without adequate analysis as to whether these uses were attainable.

Some of the current designated uses do not represent proper uses now attained or even potentially attainable, but are the result of hasty and sometimes improper rulemaking. To perpetuate these mistakes of the past by legislative decree would not be to the advantage of the country or in keeping with the true objectives of the Clean Water Act. We believe that the present Clean Water Act provisions with respect to water quality standards are adequate.

Another aspect of water quality is a proposal for automatic upgrading of water quality criteria wherever water quality is shown to exceed current standards. We believe such a proposal contains serious potential for improper and damaging upgrading. For example, if stream surveys were conducted during periods of subnormal industrial operations and indicated a clean stream segment, that segment would have to be upgraded to equal the current quality level. Once operations return to normal levels, additional controls might be required simply to achieve the water quality encountered under periods of reduced operations. Such provisions would, in effect, represent a continuing "ratcheting down" of the criteria and result in a regulatory merry-go-round of revising the standards, installing additional treatment, and then repeating the process again. Clearly, this is not and should not be the intent of the Clean Water Act.

Furthermore, any time installation of additional facilities results in improved water quality, streams might have to be upgraded to conform to the newly encountered stream quality, even though there is no social or economic reason for such upgrading. Thus, automatic upgrading would severely limit any possibility of future expansion or growth since there would never be under such a proposal sufficient allocation of water quality to allow future waste flows.

It has also been suggested that the Act be amended to take care of "toxic hotspots;" that is, areas which will not meet fishable/swimmable water quality standards, even after implementation of best available technology and adequate pretreatment and municipal waste treatment. We believe that Section 302 of the present Act, which establishes a proper mechanism for establishment of water quality related effluent limitations beyond best available technology, is quite adequate to permit elimination of such "toxic hotspots" if they exist, and that no amendment to the Act is required to implement further controls of this type. The Institute believes that the present provisions of the Clean Water Act with respect to water quality standards adequately serve the purposes of the Act.

To summarize our position very briefly, we believe that the Clean Water Act should be amended quickly to extend the deadlines for achievement of technology-based requirements by industrial dischargers, and that the pretreatment provisions

should be modified to provide greater flexibility to encourage cost-effective joint treatment of industrial and municipal wastes. We do not believe that any changes to the water quality standards or toxic pollutants sections of the Act are required.

We thank you very much for this opportunity to appear before you today to express our opinions on amendments to the Clean Water Act. We will be happy to provide the Subcommittee any further information you require and to provide assistance in drafting effective amendments to the Clean Water Act.

Mr. ROE. Please proceed.

TESTIMONY OF WILLIAM L. WEST, DIRECTOR OF ENVIRONMENTAL CONTROL, REPUBLIC STEEL CORP., AND CHAIRMAN, AISI COMMITTEE ON ENVIRONMENT

Mr. WEST. I will do so.

Mr. Chairman, members of the subcommittee, I am William L. West, director of environmental control for Republic Steel Corp. I am appearing here today on behalf of the American Iron and Steel Institute, a trade association which includes 62 domestic corporations representing about 88 percent of the steel production capacity in the United States. I am chairman of the institute's committee on environment.

I would like to present the viewpoints of the American Iron and Steel Institute on amending the Clean Water Act. I testified before this subcommittee a little over a year ago and pointed out the industry's urgent need for extending the deadlines under the Act. The passage of a year has magnified the necessity for extending the compliance date of July 1, 1984, the present deadline in the act for technology requirements.

Most steel plants have not yet been issued permits that describe those requirements even though the applicable effluent limitation guidelines were issued over a year ago. The time for compliance has thus been reduced to less than a year. Therefore, we believe it essential that the Clean Water Act be amended to extend the deadlines for all technology based requirements by a period of 42 months after date of enactment, or 36 months after imposition of specific limits for industrial operations, whichever is later.

This extension should apply to all newly imposed technology requirements, including those under 301(b)(2) of the act and those under 301 (b)(1) (a)(1), any modified or redefined BPT will in most cases be achieved concurrently with the requirements for attainment of limitations set under section 301(b)(2), the BPT. We encourage the subcommittee to initiate amendments to effect such changes.

Another section of the Clean Water Act we believe should be amended deals with programs for pretreatment of industrial wastewater. We believe it quite appropriate that pretreatment portions of the law be reexamined and amended significantly to provide a more workable practical system of pretreatment permitting.

EPA's implementation of the removal credit program has resulted in regulations that are so complex and administratively difficult that they tend to discourage rather than encourage cost effective joint treatment of industrial and municipal waste.

To resolve the problem, AISI recommends legislation to establish a process which would enable local agencies having effective local programs to implement them without continued reliance on nation-

al categorical programs. Local agencies would be required to have in place or be on schedule to have in place before the compliance date for a categorical pretreatment standard a pretreatment program that meets national pretreatment objectives and demonstrates the legal, administrative and technical capability to require industrial compliance with locally set requirements acceptable to the States and EPA.

Another serious problem to industry is encountered through pretreatment where diverse manufacturing operation discharge to the same wastewater collection system requiring the application of two or more of the 21 major industrial pretreatment effluent limitations guideline. This has been identified as the moving target problem. We believe a better solution is to require a facility to meet its specific pretreatment requirements 3 years after promulgation of the last set of regulations applicable to each specific facility.

In addition to these two areas, we believe significant amendments to the Clean Water Act should be made, there has been considerable discussion of the need for amending in other areas, particularly those of water quality standards and toxic pollution of streams.

Some of the current designated uses do not represent proper uses now attained or even potentially attainable, but are the result of hasty and sometimes improper rulemaking. To perpetuate these mistakes of the past by legislative decree would not be to the advantage of the country. We believe the present Clean Water Act provisions with respect to water quality standards are adequate.

Another aspect of water quality is a proposal for automatic upgrading of water quality criteria whenever water quality is shown to exceed current standards. Automatic upgrading would severely limit any possibility of future expansion or growth since there would never be under such a proposal sufficient allocation of water quality to allow future waste flows.

It has been suggested also that the act be amended to take care of toxic hot spots, that is, areas will not meet fishable, swimable water quality standards even after implementation of best available technology and adequate pretreatment and municipal waste treatment. We believe section 302 of the present act, which establishes the proper mechanism for establishment of water quality related effluent limitations beyond best available technology, is quite adequate to permit elimination of such toxic hot spots.

To summarize our position very briefly, we believe the Clean Water Act should be amended quickly to extend the deadlines for achievement of technology based requirements by industrial dischargers and that the pretreatment provisions should be modified to provide greater flexibility to encourage cost effective joint treatment of industrial and municipal waste.

We don't believe any changes to the water quality standards or toxic pollutants sections of the act are required.

Mr. Chairman and members, I thank you for the opportunity to appear before you today and express our opinions on amendments to the Clean Water Act. We will be happy to provide to the subcommittee any further information you require and answer specific questions.

Mr. ROE. We want to thank you for your testimony.

I was taken by about the middle of page 3 where you made an observation.

> It is simply not a cookbook procedure analysis and evaluation of the uniqueness of the individual plant. Site-specific problems can be addressed only by the permit writer working closely with the plant operator.

I think what you are saying there is that where we have these industry related matters, such as the steel industry, somebody is going to write a framework of operation to achieve the optimum removal of pollutants; if they are, it can't be done from Washington by telephone. Somebody has got to be there to know what is going on.

Is that a fair assumption?

Mr. WEST. That appears to be a very long, involved process. Not only do they take the information we submitted to the, either the State or EPA, if they have the authority, but they also asked additional questions. There seems to be a question and answer period that goes on for several months.

The fact of the matter is that most people assumed the guidelines can be applied in a matter of a few hours and that you can tell your requirements—just the fact that EPA has not issued a significant number of permits for our industry even though our ELG's were issued over a year ago I think demonstrates the difficulty in issuing these permits.

Mr. ROE. Is that based upon the point of view that you have got to send back and forth to Washington or regional EPA offices? Or do people actually come out and inspect the operation?

Mr. WEST. They actually come out and inspect the operation. They ask for additional information. They also have to make some type of judgment as to sources within our plants that aren't subject to ELG's. There are some 57 subcategories in the iron and steel industry that are specific to our operations. Yet we also have other facilities that are not covered by those regulations.

The permit writer has to make some best engineering judgment as to what represents best practicable or best available treatment for that particular process. That becomes part of our permit also.

Mr. ROE. Which is time consuming.

Mr. WEST. Very time consuming.

Mr. ROE. We will continue to have some additional testimony.

As you know, this is the first overview. What we want to do is to develop the different theses and themes involved. We will be calling people back to get into it in more depth. But you have contributed well to our beginning. We appreciate it and will be in contact with you.

Mr. WEST. Thank you.

Mr. ROE. Thank you, Mr. West.

Our next witness is Ms. Ruth Keeton, who chairs the Howard County Council, Maryland, National Association of Regional Councils.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF RUTH KEETON, CHAIR, HOWARD COUNTY COUNCIL, MEMBER, REGIONAL PLANNING COUNCIL, BALTIMORE, MD.

Mr. Chairman, I am Ruth Keeton, Chair, Howard County Council and a member of the Regional Planning Council for the Baltimore Region. I appreciate the committee giving me this opportunity to testify on amendments to the Clean Water Act dealing with nonpoint source pollution.

Regional councils are areawide organizations of general purpose local governments encompassing a total regional community. Their primary purposes are to increase communication, cooperative decision-making and coordination among local governments, and to develop policies and programs to meet mutual problems. Regional councils have been established to deal with areawide problems such as environmental quality, housing, community and economic development, transportation and public safety. Regional councils exist today in all the nation's major metropolitan areas, including the 37 interstate ones. The National Association of Regional Councils represents over 350 regional agencies in both rural and metropolitan areas throughout the United States. Most of the designated 208 areawide water quality management planning organizations are members of NARC.

NARC strongly supports the efforts of this committee to address the problem of nonpoint source pollution. We are especially appreciative of Chairman Howard's and Representative Oberstar's leadership on this issue. The impact of nonpoint source pollution is too great to ignore any longer. Without control, it will dramatically diminish the positive effect of our point source efforts.

When the Clean Water Act was passed by Congress in 1972, the majority of water pollution control experience was with industrial and municipal point source problems. Our understanding of nonpoint source pollution was limited and early attempts to quantify the problem presented a global, almost all pervasive problem. However, through state and areawide nonpoint source efforts under the section 208, 205(j) and other programs, water quality managers have increased their understanding of the magnitude of the problem and have identified major categories and approximate sizes of nonpoint source loadings in most states. Using techniques developed in the 208, National Urban Runoff and other programs, areawide water quality managers are now able to more realistically identify those cases where nonpoint source pollution is having a significant effect on water quality and propose workable solutions.

From a national perspective, the 1982 state water quality assessments (305(b)) show that in one-fifth of the states, nonpoint source pollution is now the most important cause of water degradation in those waters not meeting uses. Agricultural nonpoint source pollution is the major source of nutrients in U.S. lakes with euthrophication problems. EPA reports that of those states (20) that have quantified their progress towards meeting the 1983 Clean Water Act goals, three-quarters (15) list nonpoint pollution as a significant source in their remaining problem waters. From my own experience centering on the Potomac and the Chesapeake Bay, we know that approximately 67 percent of the total nitrogen load and 39 percent of the phosphorus delivered to the Bay originates from nonpoint sources.

The Clean Water Act establishes a focus and rational decision-making process for the consideration of nonpoint source issues. States and local governments through their regional councils develop water quality management plans which describe both point and nonpoint sources of pollution, assist state and local officials in development of pollution control programs and provide a framework for managing water quality information on a continuing basis. Regional councils have been intimately involved in this process under the section 208 and 205(j) water quality management planning programs. Through EPA's farsighted sponsorship of the National Urban Runoff Program (NURP), regional councils (many of which were demonstration participants) have verified best management practices (BMP) and gained valuable operation experience.

In carrying out their responsibilities under the Clean Water Act, regional councils have developed water quality management plans, technical and administrative skills (that include the ability to identify and quantify nonpoint source problems and work within management systems that will implement best management practices) and management systems that are responsible for implementing plan recommendations. They have served as clearing houses and coordinators for all (or a variety of) water related activities within their regions. Councils serve as key links in the nonpoint source management networks that include state water pollution control agencies, local governments, soil conservation districts, university technicians, U.S. EPA, USDA and other government and private agencies.

More than anything the identification and solution of nonpoint source problems is an intergovernmental process. Most best management practices involve land use regulation. They cannot be carried out without the active support and cooperation of local government which has traditionally held this responsibility. Regional councils have had much success in mobilizing local governments and resources to address the nonpoint source problem. They have been able to link water quality concerns with traditional local interests like stormwater control, zoning and municipal development. Regional councils have assisted their member local governments in drafting preventative ordinances and effectively involved affected community groups in the development of nonpoint management programs.

The management of nonpoint source water pollution is very much a local government function in the Baltimore region. In Maryland, most of the powers and programs for this function have been delegated to local governments. Water pollution does not respect political boundaries. In order to be able to effectively plan for and manage water quality, Howard County has joined together with other major local governments in the region under the auspices of the Regional Planning Council as we have done in transportation and other important areas. Our region has prepared and adopted an areawide water quality management plan which has been fully certified by the Governor and EPA.

We and our neighbor local governments have been working for some time to implement this plan. Implementation was given a head start because the a Regional Planning Council passed through to its local governments about half of the "208" grant funds it received. The plan was prepared jointly by local staffs and the regional staff. Each local government has now organized itsl local staff as a local water quality management office. This means that the local people who helped prepare the plan are now working with their local colleagues to implement it. We hope to continue this cooperative implementation planning process under section 205(j) and to give implementation a major push with the assistance of the proposed legislation which I am testifying on today.

Some of the things we have done or are doing to implement our water quality plan include the following:

A task force of elected officials, water quality experts, and citizens made field inspections of the administration of our sediment and erosion control ordinance. We spotted problems and made management corrections so that compliance with program objectives rose from about 50 percent to over 90 percent.

We upgraded our stormwater management program to such a point that we will probably only have to make minor adjustments to comply with new state stormwater management regulations which have recently been adopted.

We have a water conservation program aimed at reducing water needs as well as reducing the load on our sewerage system. Water saving devices have been installed in over 10,000 dwellings. These save each house about 40 gallons a day or more than $60 a year.

We have expanded and upgraded our major sewage treatment plan so that it now produces some of the cleanest effluent in the state.

We have enacted low-density zoning for much of our most environmentally-sensitive watersheds so that pollution from urban runoff will be minimized.

Our county contributes to the budget of the Soil Conservation District which is doing very important job in implementing the nonpoint source controls in the agricultural plan adopted by our county, the Regional Planning Council, and the state.

These and other actions have been taken in close consultation with the state and downstream counties which will benefit from protection of the quality of water flowing into their jurisdictions and similarly upstream jurisdictions have worked with us in preparing and implementing their plans. Cooperative planning through the Regional Planning Council has been invaluable in providing both for the give and take and for the areawide interest necessary for practical intergovernmental cooperation.

The grant funds which can be made available to local governments and areawide organizations to promote implementation will have a great deal of leverage in terms of improving water quality because we already have most of the powers, programs, and people to take necessary action. We have already developed the necessary cooperative working relationships at local, regional, and state levels. We do, however, need additional incentives in order to exercise this leverage. I will elaborate on this later in my statement.

While appropriate consideration of abatement and control of pollution from nonpoint sources throughout the water quality management process is required by the Clean Water Act and existing EPA regulations, NARC feels nonpoint source prob-

lems have not received the attention they deserve. This has occurred for a number of reasons.

EPA has not placed enough emphasis on nonpoint source pollution as a problem of national concern. While it is understandable that the agency would try to concentrate its efforts on the more obvious point sources in the early years of the clean water program, there has not been a strong institutional focus of nonpoint issues within EPA. Termination of funding for areawide management planning under section 208 has, in NARC's view, further accentuated the perception that nonpoint source problems were not considered a high priority by EPA.

Most states have downplayed the nonpoint source problem since no money is available under the construction grants program to address it and they know they still have to manage the point source problem anyway. The definition of nonpoint source problems is an exacting science and many states have choosen to focus on point sources where the funding (construction grants) and implementation program (NPDES) is well defined. This can be illustrated by an analysis of grants made under the recently enacted section 205(j) water quality management planning program. NARC, in an informal survey, found that most of the funding was being used to support state level construction grant activities. Even in those cases where funds have been passed through to areawide water quality management agencies the focus of much of the work program is on activities that support construction grants. EPA did not make any discernable effort to direct at least a portion of these funds to nonpoint source activities.

Finally, funding for implementation of nonpoint source control programs has fallen largely to local governments. In this period of difficult fiscal constraints, local officials must weigh the benefits of nonpoint management programs against the benefits of all other services they must provide. It is difficult to justify initiating or maintaining a nonpoint management program when local officials cannot make a compensating reduction in their expenditures for treatment facilities or operations. The Clean Water Act presently does not allow any reduction in pollutant loadings caused by implementation of nonpoint source management practices to be credited toward meeting point source loading requirements. The lack of such incentives weighs the decision-making process toward initiation of construction grant type solutions where assistance is available.

In order for nonpoint source problems to be solved, NARC believes a number of steps should be taken. EPA must give higher priority to nonpoint sources problems and urge the states and local governments to do the same. Recently, NARC participated in a meeting convened by Acting Administrator for Water, Rebecca Hanmer to discuss how EPA can improve its effectiveness in this area. This is a good start and NARC is currently putting together a list of suggested changes that EPA could make in its regulations and policies to give greater emphasis to nonpoint source issues. Further, we must continue to identify and refine our understanding of nonpoint source problems, including a reexamination of data and recommendations developed in 208 plans in light of findings from the National Urban Runoff, Great Lakes International Surveillance Plan, Chesapeake Bay, Rural Clean Water and Model Implementation programs.

Nonpoint source problems tend to be site specific in terms of the types of pollutants and best management practices that are most effective. These can best be determined at the local level through existing areawide water quality management agencies. NARC does not believe massive new nonpoint source assessments must be made but there is a need to initiate or continue "implementation planning" which will give life to adopted water quality management plans.

Implementation planning would be characterized by the following activities:

(1) Assumes the problem has been identified.

(2) Assumes the management practices have been identified.

(3) Identifies the agency(ies) proposed to be responsible for implementing control measures.

(4) Identifies all legislation and rules which affect agencies activities as well as those that are related to the pollution problem and BMPs.

(5) Examines current agency practices which are or may be related to BMP implementation.

(6) Identifies benefits (water quality and others) which will accrue to the community if BMP is implemented.

(7) Identifies incremental costs to the agency, to the private sector, to consumers, to the public for various levels of implementation.

(8) Examines and identifies potential revenue sources to defray incremental costs.

(9) Describes and encourages needed changes in agency practices for BMP implementation.

(10) Identifies and encourages needed changes in legislation and rules.

(11) Suggests funding mechanism.

(12) Works with affected public officials, agency personnel and the public throughout the process.

(13) Fully documents all data, findings and recommendations.

(14) Institutes and maintains education program.

Much of this activity related to the intergovernmental process, I referred to earlier. Recent evaluations of the Model Implementation Program noted that future nonpoint source programs should provide sufficient opportunities for implementation planning and mechanisms must be established to transfer state of the art technology to projects and ensure that it is appropriately utilized. Finally, NARC believes federal and state funds should be made available to supplement local resources.

NARC supports the establishment of a national nonpoint source management program that would provide financial assistance on a matching basis to states, local governments and their areawide water quality management agencies. The program should build on the work that has already been accomplished in the 208 program. Areawide water quality management agencies should refine water quality management plans, where appropriate, in light of findings and data developed under the NURP, RCWP and MIP programs. Priority should be given to implementing preventive measures to protect critical and high quality water bodies (such as water supply) and abatement measures for those water bodies not meeting standards where NPS is a significant factor. The prevention of nonpoint source problems through the early implementation of best management practices in urbanizing areas is our most cost-effective strategy.

NARC feels the nonpoint source problem is serious enough to require the states to begin implementing a management plan within two years. States should be required to meaningfully involve local governments and areawide water quality management agencies in the development of the nonpoint source control program. Funds should be provided to local governments and areawide agencies to implement those control strategies to be performed at the local level. We would include the phrase "to the maximum extent possible" in such a provision. Regional councils have developed a high level of expertise about the water quality problems in their regions and it should be utilized.

This legislation should also contain provisions calling for the continuation of assistance under sections 205(g), 205(j) and 106. EPA should issue regulations coordinating activities under these sections with the new nonpoint source program. The regulations should also require states to give priority in funding section 205(j) to areawide agencies undertaking nonpoint source control programs as was intended by Congress. A survey conducted earlier this year by NARC, revealed that while 88 areawide and local water quality management agencies received some funding under the section 205(j) program, the majority of these funds were retained at the state level.

I must note that in order to get these funds to pass down to the local and areawide levels where cooperative planning and implementation must largely take place, there must be very explicit direction by Congress. Even under section 205(j) where Congress mandated that priority funding go to areawide and local units, Regional Planning Council has spent more than a year in intense negotiations with the state water quality agency in trying to get these pass-through funds to actually reach the local level. In particular, to assure that local governments and areawide agencies are real partners with the states in nonpoint source management, Congress should once again mandate priority funding to areawide organizations and local governments and require the EPA regional administrators to take positive steps to insure its intent is carried out.

Recognizing that the current federal budget situation will limit the amount of funds available for a national nonpoint source management program, NARC would provide additional incentives for states and localities to address nonpoint source problems. A major assist would be to allow any reduction in pollutant loadings through the use of nonpoint management practices to be credited toward meeting point source loading requirements in that area. NARC feels such an incentive is applicable in many areas and could save expenditures under the construction grants program. A necessary prerequisite to NARC's incentive proposal is the establishment of a monitoring system under the state's implementation plan that is capable of measuring their reduction of pollutant loadings resulting from nonpoint source management practices. NARC is confident that such monitoring systems are technically feasible and reliable based on the experiences of regional councils across the country.

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NARC also proposes to allow an adjacent downstream state to petition the EPA Administrator to make a determination whether the failure to develop and implement a nonpoint source management program had an adverse impact on the petitioning state's efforts to attain national water quality goals. If the determination is affirmative, the Administrator could order the offending state to develop and implement a compatible nonpoint source management program. Failure to comply would allow the petitioning state to bring a civil action providing for penalties up to $10,000 per day during such violation. We feel this proposal leaves the responsibility where it belongs, at the state level, and provides an opportunity for states to negotiate their differences.

NARC believes the enactment of national nonpoint source management program would be a positive step in addressing this important water quality issue. We urge the committee to include such a provision in the final version of H.R. 3282. NARC appreciates the opportunity to testify before this distinguished committee and I will be pleased to try and answer any questions that you may have. Thank you.

Mr. ROE. Please proceed.

TESTIMONY OF RUTH KEETON, CHAIR, HOWARD COUNTY COUNCIL, MARYLAND, NATIONAL ASSOCIATION OF REGIONAL COUNCILS, AND MEMBER, REGIONAL PLANNING COUNCIL, BALTIMORE, MD., ACCOMPANIED BY JOHN J. BOSLEY, COUNSEL

Ms. KEETON. May I introduce John Bosley, legal counsel for the National Association of Regional Councils. I have asked him to join me in case there are questions.

Mr. ROE. We appreciate your testifying.

Ms. KEETON. Thank you.

For 9 years I have been a member of the Baltimore Regional Planning Council and am happy to speak out of that experience to you. I am also the very proud council member of a county that has a treatment plant that discharges one point phosphorus and is respected up and down the Patuxent River.

Mr. ROE. Fine.

Ms. KEETON. Our focus today, though, for regional councils is nonpoint source pollution. NARC strongly supports the efforts of this committee to address the problem of nonpoint source pollution. We are especially appreciative of chairman Howard's and Representative Oberstar's leadership on this issue. The impact of nonpoint source pollution is too great to ignore any longer. Without control, it will dramatically diminish the positive effect of our point source efforts.

When the Clean Water Act was passed by Congress in 1972, the majority of water pollution control experience was with industrial and municipal point source problems. Our understanding of nonpoint source pollution was limited and early attempts to quantify the problem presented a global, almost all-pervasive problem. However, through State and areawide nonpoint source efforts under the section 208, 205(j) and other programs, water quality managers have increased their understanding of the magnitude of the problems and have identified major categories and approximate sizes of nonpoint source loadings in most States. Using techniques developed in the 208, national urban runoff and other programs, areawide water quality managers are now able to more realistically identify those cases where nonpoint source pollution is having a significant effect on water quality and propose workable solutions.

From a national perspective, the 1982 State water quality assessments, 305(b), show that in one-fifth of the States, nonpoint source

pollution is now the most important cause of water degradation in those waters not meeting uses. Agricultural nonpoint source pollution is the major source of nutrients in U.S. lakes with euthrophication problems. EPA reports that of those States—20—that have quantified their progress towards meeting the 1983 Clean Water Act goals, three-quarters—15—list nonpoint pollution as a significant source in their remaining problem waters.

From my own experience centering on the Potomac and the Chesapeake Bay—where I serve on the land use committee created by the three Governors, of Pennsylvania, Virginia and Maryland, to recommend management priorities to them before their summit meetings this winter—we are all learning that 67 percent of the total nitrogen load to the bay and 39 percent of the phosphorus delivered to the bay originates from nonpoint sources. And we know what to look for and what to do about it.

So today nonpoint is a greater focus and one we can identify and one that needs to be addressed in a comprehensive program under Clean Water Act. More than anything, the identification and solution of nonpoint source problems is an intergovernmental process. Most best management practices involve land-use regulations. They cannot be carried out without the active support and cooperation of local government, which has traditionally held this responsibility.

Regional councils have had much success in mobilizing local governments and resources to address the nonpoint source problem. They have been able to link water quality concerns with traditional local interests like stormwater control, zoning and municipal development. Regional councils have assisted their member local governments in drafting preventative ordinances and effectively involved affected community groups in the development of nonpoint management programs.

Water pollution does not respect political boundaries. My county, Howard County, has joined together with the other six county governments in the Baltimore area representing over half the State's population, as we have done in transportation and other important areas to manage our water resources. We have approved—both the Governor and EPA fully certified an areawide water quality management plan that addresses both point and nonpoint efforts.

Our local governments have been working for some time to implement this plan. Implementation was given a headstart because the Regional Planning Council passed through to its local governments about half of the 208 grant funds it received. The plan was prepared jointly by local staffs and the regional staff.

Each local government has now organized its local staff as a local water quality management office. This means that the local people who helped prepare the plan are now working with their local colleagues to implement it. We hope to continue this cooperative implementation planning process under section 205(j) and to give implementation a major push with the assistance of the proposed legislation which I am testifying on today.

We have had some regrets that in our State and other States that the section 205(j) funds have not been distributed back to areawide and local jurisdictions as the legislation you have approved mandates. Let me give you an example of things we are doing in the region to implement our water quality plan.

A local task force of elected officials, water quality experts, and citizens made field inspections of the administration of our sediment and erosion control ordinance. When you actually go to see whether they are only in the books or are also being implemented on the land, particularly during construction, we found that more needed to be done. In my case, two additional inspectors were sent out. Every building inspector, whether he is for funding or electricity or what, is now trained to fly a water quality problem and to alert specialists to check it out immediately.

Within the region, the compliance with the program objectives of the 208 plan have risen from 50 percent to over 90 percent in those areas because you keep an eye on it on a constant basis and provide the local government staff resources to make sure it works.

We have upgraded our stormwater management program to such a point that we will probably only have to make minor adjustments to comply with new State stormwater management regulations which have recently been adopted.

We have a water conservation program aimed at reducing water needs as well as reducing the load on our sewage system. We know we can't always have those capital funds to invest in upgrading and expansion that it is urgent we use them with a sense of stewardship. Water saving devices have been installed in over 10,000 dwellings. These save each household about 40 gallons a day or more than $60 a year.

We have expanded and upgraded our major sewage treatment plant so that it now produces some of the cleanest effluent in the State.

We have enacted low-density zoning for much of our most environmentally-sensitive watersheds so that pollution from urban runoff will be minimized.

Our county contributes to the budget of the Soil Conservation District which is doing a very important job in implementing the nonpoint source controls in the agricultural plan adopted by our county, the Regional Planning Council, and the State.

These and other actions have been taken in close consultation with the State and downstream counties which will benefit from protection of the quality of water flowing into their jurisdictions and similarly upstream jurisdictions have worked with us in preparing and implementing their plans. Cooperative planning through the Regional Planning Council has been invaluable in giving us the give and take for the areawide interest necessary.

While appropriate consideration of abatement and control of pollution from nonpoint sources throughout the water quality management process is required by the Clean Water Act and existing EPA regulations, NARC feels nonpoint source problems have not received the attention they deserve. This has occurred for a number of reasons.

Most States have downplayed the nonpoint source problem since no money is available under the construction grants program to address it, and they know they still have to manage the point source problem anyway.

Finally, funding for implementation of nonpoint source control programs has fallen largely to local governments. In this period of difficult fiscal constraints, local officials must weigh the benefits of

nonpoint management programs against the benefits of all other services they must provide.

In order for nonpoint source problems to be solved, NARC believes a number of steps should be taken. EPA must give higher priority to nonpoint sources problems and urge the States and local governments to do the same.

We must continue to identify and refine our understanding of nonpoint source problems, including a reexamination of data and recommendations developed in 208 plans in light of findings from the national urban runoff, Great Lakes international surveillance plan, Chesapeake Bay, rural clean water and model implementation programs.

In other words, we have learned a lot; we know a lot. Now we need to really focus on doing it.

Nonpoint source problems tend to be site-specific in terms of the types of pollutants and best management practices that are most effective. These can best be determined at the local level through existing areawide water quality management agencies. NARC does not believe massive new nonpoint source assessments must be made, but there is a need to initiate or continue implementation planning and initiation which will give life to adopted water quality management plans. We have gone that far, and it is no time to quit.

Finally, NARC believes Federal and State funds should be made available to supplement local resources. NARC supports the establishment of a national nonpoint source management program that would provide financial assistance on a matching basis to States, local governments and their areawide water quality management agencies. The program should build on the work that has already been accomplished in the 208 program. Areawide water quality management agencies should refine water quality management plans, where appropriate, in light of findings and data developed under the NURP, RCWP and MIP programs.

It is not like starting from scratch. Priority should be given to implementing preventive measures to protect critical and high quality water bodies—such as water supply—and abatement measures for those water bodies not meeting standards where NPS is a significant factor.

NARC feels the nonpoint source problem is serious enough to require the States to begin implementing a management plan within 2 years. States have many tools, but it should be put together as a key element of a water quality program, nationally and locally.

States should be required to meaningfully involve local governments and areawide water quality management agencies in the development of the nonpoint source control program. Funds should be provided to local governments and areawide agencies to implement those control strategies to be performed at the local level. We would include the phrase, "to the maximum extent possible," in such a provision. Regional councils have developed a high level of expertise. We, as policy makers, understand and know what is needed.

This legislation should also contain provisions calling for the continuation of assistance under sections 205(g), 205(j) and 106. EPA should issue regulations coordinating activities under these sec-

tions with the new nonpoint source program. The regulations should also require States to give priority in funding section 205(j) to areawide agencies undertaking nonpoint source control programs, as was intended by Congress.

I must note that in order to get these funds to pass down to the local and areawide levels where cooperative planning and implementation must largely take place, there must be very explicit direction by Congress.

Recognizing that the current Federal budget situation will limit the amount of funds available for a national nonpoint source management program, NARC would provide additional incentives, for example, for States and localities to address nonpoint source problems. For example, a major assist would be to allow any reduction in pollutant loadings through the use of nonpoint management practices to be credited toward meeting point source loading requirements in that area.

In the Patuxent River Basin, we have agreed on a standard for nitrogen and phosphorus loadings at a level that would restore that river to the quality of the early 1950s. And we can translate that into both nonpoint and to point pounds. And so that the end product is the one that creates the benefit to the river that you wish.

NARC feels such an incentive is applicable in many areas and could save expenditures under the construction grants program. A necessary prerequisite to NARC's incentive proposal is the establishment of a monitoring system under the State's implementation plan that is capable of measuring their reduction of pollutant loadings resulting from nonpoint source management practices.

We are now monitoring monthly on the Patuxent River, for example, so we will be able to share with the residences whose practices, and, in the case of the agricultural community, are contributing to the water quality—we will be able to have a show and tell so they can see a direct linkage. NARC is confident that such monitoring systems are technically feasible and reliable based on the experiences of regional councils across the country.

NARC believes the enactment of a national nonpoint source management program would be a positive step in addressing this important water quality issue. We urge the committee to include such a provision in the final version of H.R. 3282.

We appreciate the opportunity to be included as you begin to refine and add to this legislation. We would be happy to be of any help to you at any time.

Mr. ROE. Thank you very much for your indulgence. You know, I think you have made a splendid presentation. I am not saying that just to be nice.

I think that what you have pointed out is two things that are extremely important. One is that if we are going to carry out a national water resources policy, then it has got to be carried out by everybody participating.

Ms. KEETON. That is right.

Mr. ROE. It can't be directed from Washington alone.

I think the second point is that as we now have come full circle today vis-a-vis the harbor program we had earlier, that the relationship of cleaning up that whole basin or any other basins along the line depends on how we do with nonpoint source pollution.

Ms. KEETON. Very much.

Mr. ROE. Without the two going hand-in-hand, we are just not going to achieve it.

So I want to thank you for your testimony. We are not through with your input yet; you know that.

Ms. KEETON. Yes. Thank you.

Mr. ROE. We will be calling all of these witnesses back as the program unfolds so that we can start to plug in some of the observations that we have been able to enjoy today and exchange views on.

Ms. KEETON. As a resident of the Bay, one of the watersheds, tributaries, I would like to add my support to Representative Dyson's comments, also.

Mr. ROE. I would like to see Representative Dyson add, however, nonpoint source as being an extremely important part of that legislation.

Ms. KEETON. I agree.

Mr. ROE. The gentleman from Minnesota.

Mr. STANGELAND. I, too, want to thank you, Ms. Keeton, for excellent testimony, and a concern of a problem that I think perhaps the Congress, because of resources and priorities, hasn't addressed as well as it might. It is not only EPA's problem or fault. It might well be part of our problem.

I think the concept was that point sources could be addressed first and resolved; then nonpoint came in. I look forward to future hearings on this matter.

Mr. ROE. Thank you very much for being with us this morning.

Before we recess, I would like to enter into the record at this point a statement received from our colleague, the Honorable Brian Donnelly of Massachusetts, a member of this committee and the Subcommittee on Water Resources.

[Statement referred to follows:]

STATEMENT OF HON. BRIAN J. DONNELLY, A REPRESENTATIVE IN CONGRESS FROM MASSACHUSETTS

Mr. Chairman, The Clean Water Act has been on the books for eleven years now. In that short span of time, our nation has worked together to make dramatic improvements in the quality of our rivers, streams, and lakes.

Waterways that were open industrial and municipal sewers just a few years ago now run clean. Delicate speicies of fish and plant life have been reintroduced successfully in many cases. But the job is not complete.

As part of our effort to restore the quality of our inland waters, I urge this subcommittee to address the growing problem of acid rain. In vast areas of our country, and certainly in the New England region, acid precipitation is un-doing much of the work we have done to make our waters safe for aquatic life and for recreation.

A recent study in Massachusetts shows 82 percent of our lakes and streams affected by acid rain. One stream in nine cannot support fish at all. Ponds and lakes that have been stocked with fish are so acidic, the fish are unable to reproduce, and catches have fallen steadily and sharply in recent years. In the Quabbin Reservoir, a major fishing spot, the harvest dropped by one-third in 1981, and by another 10 percent last year.

What is happening in Massachusetts is symptomatic of what is happening through much of this country and Canada. The fact is that a substantial amount of water pollution is currently caused by airborne pollutants. Our nation's need for comprehensive legislation to combat water pollution requires us to address the issue of acid rain. I encourage this subcommittee to take the first positive legislative steps to control this serious threat to our environment.

Mr. ROE. The subcommittee will stand in subject to the call of the Chair.

[Whereupon, at 1 p.m., the subcommittee recessed subject to the call of the Chair.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

TUESDAY, SEPTEMBER 20, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington D.C.

The subcommittee met at 10:07 a.m., in room 2167, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen.

This morning the Subcommittee on Water Resources resumes its hearings on possible amendments to the Federal Water Pollution Control Act. We will have another hearing Thursday of this week as well as additional days in the future in order to accommodate the very large number of persons and organizations who have expressed a desire to testify on this most important clean water issue.

During these hearings we expect to receive testimony on a wide range of issues, including extension of the compliance deadlines for achievement of best available technology by industry, the pretreatment program, nonpoint source pollution, water quality standards, and other issues relating to our efforts to restore and maintain the quality of the Nation's waters. The information developed at these hearings will enable us to ascertain what amendments are appropriate in order to improve the Federal water pollution control program and make it work more effectively.

Before we call our first witness, we have our chairman of the full committee, Jim Howard from New Jersey, and the Chair would defer to the chairman of the full committee.

The CHAIRMAN. I thank you, Mr. Chairman, and I will be very brief.

What I want to do is to congratulate you and congratulate all the members of the subcommittee for the work that you are doing now concerning clean water, which is such a vital, vital issue in many ways all over this Nation, and the fact that you are looking deeply into the basics of the problem. This subcommittee has certainly done a monumental task already on the water projects legislation which passed this committee. That would be a fine badge of accomplishment if it were the only thing that this subcommittee did during this Congress. I just want to thank you on behalf of all the other members of the full committee for the work you are doing on this vital subject and we certainly look forward to seeing a fine,

fine bill come from this subcommittee out to the full committee. I just wish to congratulate you on your effort.

Mr. ROE. I want to thank the Chairman for his generous comments.

The Chair defers to Mr. Stangeland.

Mr. STANGELAND Thank you, Mr. Chairman.

I want to join you in welcoming all of the witnesses and will testify on the issue of maintaining and improving the quality of the waters of the United States.

The Federal Water Pollution Control Act amendments, commonly known now as the Clean Water Act, continues to be a valuable tool for insuring that this Nation will always have an abundant source of clean water.

This act has been basically sound environmental legislation for over 10 years. Nonetheless, we should always consider any legislation that will improve the purposes of this act. For instance, significant changes were made in 1981 to title II, the construction grants program.

Among other things this year, some of the funding provisions of the Clean Water Act must be addressed. Section 106, the State grants provision, and section 314, the clean lakes program, are examples of funding provisions that expired last September. Such provisions need to be reviewed and considered for continued funding. Other major issues that deserve full consideration this year include compliance dates, pretreatment, nonpoint sources, and permits, among others, as you so eloquently outlined.

Today, and in subsequent hearings, we will be hearing suggestions for changes that can be made to improve the Clean Water Act. In many cases I am sure we will hear arguments to not change parts of the act. In any case, the goal must be a viable piece of legislation that is tailored to meet the needs of today and the future.

Mr. Chairman, I look forward to hearing from our witnesses today. I hope that upon consideration of their views, we will be able to craft this legislation so as to continue the Nation's efforts to maintain and improve the quality of our rivers and lakes.

Thank you, Mr. Chairman.

Mr. ROE. I thank the gentleman from Minnesota.

We have the honor as our first witness today, the Honorable Abraham Kazen from Texas, a distinguished leader in Congress in many fields, particularly in water supply and water quality. So, we want to welcome our colleague here today.

TESTIMONY OF HON. ABRAHAM KAZEN, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. KAZEN. Thank you, Mr. Chairman.

Before I start my presentation, I want to assure you that I appreciate the work that your subcommittee is doing in this very vital facet of American life. I appreciate the cooperation, the work that we have done together. As you know, I chair the subcommittee on Power and Water Resources of the Interior Committee, and I have had the privilege of working very closely with you and the members of this Committee.

Mr. Chairman, I am here today to express my appreciation for the work your committee is doing in the critical area of clean water and to speak briefly on some of the problems facing my State and, in particular, the city of San Antonio.

It is my understanding that Mayor Cisneros of San Antonio and some of our city officials hope to appear before this committee at some future date to address the needs of the city, but I would like to take this opportunity to outline some of their problems in a general way and perhaps to suggest one or two possibilities for future consideration.

San Antonio is faced with coming up with $448 million for sewage treatment and sewer facilities to meet the Federal Government's 1988 deadline for secondary treatment and the State's water quality standards.

Approximately $300 million of the $360 million program is needed to meet backlog and existing treatment and collection needs, and $60 million is for growth, yet the Texas Department of Water Resources estimates that the city may receive a maximum of only $50 million in Federal funds during 1984 and 1985. We are talking about 10 percent of the total amount although Congress provided for 75 percent matching grants, which has not yet been appropriated.

The major element of the San Antonio program is the replacement of an outmoded and totally inadequate facility at Rilling Road with the Dos Rios Plant. Rilling Road is so objectionable, the stench is so bad, that it has actually stifled growth in the southern part of the metropolitan area.

EPA approved the plan in April 1980. It is agreed that the Dos Rios Plant will have major water quality benefits for the San Antonio River and the San Antonio National Historical Park. San Antonio played by the rules, Mr. Chairman, and conducted five major planning steps, from regional plan through a public participation program, and it has done all that it has been asked to do by the government.

The only thing lacking is adequate funding. At this point, I would add that I know there are local jurisdictions across the country faced with the same deadlines and compliance schedule, and I believe that improvement of water quality has major public health, economic and environmental benefits. This is a legitimate national endeavor, and it should be accomplished.

Mr. Chairman, I endorse additional funding. As all of us know, there are many issues where we would like to allot more funds, but because of national priorities we must bite the bullet and cut, postpone or eliminate.

I simply do not see how we can afford to do this when the legitimate national goal of cleaning up our water is concerned. It needs to be confronted squarely and handled promptly according to timetable. Unfortunately, because of the level of funding, this is not being done, and projects delayed are projects made more expensive for future generations.

I would also hope that we in Congress can come up with some way of targeting areas of greater need, such as replacement of Rilling Road when it is obvious that it is causing a health problem for a great growing metropolitan area. One way might be in legislation

allowing the States to target critical water quality areas which the current law does not allow.

Our State officials—and I hope you hear from them in the near future—feel they could do a better job distributing the money based on need if the laws were changed to give them more flexibility. In the 1981 amendments, changes were made in funding priorities to allow for only backlog needs and none—none for growth. Texas suffered from this because some of our cities are growing faster than the backlog needs can be handled, and I hope that your committee will take this into consideration during your deliberations.

I appreciate you hearing me out today, and I urge you to listen carefully when you hear from our Texas officials and consider the difficult problems facing them and all of our local governments endeavoring to do what we have told them must be done.

This is an issue with wide support. I know it is a difficult problem for this committee, but I urge you to continue your usual good job.

Mr. ROE. We thank our distinguished colleague for his excellent testimony and I for one agree most fully in what the points that he has made, and we will work in that direction.

Are there any further questions for our distinguished colleague?

The gentleman from New Jersey.

The CHAIRMAN. Thank you very much, Mr. Chairman.

I just wish to thank the gentleman from Texas for appearing here today. He is one of the main reasons we have this fine cooperation between his Subcommittee on Water and Power Resources that has such an interest in water on the Committee on Interior and our committee. I thank him also for his testimony facing up to the fact of what we must do. There are some areas where cutting back money at this time while in the long run it is going to cost us a lot more. We do know from my area in New Jersey where we had a great deal of pollution of our streams when this committee started the first major clean water legislation back in 1965, we have been able to see in 17 or 18 years the slow progress we have been making. We have seen the fact that our rivers, our streams, our bays are being cleaned up very slowly. We have heard from our fishermen of the kind of fish that are back in the area that we had not seen in 20 years. Our inlets are becoming cleaner and we are beginning to see the small crabs coming back into the inlets where they had not been for many, many years. But with the cutbacks in sewerage treatment plant construction funds by more than a half in the last two budgets that we passed, we have seen a very fast deterioration of this situation. And we have come to the conclusion that although it takes a long, long while to clean up the waters in this country, it does not take much time at all to see them ruined. That is why we are hoping that we will be able to come out of this committee and present to the floor a bill with reasonable funding for the things that we know we have to do, the situations that we can begin to correct, without any breakthrough in technology. This may be one area in Federal spending where you can solve a problem by throwing money at it because we know what we have to do. The cold facts of the dollars are there. If we do that, then we can progress so that we will have a decent environment in the future.

And for every year that we fail in that, we may be giving ourselves an additional 8 to 10 years of much more expensive funding to try and clear up this situation. So I am very, very happy to hear from the gentleman from Texas who shows that this problem is not just an industrial Northeast, Upper Midwest problem. We have a big job to do for all of our people all over the country. I think that is a very, very good sign.

I wish to thank the gentleman for his appearance and for his support for decent clean water legislation. I am sure it will have a profound impact on other Members of the House when we do bring what I am sure what will be a fine bill before the House of Representatives in the near future. And I want to thank him very much for his very valuable testimony here today.

Mr. KAZEN. Well, Mr. Chairman, it is we, the other Members of this Congress, who are not privileged to sit on this committee that owe you and the members of your committee a great debt. There is no question but what the health of the people of this country must have the highest priority. And when you have a situation like I have in our city of San Antonio, where under the Clean Water Act they were promised 75 percent funding, we do not even get 10 percent. At the same time, there is a deadline of 1988 and our people just do not have the money to do it locally. The residential monthly sewage fee the total program will require will be in 1988 of $31. A fivefold, fivefold Mr. Chairman, increase of 1982 rates.

Mr. Chairman, we have only received $2 million. Because we took the time to get the complete package and not having done it in stages, the way Dallas did, the way Houston did, they received millions of dollars, but we followed the law which said we want a comprehensive plan. We did it. Now it is complete and the money is not there. Yet we have got that deadline to meet, we have that terrible, terrible situation down there in the center of the city where the health of the people of that great metropolitan area is endangered every day. The stench is so bad, Mr. Chairman, you cannot even get in that part of town, and it is stifling the growth. And that is where we have got to make these corrections, highest priority possible, clean water, the health of our country. And for this, Mr. Chairman, knowing what your interests, the interest of this committee is, we want to thank you for what you are doing and certainly we stand ready to help you.

The CHAIRMAN. That may be why it is beneficial that we do have a Federal Government that does have the type of vast resources for collecting and equitably distributing funds as needed with proper flexibility for the local people. We certainly hope to be able to respond to that.

So I agree totally with what you said and thank you an awful lot for coming here today.

Mr. KAZEN. Thank you, Mr. Chairman.

Mr. ROE. Are there any further questions for the distinguished Chairman from Texas?

We want to thank you very much for your splendid contribution.

Mr. KAZEN. Mr. Chairman, thank you.

Mr. ROE. Our next witness this morning is the Honorable Lang Marsh, who is Deputy Commissioner of the New York State De-

partment of Environmental Conservation, and is representing Mr. Henry G. Williams.

We want to welcome Mr. Marsh to our committee.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY OF NEW YORK STATE COMMISSIONER OF ENVIRONMENTAL CONSERVATION HENRY G. WILLIAMS

Good morning Mr. Chairman and members of the subcommittee, I am Langdon Marsh, executive deputy commissioner of the New York State Department of Environmental Conservation. On behalf of Commissioner Herny G. Williams, I appreciate the opportunity to share with you some New York views relative to clean waters.

In our experience, the current Water Act is basically sound and has led to significant improvements in the quality of New York's and the Nation's water. We are proud of our accomplishments but recognize that adjustments are necesssary if we are to sustain these accomplishments and also to progress with the difficult toxic and hazardous substance problems facing us. We must also recognize the continued need to complete the upgrading of sewage treatment facilities through the construction grant program. Specifically for the more important subject areas we recommend:

1.. Funding authorization: Retain authorized level of $75 million for section 106 program grants for the next five years and $22.7 million for the section 104 training grants.

2. Construction grants: Extend the program for a minimum of four years and increase the annual appropriations to $3.5 billion nationally. Further, funding to States for program grants administration should be continued through section 205(g).

3. Compliance dates: Extend deadlines for BAT for industry and secondary treatment for POTWS to July 1, 1988.

4. NPDES permit duration: Extend permit term from 5 to 10 years.

5. Water quality standards: Retain section 3.3 intact.

My summary comments will focus on those amendments we believe are most critical to enhancing the national framework for water quality management while providing the flexibility the States need to administer their responsibilities.

1. FUNDING AUTHORIZATION

State grants under section 106 represent the primary source of federal funding for the administration of our water pollution control program responsibilities. Any reduction in real dollars to State programs at this time could have a significant impact on our ability to deliver basic programs. Reduction of our monitoring network, curtailment of our inspection and enforcement activities relative to major facilities, and the return of delegated programs such as NPDES are real possibilities within the next few years, given administration proposals and state resource constraints.

It is totally inconsistent to promote the enhancement of State authority and flexibility while simultaneously withdrawing an already inadequate Federal support base. It is further incongruous that Congress might reduce this support just as the issues become more complex. As we turn the corner on responding to the conventional pollutant problems, which still exist, I might add, we're faced with the arduous task of adequately regulating the discharges of toxic/harzardous contaminants to our water bodies.

As there are timing and statutory problems with supplementing 106 funds with 205(g) and (j) allocations, we can't support EPA's contention that offsetting funds might be available. It remains essential that 106 funds continue and to reach a level of $75 million dollars and that they be sustained.

2. CONSTRUCTION GRANTS

Historically the time period from project initiation to project completion has been 7-10 years. Thus, any program extension must be for a minimum period of four years to accommodate the planning and design periods necessary to get a project to the contruction phase. A period of time such as this along with consistent, available

funds will permit all levels of government to properly plan, budget and manage the program to improve water quality.

Funding in the past has been erratic (appropriations less than authorization) and generally less in each succeeding year. Further, current levels are insufficient to meet the inflation needs of the projects proceeding under the program. New York State has needs to excess of $16 billion with projects in the grants program totalling $4.5 billion and only $271 million annually to fund them. A minimum increase in appropriations to $3.5 billion nationally is needed.

The 1981 amendments remove from Federal funding eligibility the project categories of major rehabilitation, combined sewer overflow abatement and collector sewers unless the Governor of a State elects to set aside a portion of a State's allotment for these categories. Given the large need, a decrease or lack of funding available for major rehabilitation and combined sewer overflow abatement strikes directly at deteriorating municipal infrastructure. Building new treatment plants for our cities, when the conveyance facilities have collapsed or are in danger of collapsing will not have a water quality benefit. The total system must be reliable and using setasides short changes this effort. Major rehabilitation and combined sewer overflow abatement should be restored as eligible categories so that we can get on with the job of improving municipal infrastructures.

The present distribution system for Federal funds should be continued using the needs based allotment formula already in place. Further it should continue to reflect all categories of needs, since funds will continue to go to the newly ineligible categories under setasides or, if as proposed above, to these categories if eligibility is restored.

Funding should continue for States to administer the program under delegation agreements from the Federal Government. Further, consideration must be given to increasing the amounts available for this purpose to account for inflation. The same amounts annually only serve over time to result in less and less staff availability to accomplish the same or increased workloads. Again program stability must be maintained.

3. COMPLIANCE DATES

EPA's failure to meet statutory deadlines for establishing effluent and compliance standards and guidelines has created significant problems for those States, like New York, with aggressive management programs. Our commitment to issue second round permits using "best professional judment" places us in a potentially uncomfortable economic disadvantage to other States that may be waiting for EPA to set national limitations. More importantly, public health and the environment continue to be adversely affected, as water quality standards will not be attained or maintained in some improtant water bodies.

In that we recognize that there may be practical reasons for extending statutory compliance dates, we urge Congress to provide EPA with both resources and a clear mandate to ensure that standards and guidance will be promulgated in time to make compliance dates realistic.

We recommend that Congress extend deadlines for bat and municipal compliance to July 1, 1988 if EPA can promulgate national effluent standards by July 1, 1984.

4. NPDES PERMIT DURATION

Ten-year permits would give regulating agencies the ability to concentrate their resources on permit compliance rather than permit administration. Obvious advantages to the permittee are a reduction in paperwork and a more stable basis on which to make business decisions.

In New York, ninety percent of the point source pollution load comes from ten percent of the sources. Ten-year permits will allow us to concentrate our resources on the more significant discharges. We've always had, and should continue to have, the authority to revise permits prior to their expiration to update permit requirements or schedules. It is recommended that the duration of NPDES permits be extended from five to no more than ten years.

5. WATER QUALITY STANDARDS

We are surprised and dismayed at the array of proposals to revise the water quality standards process. Some legislative and regulatory proposals are tampering with the very basic State right to classify through best usage determinations and establish standards within a public hearing process while being overviewed by the EPA.

We cannot support variations of this process either by those who believe mechanisms should be provided to make case-by-case point source exceptions (lenient approach) to those who believe no changes should be allowed (freeze approach) to those who believe toxic numerical requirements should be mandated within given time frames (stringent approach). Rather we urge that no hasty judments be made which may alter an already equitable and viable water quality standard setting process, we therefore recommend no changes to the legislation at this time.

CLOSING REMARKS

In closing, I would like to stress that a true Federal, State, local partnership can only be realized if there is a strong legislative mandate for clean water, implemented by clear concise regulations and an adequate resource base. We trust that Congress will give both of these on its deliberations on appropriations and amendments to the Clean Water Act.

Thank you for the opportunity to appear before your subcommittee today.

Mr. ROE. Please proceed.

TESTIMONY OF LANGDON MARSH, EXECUTIVE DEPUTY COMMISSIONER, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Mr. MARSH. Good morning. Thank you, Chairman and good morning to you and the members of the subcommittee.

I am Langdon Marsh, executive deputy commissioner of the New York State Department of Environmental Conservation. As the chairman has mentioned, I am here on behalf of Commissioner Henry G. Williams of the Department of Environmental Conservation. I do appreciate the opportunity to share with you some of our concerns about clean water legislation that is now before you.

We believe that the clean water legislation that was represented by the Federal Water Pollution Control Act of 1972, as it has been amended, is basically sound. The approach is correct, as Chairman Howard has mentioned, and we believe that the basic structure of the act should be continued. We think a lot has been done not only in New York and other northeastern States but around the country to accomplish the goals of that act. But we know that there is a great deal more that must be done, and particularly in the area of toxic and hazardous substance problems that we have before us.

The statement indicates the five areas in which we propose either that amendments be made or not be made as the case may be and I will briefly discuss each one of them.

On funding authorization, under section 106 and section 104 training, we strongly recommend the retention of the authorized level of $75 million for the 106 program and $22.7 million for the 104 training grants. These State grants under 106 are the primary source of Federal funding for the administration of our water pollution control program and we have a very significant and important monitoring and surveillance program in the State of New York. We could not stand any reduction in that program; 106 funds are an important part of the support of that program.

We are also looking at a number of problem areas that require enhancement of our efforts from the levels of past years and we think that it would be essential that Congress either maintain or increase its support for our programs so that we can begin to address these problems.

Right now, for example, we are trying to get a groundwater pollution program off the ground, so to speak, in Long Island and

other parts of our State. We need resources to do that. This is an absolutely essential part of our water resources, water pollution control responsibilities; we have not done enough. We recognize that.

There are toxic problems throughout the State. We need to do something.

The question of nonpoint sources was mentioned by the chairman in his opening remarks. We are beginning to struggle with that in places like Lake George near the Adirondacks to come up with adequate water management plans that will deal with the problems of nonpoint sources. We cannot do that kind of planning without the support of the program grants through the Federal Water Pollution Control Act.

We also would like to see the 106 funds continued even if there are 205 (g) and (j) allocations to the State.

On construction grants, we have a great many projects in the pipeline but only a small or dwindling amount of Federal resources available to address the problems. All of these projects require long leadtimes and we need to have consistently available funds so that we can properly plan, budget and manage the program.

Our needs have been estimated in excess of $16 billion on a statewide basis. The total projects in the program today total about $4.5 billion, but we only have annual appropriations of approximately $271 million to fund them. So we are suggesting an increase in appropriations to $3.5 billion nationally to meet this need.

We are also concerned about changes in eligibility requirements that the 1981 amendments put into effect, particularly in the areas of major rehabilitation, combined sewer overflow abatement, and collector sewers.

As you know, these are not eligible unless the Governor of the State elects to set aside a portion of the State's allotment for these categories. Given the large need we have, a decrease or lack of funding available for major rehabilitation and combined sewer overflow abatement strikes directly at deteriorating municipal infrastructures.

Building new treatment plants for our cities, when the conveyance facilities have collapsed or are in danger of collapsing will not have a net water quality benefit. The total system must be reliable and using set-asides shortchanges this effort.

So we are suggesting that major rehabilitation and combined sewer overflow abatement should be restored as eligible categories so that we can get on with the job of improving and restoring municipal infrastructures.

The present distribution system for Federal funds should be continued using the needs based allotment that has already been in place.

As I mentioned, it should continue to reflect all categories of needs so that we can get on with the job. We are also of course interested in continuing the amounts available under 205(g) to administer the program as the needs become more complex, as they increase, as we have to deal with exotic problems which we did not have to deal with before. We need at least the amount of staff availability we historically had to accomplish the same or increased workloads.

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On compliance dates, we recognize that EPA has had considerable problems over the past years in coming up with national effluent standards and that has created problems for both municipalities and industry.

We are suggesting the extension of deadlines for best available technology and municipal compliance to July 1, 1988, assuming that EPA can promulgate national effluent standards by July 1, 1984. And we urge Congress to provide EPA with the resources and a clear mandate to insure that standards and guidance will be promulgated on time to make these compliance dates realistic.

Duration of permits. We manage a lot of permits in New York State, 1,500 priority discharges. We do a lot of paperwork. Not all of it is to great benefit. We are suggesting that a 10-year permit would give us as a regulatory agency the ability to concentrate our resources on permit compliance rather than permit administration. We should of course continue to have the authority to revise permits prior to their expiration, to update requirements or schedules.

Water quality standards. We are concerned with the number of proposals to revise the water quality standards process. There are some legislative and regulatory proposals which would tamper with our basic State right to classify waters through best usage determinations and establish standards under the oversight of EPA. So we do not support variations of the existing process, such as to make case by case point source exceptions, to make no changes or freeze changes altogether or to mandate toxic numerical requirements within given timeframes.

We urge that no hasty judgments be made which alter an already equitable and viable water quality standard setting process. And therefore no changes should be made in the legislation at this time.

In closing, I would like to stress that a true Federal, State, local partnership can only be realized if there is a strong legislative mandate for clean water, implemented by clear, concise regulations and an adequate resource base.

We trust that Congress will provide all of these in its deliberations, appropriations, and amendments to the Clean Water Act.

And again, Mr. Chairman, thank you very much for the opportunity to make this presentation to you. I will be happy to answer any questions.

Mr. ROE. I want to thank the gentleman from New York for his substantive presentation to the committee.

Are there any questions to the gentleman from New York?

The gentleman from Minnesota.

Mr. STANGELAND. Just a couple, Mr. Chairman.

Mr. Marsh, how adequate are the act's water quality monitoring authorities?

Mr. MARSH. In what sense, sir?

Mr. STANGELAND. Are we doing sufficient monitoring?

Mr. MARSH. Well, we do not believe so. For example, in New York we have the ability to maintain about 110 ambient monitoring sampling stations taking monthly samples. On the other hand, we have approximately 70,000 miles of waterways throughout the State. We would like to be able to do a great deal more ambient

monitoring. We would also like to increase by doubling or tripling our surveillance monitoring of key discharges.

As I mentioned, we have about 1,500 principal industrial discharges throughout the State and we are only able to really do surveillance sampling of about 200 of these per year. We think we ought to be doing a great deal more than that.

Mr. STANGELAND. Is your restriction monetary?

Mr. MARSH. It is purely monetary, yes. We have the equipment, we have the capability within our State health department to do very sophisticated analyses for toxics. But we do not have the ability to take the samples or to get enough people to analyze them at our State Health Department.

Mr. STANGELAND. What more should we be doing in the area of nonpoint source pollution control?

Mr. MARSH. Well, I believe that the areas that have been identified as nonpoint source problems are areas that are principally of concern to State regulatory authorities. I think that the proper role of the Federal Government is to provide continued resources to States, to do the analyses, planning, cooperative working with farmers and others to come up with adequate plans and programs to deal with the problem.

I gave as an example in my testimony the cooperative arrangement which we are working out with the communities around Lake George, which is a highly important water body in our State, trying to address this problem, to maintain the very pure water quality in that area. We think that a cooperative approach involving Federal planning and support funds and State cooperative arrangements with local governments and some regulatory authority, perhaps in some areas to deal with erosion control and other matters, would be proper.

Mr. STANGELAND Do you think then that we need a major nonpoint source program at this time? Do we need it and is the need $16 billion, did I understand you to say?

Mr. MARSH. That is the total needs per the EPA's needs study, yes.

Mr. STANGELAND. But is that point or nonpoint?

Mr. MARSH. That is just point sources.

Mr. STANGELAND. So we have a long way to go in correcting the point source problem. Should the priority be moving nonpoint pollution control into the program at this time or should we continue to address the point sources?

Mr. MARSH. Well, I believe that we have to do both. We believe within the State that we have severe water quality problems that come from both sources. In our principal waterways the problem has traditionally been a point source problem. However, we have areas such as the sensitive lakes in the northern part of our State and the bays in Long Island where the problem is probably as much or more a nonpoint source problem as it is a point source problem.

We believe that we need the adequate informational and analytical ability to assess the actual problems, nonpoint source problems in these areas and to devise nonstructural and regulatory and other solutions as well as perhaps some structural solutions.

I do not think at this point that we would suggest a major construction-type program but I do think that it is important that the States have the resources to gather the information, analyze the problem in more detail than the 208 program has enabled us to do and then come up with legislative and other solutions, principally I suspect of a nonstructural nature in order to address the problems in key water basins throughout the State.

Mr. STANGELAND. Thank you, Mr. Marsh.

Mr. ROE. The gentleman from New York, Mr. Nowak.

Mr. NOWAK. Thank you very much and let me welcome Mr. Marsh before the committtee. He is a new member of the DEC team and certainly a welcome one as far as many people that have watched this program develop over the years in New York State. And I know that not only are his contributions going to be many to the State but I think because of his background and the expertise that he has garnered in water resource matters over many, many years, he will stand him in good stead to develop a meaningful program for the State. Also, I think he can be a great contributor to this committee in trying to fashion the Federal legislation which will allow the State to move forward.

Mr. Marsh, you indicated in your testimony that combined sewer overflow abatement should be restored as a grant eligible category. The Clean Water Act, as you discussed, does provide a special source of funding for the correction of that problem.

I am wondering why, in view of that so-called special source, in your opinion, should that category be restored to full eligibility?

Mr. MARSH. Well, I appreciate your kind remarks and I will certainly do my utmost to live up to them.

On the question—we think that all municipal sources should be—all municipal problem areas should be treated alike because the contribution of these various categories to our water quality problems and our public health problems is not clearly just from one source or the other. For example, I have some figures here that indicate, of that $16 billion in needs, a good 5.6 billion or about a third is from combined sewer overflow correction, and only 3.4 billion of that number is for new treatment plants. So we believe that the overall needs of the State should be treated alike, that we should be able to prioritize them in the fashion that our true needs reflect.

The special funding provided by the Clean Water Act only addresses discharges to marine areas and has not been funded at an adequate level. So whatever our most severe problems are, we think that the legislation should enable us to address them, whatever category they fall into.

Mr. NOWAK. What you are saying basically is that if the percentage problem of pollution comes from combined sewer overflows, that may in various communities have to be attacked first. There seems to be little sense in going into a construction grant if the major portion of the pollution is emanating from another source, and I think that is the thrust of your testimony.

Mr. MARSH. That is correct.

Mr. NOWAK. And that if we could provide that flexibility within the Federal mandates, you would be able to attack the harshest

polluters or polluting sources prior to spending large sums of money and perhaps only get at 40 or 50 percent of the problem.

Mr. MARSH. That is correct.

Mr. NOWAK. I do not want to take too much time. I have other questions which I will submit later.

We talk about the need for total infrastructure rehabilitation. I wonder if you could relate this problem to the infrastructure needs of the State? How does your testimony relate to that?

Mr. MARSH. Well, as I pointed out, we have a major, as I characterized it, $16 billion problem, just in the area of correcting our water pollution problems. And the grants program that has been ongoing is, of course, basically an infrastructure development program. We think that continuation of that would do a great deal to help New York State rebuild its infrastructure and an adequate level of construction grants would go a long way to help us do that.

Again the removal of major sewer rehabilitation from the category of eligible grants by the 1981 amendments somewhat hampers our ability to address the infrastructure needs of the State. Of the figures that I began quoting to you before, approximately 3.8 billion of the 16 billion we need is in major sewer system rehabilitation. So again it would be important to try to include that as an eligible category and to increase the grants to enable us to begin addressing that need. It is also a very important aspect in terms of policy here.

I think that a Federal policy discouraging major sewer system rehabilitation is in effect saying to the older central cities that their needs are not as important as areas that are developing, and I think it is important that the Federal policy be neutral on that score.

Mr. NOWAK. At least give the flexibility to the States to take care of your own particular needs.

I want to thank you for your statement. I think it is a very relevant statement. It is something that this committee, I am sure, will give great thought to as we work to improve this whole program.

Thank you very much.

Mr. ROE. The gentleman from New York, Mr. Molinari.

Mr. MOLINARI. Thank you, Mr. Chairman.

I have a couple of questions. Before I ask the questions, I would like to extend my welcome also and make the observation that we are very happy with the work that is being performed, as a New Yorker, by the new Commissioner. The prior one, in my opinion, was an absolute disaster as far as New York State was concerned. But it is refreshing to see the approach that is being taken now, and I particularly want to compliment you folks on the job you did on your odor identification problem that vexes my congressional district. It was a marvelous work product and I was very much impressed, and I look for good things to happen.

You say that legislative and regulatory proposals are tampering with the basic State rights to classify water bodies through best usage determinations and to establish appropriate standards.

Can you elaborate upon this concern? Where do you see the problems or conflicts?

Mr. MARSH. Well, I think that the chief conflict that we have at the moment is with EPA's draft policy for the review of advanced

municipal wastewater treatment facilities. At this point, the agency seems to be willing, and it has happened in a couple of cases in New York, to question the appropriateness of a designated use of a water body that has been established by the adoption of water quality standards, including a best usage classification adopted by the State under an EPA approved program and the standards and use designations have actually been approved by EPA as part of the Water Pollution Control Act. And then the policy in effect turns around and says that in the context of a particular grant for a project, EPA can question whether or not what is the usage is actually going to be achieved by the proposal to construct the sewage treatment facility. In one case, for example, what EPA will support in terms of a grant for a particular facility would fail to meet the State water quality standards, and we have a big argument with them about that. We are put in a position, having adopted the water quality standards, of then having to go back and rejustify them with great technical and sophisticated analysis. We do not think we should be put in that position, and that EPA should support what is necessary to meet water quality standards, as was the original intent of the act.

We are also concerned about some of the legislative proposals that we have heard about that would tend to weaken the water quality standards setting process, as I mentioned in my testimony.

Mr. MOLINARI. One more question.

How can New York claim that it has an aggressive permit program, yet still need EPA support in promulgating the best available technology standards?

Mr. MARSH. Well, we have a very professional staff working in our water quality program. They do a good job but what they are called upon to do in the current regulatory climate is to exercise their best professional judgment in a whole series of toxic problems and other problems where they simply do not have adequate guidance from EPA. This is difficult in two respects.

One, it consumes a considerable amount of staff effort to come up with these best professional judgments, and I believe they do a very good job at it, but, second, it tends to put New York, which does this job or wants to do this job, somewhat at a disadvantage with other States who might not have the ability to put those resources to work to come up with those standards and are simply awaiting Federal guidance and effluent standards later on. We think that everybody should be on the same track and we think that EPA is the organization that was designated as a matter of policy by the 1972 act to do that work. We hope that you give them the support to continue that and finish it promptly.

Mr. MOLINARI. That leads me then to one more question.

What do you perceive as the proper role of the Federal Government in this area as opposed to that which would be assumed by the States?

Mr. MARSH. Well, the basic balance that has been achieved up to now is I think a good one. We have the ability at the State level to determine our priority needs; we have the ability to set our own water quality standards, best usages of waters and so forth. We have the ability to run our own permit program through the delegation of the NPDES process. And basically the system works.

We think, as I mentioned, some of these new policies tend to interfere with what I think was a well-functioning structure in the first place. I think the Federal Government's role has properly been to collect funds and distribute them fairly to States according to their needs, to provide oversight of the water quality standard setting process and permitting process, to make sure that the goals of the act are going to be achieved.

Mr. MOLINARI. Do you have the ability to detect the presence of industrial users of toxic waste being dumped into your waterways?

Mr MARSH. We have the ability to do it but not nearly to the extent that we would like.

As I mentioned, we would like to double or triple our surveillance capabilities.

Mr. MOLINARI. But if you had double or triple the resources, then you would not believe that you would need an enhanced role on the part of EPA in that area?

Mr. MARSH. That is correct. We think that the States are best equipped to carry out the day-to-day monitoring, surveillance, and permitting aspects of the program and to deal with the construction grant priorities as well.

Mr. MOLINARI. Thank you very much.

No further questions, Mr. Chairman.

Mr. ROE. The Congresswoman from New York, Ms. Ferraro.

Ms. FERRARO. Thank you very much, Mr. Chairman.

I too want to welcome the Commissioner and I appreciate his testimony. My colleague from Massachusetts stated that it is New York Day, and, of course, I am most delighted that it is.

I just want to followup a little bit on the questions of my two colleagues with reference to the needs of the State and the participation of the Federal Government in those needs, and I am talking about the dollars.

You indicated to Congressman Nowak that the size of the problem in New York State is about $16 billion, is that right?

Mr. MARSH. That is right.

Ms. FERRARO. What percentage of that is available through Federal assistance and what percentage does the State assume responsibility for in dollars?

Mr. MARSH. Well, we have under the present program about a $350 million a year program in construction grants of which 75 percent is Federal dollars. And under present law, 12½ percent is put up by the State and 12½ by localities. As I mentioned, the $271 million a year is against a total need for just those projects that are in our process, either grants have been given to or have been applied for, of about $4.5 billion. So out of the total $16 billion need, to get even those that are in process completed, is going to take a number of years at the present Federal grant levels.

Ms. FERRARO. So that the $16 billion is really a long-term goal.

Mr. MARSH. That is the long-term goal. That is the total needs under USEPA's needs survey.

Ms. FERRARO. I just wanted to ask you to give us a statement on PCB's. We are going to have testimony from the city with reference to it. It has been several years since the Congress turned its attention to the problem of PCB's in the Hudson River. We directed the

EPA to get on with the job of removing the worst hot spots, and I have discussed that.

Today we have seen very little progress.

In view of this, what is New York State's strategy for dealing with the PCB problem?

Mr. MARSH. Well, our twofold funding strategy is to obtain the funds that were authorized by Congress, specifically for the PCB dredging pilot project in the Hudson River of which about $18.3 million are now being withheld by EPA. We have a lawsuit against EPA to try to release those funds, as you know. But if we do not receive some results in that suit by the end of next week, we are going to have to ask EPA to reprogram the money to other needs or we would lose it.

EPA has put the PCB project on the Superfund list, which indicates that some of it may be available for the future. Our plans are in accordance with the studies that have been done to date, to dredge as many of the hot spots of PCB contamination in the river north of Troy as we can afford to do, and to encapsulate as much of that material as we can and perhaps to incinerate the most concentrated parts of it, if we can find a suitable place to do that.

So if we had our druthers, we would be using Clean Water Act funds to do the dredging aspects and the Superfund moneys that might become available to deal with the encapsulation or the destruction of the material that is dredged. Ultimately, we are going to seek supplemental funding to deal with the remainder of the problem, the remainder of the hot spots and some of the remnant deposits and dredge spoil areas, and assess the whole project for its viability as a precedent to do other in-place toxic work. We also have, of course, underway remediation of other PCB dump sites in the area of the Hudson River to prevent that kind of contamination from being released into the river in the future.

We have a problem of providing a site. Our siting board did—this is for the encapsulation of the materials—our siting board did approve a site that is now being held up in State Court. We hope to have that resolved quickly.

Ms. FERRARO. What is the likelihood that you will get a decision from the court by next week in order to fall within the deadline, EPA deadline?

Mr. MARSH. Well, we have two courts involved. One, the decision that we need by next week is from the Federal court to extend the deadline for the obligation of the Clean Water Act funds beyond September 30. That is all we need from the court by next week.

Ms. FERRARO. Is there a likelihood that you would get that decision by next week?

Mr. MARSH. Well, there is a good likelihood we will get the decision. I would not be able to predict how likely success will be.

Ms. FERRARO. Thank you very much. Thank you, Mr. Chairman.

Mr. MOLINARI. Will the gentlelady yield, or the Chairman yield for a question?

Mr. ROE. Yes, of course.

Mr. MOLINARI. On that score, there have been some statements made that if we do not proceed to clean up the PCB hotspots in the Hudson, that the net effect could eventually mean the closing of New York Harbor. Yet it is my understanding that the Administra-

tor of EPA, Mr. Ruckelshaus has made a determination that there is no correlation between the PCB's in the New York Harbor and that which appears in the upper Hudson.

Could you please give us the views of the department on that problem?

Mr. MARSH. Well, we do not believe that there is any question that ultimately the PCB's in the upper Hudson will migrate over the dam, the Federal dam at Troy into the lower Hudson and eventually find their way to New York Harbor. New York Harbor obviously is highly impacted by other sources of pollution, so it is hard to say at the moment how much of the contamination found there is a result of dumping in the upper Hudson.

But the studies, I think, clearly show that there will be a long-term trend which could be exacerbated by heavy water conditions at any time to scour the materials out of the upper Hudson and eventually transport them to the lower Hudson.

Mr. MOLINARI. Will that not disturb though the bottom sediment to the extent that some PCB's would find their way downstream that were resting upon the bottom?

Mr. MARSH. Oh, yes. And that is the danger. One could get very heavy water that has a scouring effect that takes silts right over the top of the dam.

Mr. MOLINARI. You are talking about during a storm?

Mr. MARSH. Yes.

Mr. MOLINARI. I am talking about during the removal process.

Mr. MARSH. I am sorry.

Mr. MOLINARI. During the removal process you are going to be scouring it from the bottom.

Mr. MARSH. That is right.

Mr. MOLINARI. And then disturbing it. I have heard it said, now I am not making the statement myself, but I am just raising the question. Would this not pose a problem in that you are disturbing the PCB's that are laying on the bottom in the removal process and in some quantity it would be wending its way downstream?

Mr. MARSH. Well, no question when you disturb the sediments that there will be some suspension of them in the water column. The way the project is designed, it is supposed to protect the migration of sediments during the actual dredging by a number of means so as to minimize that. And I think that while there is always some tradeoff and some potential problem there, the judgment has been that the amount that you are going to remove from possible future migration is so much greater than the small amounts that would be released during the actual dredging operations, that it is a clear net benefit.

Mr. MOLINARI. Thank you very much. I appreciate it.

Mr. ROE. Let me interject a thought at this point. You are speaking to a need and I think this gets into a little more depth of what the members of the delegation from New York have been asking. You speak of a need of New York State of $16 billion which is a point source pollution. Then you spoke to the issue of nonpoint source.

But do you have any ideas as to what your figure on nonpoint source would be?

Mr. MARSH. Well, no, because we do not have a handle on what it will take to clean up all of the potential nonpoint sources that we have. You have such a variety of potential problem areas. If we just take the inactive hazardous waste landfill sites, for example, we have identified some 700 or so throughout the State, of which a handful are in the Federal Super Fund and 100 or so, I guess at the moment 60 or so are being intensively studied for addition to the Federal list.

Mr. ROE. So—because the time is so desperately short, is your statement then saying the following that the State of New York has not identified the order of magnitude at this moment of what the nonpoint source situation is. Is that a fair commentary?

Mr. MARSH. That is a fair commentary, yes.

Mr. ROE. All right.

Then question No. 2 is: You came back and you said in your original testimony that the relationship of continuing monitoring and in effect expanding the monitoring would help to add to that knowledge. Is that a fair commentary to make?

Mr. MARSH. Yes, it would, although most of the monitoring that I spoke about was of point sources. I also said that I felt we should add to our capability to analyze the problem from the point of view of nonpoint sources as well.

Mr. ROE. Yes.

Well, what I am trying to get at is that we have listened to a lot of testimony and I have been on this for the last 15 years myself, so we listened to testimony and after a while the testimony becomes the given fact rather than the point of what the facts are or the known facts are. All I am trying to ascertain from you is that as of this date now, and I mean no criticism, is that you have not been able to as far as your State level, to identify the order of magnitude of the nonpoint source contamination. Is that a fair commentary?

Mr. MARSH. That is correct. Certainly not on a total basis.

Mr. ROE. So therefore, would you not know whether that is greater. We speak of $16 billion being needed for point source now and we have no idea what the other may be and we know that in many areas is an enormous level of concentration, feedlots and that sort of thing as far as pollution of those rivers and streams is concerned in the first place. So we really have not identified, or for whatever the reason might be at this juncture, what the nonpoint source, time order of magnitude is. Is that a fair commentary to make?

Mr. MARSH. I think so.

Mr. ROE. And should not the committee be directing some intensity of their legislative efforts in that direction?

Mr. MARSH. I should think so.

Mr. ROE. And I am leading to a point.

The second point that I think I want to bring up for the benefit of the committee members is the following. You spoke to the issue of increasing the aggregate funding from the $2.4 billion, I think, what was it, $3.5 billion.

Mr. MARSH. $3.5 billion.

Mr. ROE. And you spoke of $227 million roughly being available to New York State and its political subdivisions in the Federal matching end of it.

Now, the one thing that puzzles me is that we know in view of both the previous administration's and this administration's policy toward segmented projects, that many of those plants are not operating at the capacity they should be operating or really doing what they should be doing because that is all over the country, plants sitting waiting for funding to complete.

I was doing a little calculating when you were testifying on the question. If we are talking about $16 billion being a backlog and then we speak of parts and pieces of plants being completed, no effrontry to New York because it is the same thing in my State, we come to the point of saying, how long is it going to take us? Things are not standing still. We are not dealing with the magic survey needs that have been put out by EPA. EPA has come back to our respective States and has said hey, look, you work with us and tell us what you need, what you see your situation to be over a period of time to get it cleaned up. That is what the needs survey produced.

But the needs survey, to my knowledge, did not have a breakdown in saying that if we are going to get the greatest accomplishment for the immediate funds, these are the projects we would recommend New York State to do. Let us concentrate our funding here. We can clean up 500 million gallons a day in pollution. We are not doing that because the needs survey does not speak to that issue.

What I think would be helpful to the committee, getting to my point, would be if you could come back and take the funding at a level of income coming into New York State now under the $2.4 billion and project that against the needs survey.

So that Congress can make that decision if it wants the $2.4 billion and takes 80 years to do it, maybe we would never get anything done. We could be wasting more money than increasing that allocation and shortening that period of time.

And I think that is what the gentlelady specifically is speaking to from New York. Or are we just saying to the American people, are we lulled into needs surveys, more monitoring. Are we bleeding to death? That is the issue.

So could you be enormously helpful? And I would like you to do that for us, say that as a request of you today, that you would submit supplemental testimony. If we were to take the given situation as it is now and project our needs out over that $16 billion, that would give us some idea as to the kind of problem you are faced with. And I think we need that to fortify the testimony presented.

Let me conclude on one other point before I call on the gentleman from California.

The PCB issue is another phenomena that is just floating around and we have had all kinds of meetings with Senators, Members of the House, with the EPA and the whole bit. And they just cannot seem to get a handle on the thing. You know, conflict between the Superfund, conflict between EPA and decisionmaking process, particularly if we are coming back and letting people negate water quality standards as you were speaking to earlier, as far as my State and your State dumping added pollutants into that river and that bay.

So someplace along the line I do not see any testimony so far and I know we are going to hear from New York City, I do not see any real hope of anything moving on PCB's. I really do not see it. And here it is a major, major problem and there does not seem to be any exigency about it. It is not a crash program.

Should it be isolated into its own—should the Congress come back and add an amendment to this legislation or appropriate legislation to say that the PCB problem in the Hudson River, Hudson Bay is of major national importance and we ought to be working with that as a major important national problem rather than the frittering and diddling that we are doing now, if you will pardon my euphemism. What is your thought on that?

Mr. MARSH. On that last point, we feel very strongly that Congress should make that determination. We thought it was a very clear one.

Mr. ROE. But they did not provide the money to do it.

Mr. MARSH. Well, they provided the $20 million under 116.

Mr. ROE. Do you think that is going to clean it up for $20 million? What is your estimate for cleaning it?

Mr. MARSH. It was an adequate start. We think it is probably going to take several times that.

Mr. ROE. Does anybody know? Is there any study that has been made that could say to Congress we need $150 million to clean that up?

Mr. MARSH. I believe we could provide that figure. I do not have it at this time and I would be happy to provide the other time level——

Mr. ROE. That would be of enormous help to us because we are going to have to justify that.

Mr. MARSH. Yes; I think that is a good idea. Thank you.

[The following was received from Mr. Marsh for the record:]

APPENDIX 1—CONSTRUCTION GRANTS NEEDS

1. TEXT

In response to the question of how long it will take New York to meet its construction grants needs based upon its share of the current level of spending, assuming there will be no inflation and that 20 percent of each allocation will be available for "ineligible" categories, we project that the "eligible" needs category of approximately $4.5 billion will be met by the year 2000. This does not include a projection for currently ineligible needs which total an additional $11.7 billion. At the same rate of funding those needs would not be met until approximately 2060, again assuming no additional inflation. The rationale for this projection is attached.

2. ADDITIONAL RATIONALE FOR CONSTRUCTION GRANTS NEEDS PROTECTION

The $16.1 billion reflected on the 1982 Needs Survey should be broken down into two categories: the $4,966.0 million that would be eligible for Federal grants after 1984 and the $11,154.0 million that would not be eligible unless the Governor sets aside 20 percent of the State's allocation for such projects. In order to determine the balance of these two categories on October 1, 1984, the following analysis was performed:

[In millions of dollars]

	1984 eligible	1984 ineligible
1982 needs survey	4,966.0	11,154.0
Less reduction due to 1982 grants	−207.4	−102.1
Subtotal	4,758.6	11,051.9
Plus 1982 inflation (3.5 percent)	+166.5	+386.8
Estimated Oct. 1, 1982	4,925.1	11,438.7
Less reduction due to 1983 grants	−541.7	−135.6
Subtotal	4,383.4	11,303.1
Plus 1983 inflation (3.5 percent)	+153.4	+395.6
Estimated Oct. 1, 1983	4,536.8	11,698.7
Less reduction due to estimated 1982 grants	−257.6	−85.5
Subtotal	4,279.2	11,613.2
Plus estimated 1984 inflation (3.5 percent)	+149.8	+406.5
Estimated Oct. 1, 1984	4,429.0	12,019.7

As of October 1, 1984, two scenarios are possible: either a 20 percent Governor's set aside or else all Federal funds used for the ordinary eligible projects. These two possibilities have been treated separately on the following two pages. Assumptions are that NYS will continue to receive an annual allocation of $271 million of which 15 percent will be used for reserves leaving $230.4 million to reduce needs. For Federal fiscal year's 1985, 1986 and 1987, 80 percent of projects in the eligible category would be "grandfathered" at the 75 percent Federal grant and 20 percent would receive 55 percent. In the following years, only 60 percent of the projects would be grandfathered at 75 percent. All projects funded from a set aside would be at the 55 percent level. No inflation has been factored in after October 1, 1984.

GOVERNOR SET-ASIDE 20 PERCENT FOR OTHERWISE INELIGIBLE PROJECTS

[In millions of dollars]

	1984 eligible needs		1984 ineligible needs	
	Grant reduction	Cumulative ending balance	Grant reduction	Cumulative ending balance
Oct. 1, 1984		4,429.0		12,019.7
Fiscal year:				
1985	259.6	4,169.4	84	11,935.7
1986	259.6	3,909.8	84	11,851.7
1987	259.6	3,650.2	84	11,767.7
1988	275.1	3,375.1	84	11,683.7
1989	275.1	3,100.0	84	11,599.7
1990	275.1	2,824.9	84	11,515.7
1991	275.1	2,549.8	84	11,431.7
1992	275.1	2,274.7	84	11,347.7
1993	275.1	1,999.6	84	11,263.7
1994	275.1	1,724.5	84	11,179.7
1995	275.1	1,449.4	84	11,095.7
1996	275.1	1,174.3	84	11,011.7
1997	275.1	899.2	84	10,927.7
1998	275.1	624.1	84	10,843.7
1999	275.1	349.0	84	10,759.7
2000	275.1	73.9	84	10,675.7
2001	73.9	0	84	10,591.7
	NO 20 PERCENT SET-ASIDE			
Oct. 1, 1984		4,429.0		12,019.7
Fiscal year:				
1985	324.4	4,104.6		12,019.7
1986	324.4	3,780.2		12,019.7

GOVERNOR SET-ASIDE 20 PERCENT FOR OTHERWISE INELIGIBLE PROJECTS—Continued

[In millions of dollars]

	1984 eligible needs		1984 ineligible needs	
	Grant reduction	Cumulative ending balance	Grant reduction	Cumulative ending balance
1987	324.4	3,455.8		12,019.7
1988	343.7	3,112.1		12,019.7
1989	343.7	2,768.4		12,019.7
1990	343.7	2,424.7		12,019.7
1991	343.7	2,081.0		12,019.7
1992	343.7	1,737.3		12,019.7
1993	343.7	1,393.6		12,019.7
1994	343.7	1,049.9		12,019.7
1995	343.7	706.2		12,019.7
1996	343.7	362.5		12,019.7
1997	343.7	18.8		12,019.7
1998	18.8	0		12,019.7

Appendix 2—Hudson River PCB Cleanup Costs

TEXT

In regard to the PCB Reclamation and Demonstration Project for the Hudson River, it is estimated that total cost for planned work will approximate $50 million in 1980 dollars. The work included is comprised of three components:

(1) The dredging of 40 in-river hot spots containing 170,000 pounds of p.c.b.

(2) The removal and encapsulation of the remnant deposit area from the former Fort Edward Dam; the approximate quantity of PCBs is 45,000 pounds.

(3) The remediation of New York State dredge spoil sites which contain approximately 70,000 pounds p.c.b.

Appendix 3—Estimated Costs of Implementing Nonpoint Source Controls

TEXT

The New York State 208 studies produced no reliable cost estimates of implementing nonpoint source controls for agricultural or silvacultural runoff, storm sewers, etc.; nor to our knowledge does anyone else have reliable figures. It is expected, however, that costs would reach billions of dollars, and that at present, any program results would be hard to document.

Remediation is probably not feasible, although a closer look at preventive approaches might be helpful. Specifically, we would welcome monies for selected Best Management Practices in high problem areas, and for work closely related to our agricultural resources, such as Cooperative Extension, Soil Conservation Service/State Programs, etc.

The needs are so large that monies to address these issues should not detract from current point source and construction management programs, nor possibly from developing aggressive toxic discharge efforts.

Mr. Roe. The gentleman from California.

Mr. Packard. Thank you, Mr. Chairman.

Being down the line a little bit, some of the same questions that I have concern about have been asked, but I would like to enlarge upon them just briefly.

Did I understand it correctly that the matching formula is 75/25, 75 Federal funding and 25 local?

Mr. Marsh. As of now. That would drop back to 55 percent a year from now.

Mr. Packard. Has the State of New York been able to keep pace with their commitment toward that funding formula?

Mr. MARSH. Do you mean have we been able to spend the funds that have been allocated to us?

Mr. PACKARD. No; have you appropriated your local shares to match the Federal shares as they have become available?

Mr. MARSH. Yes; we have a State Bond Act and local governments have to be able to provide their share in order to get a grant.

Mr. PACKARD. In other words, the Federal funding is conditioned upon the matching funds being available?

Mr. MARSH. That is correct.

Mr. PACKARD. You stress in your report that the availability of Federal funding ought to be based upon needs. In my mind that creates a little bit of a dilemma because there are two ways to mitigate the problem.

One is to increase the funding that would be used for clean up purposes but the other is to do a more thorough and complete job of enforcement and monitoring.

You can just put more and more money into it but if you do not get to the source of the problem then you have an unending need and you never can mitigate the need. The chairman really, in his last few comments, stressed the concerns that I have.

Has the State of New York done any studies to determine those projects which would go the furtherest toward meeting the EPA standards? Have you categorized them in terms of their greatest need and then determined whether that is where the concentrated dollars are to go in preference to spreading it around to the multitude of projects?

Mr. MARSH. Well, each year we produce a priority list of projects that ought to get the first Federal dollars that are available and each year we go through a public process to establish that list. And I will not say—I will not guarantee you that it does exactly what you suggest, because part of the criterion for—of getting on the list—is readiness to go. And that means there are some projects which are not ready to go which may in terms of the water quality improvement need perhaps score higher but yes, we do have the priority list that we come up with every year and we are developing a basin-by-basin survey of what our major water quality problem areas are and the sources of those problems so that we will have a better handle in terms of exactly what sources need to be cleaned up first in order to make the most dramatic and immediate improvement in the water quality situation.

Mr. PACKARD. I think you understand the point, that is if there is $2.4 billion Federal dollars available throughout the country, New York would be eligible for certain percentage of these dollars, that those dollars ought to go to those projects that would be the most cost effective in terms of mitigating the problem.

The second point. Has the State of New York done any studies to identify those industries or those sources of pollution that create or contribute the greatest toward pollution and then what have you done in terms of enforcement and monitoring those sources of pollution? Have you developed a strategy to approach it from the other side of the coin, that I have already mentioned, that is the enforcement and mitigating requirements?

Mr. MARSH. Yes; we have categorized all of our industrial discharges into essentially major and minor sources and we have targeted the most important contributors to our pollution problem for the most intensive effort in setting effluent limits and in surveillance and monitoring activities. We will again be using that survey, basin-by-basin survey that I mentioned, to identify on a water quality basis, and to further refine that list to make sure that we are getting at the most significant discharges.

Mr. PACKARD. Does the State depend on Federal guidelines to enforce or do they have their own additional guidelines?

Mr. MARSH. Well, the problem that I alluded to in my testimony is at the moment we are now faced with having to establish our own limitations on key constituents, particularly the toxic ones in industrial discharges, that so-called best professional judgment. We do that based on a variety of inputs of health and environmental data.

What we would like to be doing more of is operating under more definite Federal guidelines and effluent limit data that would enable us to set the limits with a great deal more efficiency and again with equity throughout the country.

Mr. PACKARD. I think you get the gist of what I am pointing out and that is I would hope the States individually would take the initiative to seek for solutions without simply looking to the Federal Government for either funding or for regulatory procedures in terms of the enforcement aspect of the States. They have a problem and obviously that means we have a problem too. But the solution is not wholly here.

Mr. MARSH. I agree with that.

Mr. PACKARD. The solution is at your level.

Thank you very much.

Mr. ROE. The gentleman from Pennsylvania, Mr. Clinger. I am sorry I bypassed you.

Mr. CLINGER. Thank you very much, Mr. Chairman. Thank you Mr. Marsh for your very constructive testimony. I was particularly struck by the points you make with regard to the bias, if you will, in the existing legislation. That is bias in favor of new construction and in favor of creation of new facilities, which is, I guess, implicit in the fact that we remove certain activities from eligibility for funding under the Federal law. Clearly there is a regional implication here because the older parts of the country have much greater problems in terms of rehabilitation and sewer overflow and those kinds of problems, and perhaps less of a need for major new construction.

However, you should note that whereas these activities have been removed for Federal funding eligibility, there is the option within the Governors' hands to use a portion of the funds for those purposes. I guess my question is: Why do you feel the set-asides that are provided for in the law are not adequate to address the problem? Why would the set-asides not provide the States with the flexibility necessary to address those problems of rehabilitation? I think you said $3.8 billion of your $16 billion was in the area of rehabilitation and another $3 or $4 billion was in the area of sewer overflows. Why are not the set-asides adequate to address those?

Mr. MARSH. Well, I think the amount of the set-aside is too small to enable the full needs to be addressed and I think there is also a signal that is given by providing a lesser importance for those types of facilities that indicate that, you know, the construction of sewage treatment plants are of greater priority.

Mr. CLINGER. These are poor relatives, in effect, that is given the emphasis?

Mr. MARSH. That is right

I think it would be useful both to either increase or abolish the set-aside limits and to provide the clear signal that infrastructural kinds of remedies are of equal importance to others.

Mr. CLINGER. Well, thank you. I agree with you on that point.

But you have indicated also that under the existing law the State's share or the State and local share will increase fairly dramatically in 1985, I believe it is. What is the State of New York doing to prepare for that additional assumption of responsibility?

Mr. MARSH. Well, two things. One is that we are helping those communities along that are trying to get in under the gun so as to be eligible for the 75-percent funding. The other is we are pursuing legislative options in the State of New York to increase the State's share.

Mr. CLINGER. Let me interrupt. Your share now is taken care of through bonding authority?

Mr. MARSH. That is correct.

Mr. CLINGER. And you are proposing to increase that bonding authority?

Mr. MARSH. No. At the present time the bonding authority will be available through the end of this decade, essentially, even if the new projects drop back to the 55-percent level.

But what we are contemplating is reorienting the funds within the Bond Act so as not to increase the local share dramatically from what it is today, because we feel that the severest funding constraints are at the local level and to increase the local share from 12.5 percent to essentially 30 percent would be much too great a jump and we would not be able to get priority projects moving.

Obviously it would be nice to continue the 75-percent share but if that is not possible, we are going to take some action to help our localities out.

Mr. CLINGER. Just one final question. You have indicated that a cause of some frustration for the State of New York is EPA's failure to meet statutory deadlines for establishing effluent compliance standards and that this has caused you significant problems and perhaps long range, even more significant problems that you are attempting to do something in these areas. Whereas other States are perhaps just sitting back waiting for EPA effluent standards.

What kind of input does the State of New York have in the establishment of those standards? Are you involved with EPA in fashioning those standards?

Mr. MARSH. Well, the process for setting effluent guidelines by EPA is a reasonably open one and we have participated both in a technical level and commenting on proposed standards as they come out in the Federal Register.

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Mr. CLINGER. And you feel that your input has been used in the establishment of these standards?

Mr. MARSH. By and large, yes. I think we are—we do not feel that we are equipped to do the same sophisticated level of analysis that is capable of being done at the Federal level to come up with these guidelines. But yes, I think by and large we have been satisfied with the results in those areas where they have come out.

Mr. CLINGER. Thank you very much. Thank you, Mr. Chairman.

Mr. ROE. Are there any further questions for the gentleman from New York?

The gentleman from Minnesota, did you have another question?

Mr. STANGELAND. Well, just one quick one that I think might be worthwhile to have for the record.

You mentioned that you are in the process of getting a groundwater program off the ground. Could you expand on that a little further? What are your groundwater program plans?

Mr. MARSH. We have several identified ground-water problem areas: Long Island being far and away the most important one because it is the sole source aquifer for 2.5 million people. We have some Upstate aquifers that are also under stress. What we have done is to prepare or are in the process of preparing management strategies for both the Long Island aquifer and the upstate areas. And these will include both intensifying monitoring and enforcement efforts and also identification and analysis of potential sources of impacts on the groundwater and consideration of land use controls and other nonstructural measures to deal with the problems that come up.

The Long Island strategy is just about complete in draft form and we will be looking at that and trying to get support from local governments and to the extent possible, from State and Federal resources to do—to go further with it.

We are planning to identify all of the major aquifers in the State, do mapping, to identify potential sources of contamination, existing or potential, and come up with strategies to deal with them on a preventive basis, because we feel that we have tremendous resources there that are on the tipping level right now, it could go either way.

Mr. STANGELAND. I think we would be very interested in getting those strategies when they are developed, when the plans are finalized it might be enlightening and helpful to us.

Mr. MARSH. It certainly would.

[The following was received from Mr. March for the record.]

APPENDIX 4—LONG ISLAND GROUNDWATER STRATEGY

COMMENT

At the present time, the Long Island Groundwater Strategy is undergoing technical review and is not ready to be released. As I indicated in my testimony, we will send you a copy of these strategies when they become available. I expect to be able to deliver a review draft by the first of November.

Mr. ROE. No further questions, we want to thank you very much Commissioner Marsh for being with us this morning and would really appreciate that economic analysis. It does not have to be in

great depth. I am just curious to see what the timeframe is. So we thank you very much.

Mr. MARSH. Thank you. I appreciate the opportunity again. The committee does great work.

Mr. ROE. The next witness is representing the city of New York and I would ask them both to come up together, Mr. Allan M. Tumolillo, who is the assistant commissioner, department of ports and terminals, representing on behalf of Ms. Susan Frank who is a commissioner, together with Mr. Joseph T. McGough, Jr., who is a commissioner of the department of environmental protection in the great State of New York.

We want to welcome you this morning and obvicusly you can see there is a great interest in what New York is doing.

The full text of your prepared statement will appear in the record at this point.

[Statements referred to follow:]

TESTIMONY BY SUSAN FRANK, COMMISSIONER, N.Y.C. DEPARTMENT OF PORTS AND TERMINALS

Good morning, Mr. Chairman and members of the Committee. My name is Susan Frank, and I am Commissioner of the New York City Department of Ports and Terminals. I assumed that position very recently, on August 1st of this year, and this is my first opportunity to meet many of the members of this committee. The occasion is an important one, because the reauthorization of the Clean Water Act is a vital matter for New York City, and one which I urge you to support.

One of New York's greatest natural resources is its waterfront, which played an important role in making the city one of the great commercial centers of the world. The improvements in water quality in recent years that have been achieved because of programs funded by the Clean Water Act have been of enormous benefit to the thousands of New Yorkers and others who use our waterways for commercial or recreational purposes.

The dominant waterway in New York is, of course, the Hudson River, and the effort to improve its water quality depends upon the reauthorization of the Clean Water Act. In particular, I want to focus your attention on the proposed removal of PCBs from the Hudson.

The Hudson River has been severely by the discharge of PCBs, which are suspected of causing birth defects and other serious illnesses in humans, and are suspected carcinogens. PCB contamination of the Hudson was officially recognized as a problem by the federal government in 1975, when fish samples analyzed by the Environmental Protection Agency and the Fish and Wildlife Service revealed PCB concentrations far greater than permissible levels. Further research by the New York State Department of Environmental Conservation has documented the presence of approximately 630,000 pounds of PCB contaminating the bottom sediments of the Hudson River, with 5,000 pounds being carried down to the lower river estuary each year. Forty sites have been identified where PCB deposits in the riverbed sediments contain at least 50 parts per million of PCBs. These 40 so called "hot spots" contain close to 50 percent of the total PCB contamination in the upper Hudson.

This extensive contamination has had a devastating effect on New Yorkers' ability to use and enjoy the Hudson. With PCB levels in some fish exceeding 100 times the FDA's acceptable limits, the State of New York has had to prohibit all commercial and recreational fishing in the upper Hudson and most commercial fishing in the lower Hudson. The accumulation of PCBs in the Port of New York caused the United States Army Corps of Engineers to suspend for a time the issuance of dredging permits for maintenance of adequate harbor depth. The issuance of permits resumed after the Corps, EPA, and local authorities were able to devise a unique process called the "interim guidance martix" to evaluate applications. As contamination increases, it is not likely that the matrix can remain in effect indefinitely. While maintenance dredging has resumed, the continuing accumulation of PCBs creates the risk of closing part or all of the Port of New York.

Any disruption of the Port would have a severe economic impact on the entire region. Maritime commerce in the Port creates 150,000 jobs in the region with an annual payroll of $3 billion and more than $7 billion in sales revenues. These activi-

ties generate over $300 million a year in state and local taxes. The cargo that passed through the Port of New York in 1982 was valued at $42 billion, the highest of any port in the nation. The systoms revenue to the Federal government generated by this commerce exceeds $1 billion.

In 1978, the State proposed a PCB cleanup project in which the hot spots would be dredged and the contaminated deposits would be removed and disposed of in a secure landfill. The material would be encased in clay and closely monitored to control any runoff or leachate until such time as an effective and economical means of destroying PCBs is developed.

In order to assist New York in implementing the cleanup of this serve hazard, the Congress in 1980 amended the Clean Water Act to add Section 116, which provided for funding of the Hudson River Reclamation Project by the Environmental Protection Agency. Congress provided $20 million to help pay for the project and directed the EPA to make the funds available to New York.

The technical merit of the reclamation project was confirmed by EPA's environmental impact statement, which was published in final form in October 1982. EPA concluded that the dredging and landfill containment of PCBs was the environmentally preferable solution to the problem. Despite these findings, the Environmental Protection Administrator announced in December 1982 that funding would not be provided under Section 116 because of the desirability of allocating funds from the so-called Superfund.

It is clear that this approach will not allow us to move quickly to resolve this urgent problem. The Superfund must somehow deal with 17,000 hazardous waste sites throughout the country that require remedial action. EPA officials have said that their high-priority list may ultimately exceed 1,000 sites. The Hudson River was only added to that list on September 1st, and must compete for allocations from the Superfund with the 545 other sites that have been listed.

EPA's decision has created nearly a year's delay in implementing the Hudson River cleanup, and that delay continues. Not only has this allowed the contamination of the lower Hudson to continue unchecked, but the value of the unspent funds is dissipated as time goes on and costs increase. Prompt action is necessary if we are to obtain full value from the allocated funds.

This situation is completely unnecessary, and would be resolved quickly if EPA would comply with the clear intent of the Congress and release the funds authorized by Section 116 of the Clean Water Act. A broad range of public officials and concerned citizens, including the New York and New Jersey Congressional delegation and several members of this committee, have publicly urged the EPA Administrator to do so. Two lawsuits have been filed to require EPA to release the funds, one by the State of New York and another by four major environmental organizations, the Hudson River Sloop Clearwater, Scenic Hudson Incorporated, the Natural Resources Defense Council, and the Hudson River Fishermens Association. The lawsuits have been endorsed by Save Our Port, a coalition of business, labor and governmental groups in the Port of New York and New Jersey.

Another option that would accomplish the same purpose of immediate implementation of the Hudson River Reclamation Project would be immediate action by EPA to allocate equivalent funds from the Superfund, eliminating time-consuming procedural delays. We in New York defer to the Congress in determining which procedure is preferable. The important issue is to end the delay and move ahead with this crucial cleanup program.

We appreciate the actions taken by members of this committee to obtain prompt action by the Environmental Protection Agency. I strongly urge your taking action that will enable us to eliminate this extreme hazard from one of America's great waterways.

New York City has developed a number of major programs in recent years to revive maritime commerce and revitalize the waterfront for new recreational and commercial activities. The elimination of a serious pollution problem in the Hudson River will be a great step forward in restoring this great natural resource for public use. We in New York appreciate the support of this committee and the Congress in achieving this goal.

STATEMENT OF JOSEPH T. MCGOUGH, JR. COMMISSIONER, DEPARTMENT OF ENVIRONMENTAL PROTECTION, CITY OF NEW YORK

Mr. Chairman and Members of the Subcommitee, I am Joseph T. McGough, Jr., Commissioner of the New York City Department of Environmental Protection. I

would like to thank you for the opportunity to testify before you today on possible amendments to the Federal Water Pollution Control Act.

I am going to address my remarks today to two issues which are currently before the Committee in considering the Act: the level of funding for construction grants, and the 301(h) variance from secondary treatment requirements for sewage treatment plants discharging into marine waters. Both of these have an enormous, direct impact on the City of New York, and they are closely related.

The Federal Water Pollution Control Act Amendments of 1972 required a nationwide, uniform minimum level of secondary treatment for all municipal wastewater treatment plants. In many instances, this level would not be adequate to meet local water quality requirements; and in some instances, perhaps it would be more than is necessary. But it was felt that a uniform minimum of treatment should be required partly because of a quite legitimate skepticism about how accurately water quality based requirements could be calculated. To help cities comply with this requirement, a massive grants program was initiated as the municipal component of a crash program to restore the integrity of the nation's waters.

We all support this goal and there is also almost universal support for the basic regulatory approach set forth in the Act. One result of this approach to secondary treatment, however, is that some misallocation of funds has resulted. In a crash program a certain amount of haphazardness is to be expected: what we want is results. While other aspects of a water pollution control system were grant eligible, secondary treatment was the basic legal mandate. Thus, it was possible to fund infiltration and inflow correction, or combined sewer overflow abatement, or to build or rehabilitate sewer systems, but there was nonetheless a bias in the system for completing the treatment plants.

Ten years have now elapsed since the enactment of Public Law 92-500. Much progress has been made; thousands of treatment plants are in the process of being upgraded throughout the country. Over $30 billion in federal funds have been invested. But we have a very long way to go before the secondary treatment requirement, first mandated for 1977, can be complied with nationwide. In the meantime, construction grant funds are decreasing. It is surely not necessary to recount to Members of this Subcommittee the story of this Administration's successful effort to decrease the Federal commitment to this program to its current level of $2.4 billion.

In a world of diminishing resources, it becomes painfully obvious that requirements and dollars go hand in hand. We are not, however, advocating any change in the basic requirements for municipal treatment in the current law. We advocate that every dollar spend be in the most effective manner. In order to achieve that, we strongly support a flexible grants program which allows the most effective steps to be taken on a system-wide basis to clean up and maintain the water quality of the water body in question. This program should include a limited variance for discharges into marine waters, which can help insure that limited water pollution control dollars can be spend in the way that produces the greatest water quality benefits.

We noted with approval the increased funding for construction grants contained in Chairman Howard's bill, H.R. 3282. Funding under the construction grants program is crucial to the City's effort to comply with the Act's mandates for sewage treatment. The City is currently operating under a consent decree governing the construction of two treatment plants, North River and Red Hook, which, when constructed to full secondary treatment, will represent a total investment of $1.5 billion.

For years, the City faced the problem of the deteriorating condition of the Coney Island and Owl's Head plants, both of which were in dire need of immediate, short-term remedial attention to prevent breakdown in the treatment process that could affect 200,000 homes and bathing beaches. During this past year the City has begun the process of upgrading and rehabilitating these two plants.

Again, if this nationwide commitment to secondary treatment is to be achieved, continued and increased funding under the construction grants program is absolutely essential, not just for the City but also for the thousands of communities which are still hoping to begin construction on needed improvements.

This brings us to 301(h). It was in 1977 that Congress for the first time embraced the concept that it might be possible to identify areas where scarce water pollution control dollars could be saved and more effectively spent in other ways than complying with the uniform secondary treatment requirement. This was not a blanket endorsement of the water quality based approach to water pollution control. Rather, it was an attempt to single out the one instance where it is the most clear that under certain circumstances the millions of dollars of public investment in secondary treatment can in fact produce little or no benefits in water quality. (This is not to

say that there are not others.) To insure that this instance would be narrowly drawn, it was circumscribed by a number of very stringent requirements. It is worth restating these limitations to recall just how stringent the provision is: To obtain an ocean discharge variance, the applicant has the burden of showing that:

(1) there is an applicable water quality standard specific to the pollutant for which the modification is requested;

(2) such modified requirements will not interfere with the attainment or maintenance of that water quality which assures the protection of public water supplies and the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife, and allows recreation activities, in and on the water;

(3) the applicant has established a biomonitoring system;

(4) the modified requirements will not result in any additional requirements on any other point or nonpoint source;

(5) all applicable pretreatment requirements will be enforced;

(6) to the extent practicable, the applicant has a program to eliminate the entrance of toxics from nonindustrial sources into the treatment works;

(7) there will be no new or substantially increased discharges from the plant of the pollutants above the levels specified in the modified permit; and

(8) any construction grant funds will be used either to meet the above requirements or provide the best practicable waste treatment technology.

The variance was to be available only to those communities with existing outfalls in 1977, discharging into marine waters, defined as discharges into "deep waters of the territorial sea or the waters of the contiguous zone, or into saline estuarine waters where there is strong tidal movement and other hydrological and geological characteristics which the Administrator determines necessary to allow compliance" with the second of the above showings. In addition, to make the variance even more limited, a strict time limit was included.

In 1981, as this Committee acted to reauthorize the construction grants program, the Committee endorsed the marine discharge variance. After receiving extensive testimony, and considering similar efforts of the Investigations and Oversight Subcommittee, the Water Resources Subcommittee approved amendments to section 301(h) which eliminated the deadline on applications, eliminated the limitation to communities with ocean outfalls in existence in 1977, allowed States to delegate the authority to make 301(h) determinations and deleted paragraph 301(h)(8) relating to best practicable waste treatment technology. In the full Committee, delegation of variance authority was withdrawn, but a provision was added allowing communities currently achieving secondary treatment to apply for the variance. In its report (H.R. Rept. 97-270) the Committee stated:

"Engineering advances have been made in recent years which have led to improvements in outfall design achieving rapid dilution, in the ability to predict the dispersal patterns of outfall discharges, and in monitoring capability to analyze environmental effects. In addition, there have been continuing increases in capital costs to achieve full secondary treatment, reduction in Federal funding levels, and rising operating costs. In view of these factors, and in order to achieve needed savings in the cost of treatment of municipal wastes, the Committee considers it desirable to make the option of ocean discharges available where it can be shown that unacceptable adverse environmental effects will not result."

Under the provisions of 301(h) as put into the law by this Committee, the City of New York has applied for variances for six of its plants. Four of the City's applications affect plants now in operation: the Newtown Creek facility and the Bowery Bay, Hunts Point and Walds Island plants. The latter three are currently providing full secondary treatment year round. We propose to continue full secondary treatment at those three plants during the summer months and provide primary treatment during the winter months (November to May) when the cool waters surrounding the City naturally absorb and hold more oxygen to meet the needs of indigenous marine life. The application for the Newtown Creek facility proposes a 70 percent removal rate for this facility year round rather than the 85 percent removal required under EPA's current definition of secondary treatment. The remaining two applications are for Red Hook and North River. For North River, the City proposes full secondary treatment for half the flow during the summer months and primary treatment for the other half of the effluent. This would result in a 50 to 55 percent removal rate during the summer months. During the winter, the plant would operate at primary treatment. For Red Hook, the City proposes to build and operate the plant at primary treatment year round. Through these measures, over $450 million in construction costs and several million a year in operating costs could be devoted to water pollution control measures which clearly have greater benefits. These applications are currently undergoing scientific review and revision under the provi-

sions of the Environmental Protection Agency's regulations. At this time, the main issue is a scientific one having to to with modelling the water quality impacts of discharges into the water in the area and the compliance with water quality standards. We feel that this is a proper defensible, scientific decisionmaking process and that it ought to continue. We intend to abide by the outcome.

In general, we are now in a time when environmental laws, which were written in the most admirably sweeping and idealistic terms, are being and must be scrutinized to determine where limited public resources can obtain the most pollution reduction benefits. This is a difficult process. Every time a way is found of directing funds from dubious to more urgent purposes, the effort will be open to the charge of backing off from the original goals of the Act, and allowing dirtier water—for example, by allowing less than secondary treatment. But we, as public officials, now live in a more complicated world of limited resources where difficult choices must be made.

I would now like to address some of the specific provisions included in the Howard bill, H.R. 3282.

DISCHARGE INTO ESTUARINE WATERS

The provision of most concern to us is the amendment eliminating the application for a variance for discharge into saline estuarine waters where there is a strong tidal flow. This prohibition will eliminate a category of applicants from consideration without regard to the water quality conditions in the specific location. We believe that each case should be examined individually and a decision on whether to grant a variance should be based on the extensive scientific evidence submitted by each applicant pursuant to the strict standards set by the law. If an applicant demonstrates that water quality would not be adversely affected by the modified requirement, then no justification exists for eliminating the possibility of a waiver for estuarine waters. We could, however, support the language included in the Senate bill which states "such marine waters must exhibit characteristics assuring that water providing dilution does not contain significant amounts of previously discharged effluent from such treatment works".

PRIMARY TREATMENT

The bill also requires that a treatment plant provide at least primary treatment including screening, sedimentation, skimming and chemical treatment to control pathogens. We endorse this proposal but suggest that chemical disinfection be required only when appropriate.

MARINE WATER QUALITY CRITERIA

Paragraph (c) of Section 5 of H.R. 3282, in addition to requiring primary treatment, also requires a showing that the effluent "meets the criteria established under section 304(a)(1) after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged." The intent of this provision is not clear. Water quality standards under the existing program apply to specific pollutants, not to effluent streams. Where POTW effluents contain pollutants of concern, these may be regulated through state water quality standards which are established using the federal Environmental Protection Agency's water quality criteria documents as guidance. Some of this guidance does contain information on the effects of pollutants on saltwater aquatic life and we would support additional research in this area. EPA is also developing guidance on adjusting water quality criteria to reflect local conditions; and unlike other portions of EPA's proposed revisions to water quality standards, that initiative has received widespread support from Congress and the public. We support use of water quality criteria in this way, and we do not take the proposed amendment as suggesting that existing or future guidance on saltwater criteria for the protection of marine life be given automatic regulatory force. As such, the proposed amendment is consistent with the existing provision of section 301(h)(1) and we would request clarification if there is intended to be any other impact.

CUMULATIVE EFFECTS

Another provision of concern to us is the requirement that the cumulative effects of possible variances be considered as a condition to the grant of a variance. This is a valid concern but one which will be difficult to administer. However, the provisions of H.R. 3282 relating to interstate management conferences for estuaries might be a more proper vehicle for consideration of the effects of applications upon

a particular body of water. Additionally, section 301(h)(4) now requires that a variance not result in any additional requirements on any other point or nonpoint source and therefore implicitly deals with this issue. Finally, the requirement that all treatment plants receiving a variance provide a minimum of primary treatment is a valid step in addressing the concern of cumulative effects of variances.

REMOVAL OF TOXICS

Finally, the provision requiring removal of toxics at the same levels as that provided by secondary treatment and the entire question of removal levels for toxics is one which is of concern to us. It is a complex issue which must be addressed in a rational manner. Mandating that removal of toxics be at the same level as now provided by secondary treatment does not address the real question of determining what level of each toxic pollutant is permissible, which should be accomplished by specifically setting standards for each pollutant.

In summary, we believe that the regulatory process should be permitted to proceed. A variance from the requirement for secondary treatment is for a five year period only, at which time a re-evaluation can occur. In addition to the limited time period, extensive monitoring is required in order to determine the effects on water quality during the life of the variance. This mechanism for continued evaluation of 301(h) waivers will address many of the concerns expressed about the program.

I would like to thank the members of the committee for the opportunity to present our views.

Mr. ROE. Please proceed.

TESTIMONY OF ALLAN M. TUMOLILLO, ASSISTANT COMMISSIONER OF PORTS AND TERMINALS, CITY OF NEW YORK, ACCOMPANIED BY JOSEPH T. McGOUGH, JR., COMMISSIONER, DEPARTMENT OF ENVIRONMENTAL PROTECTION, CITY OF NEW YORK

Mr. TUMOLILLO. Thank you, Mr. Chairman. It is a pleasure to be here today. Some reference has already been made to the Hudson River reclamation project, the PCB problem that we have in New York State and New York City. I would just summarize some of the elements of the background on that and get into our proposals.

The Hudson River, as some of you well know, has been polluted by the PCB's that have been deposited in the river in upstate New York, near Troy, N.Y. This contamination has led to many problems in the lower bay, the denial of dredging permits as well as problems in the river to the commercial fisheries operation up there, and if either of those activities were suspended it would cause grave economic damage to the State and City of New York.

The EPA and the Fish and Wildlife Service have determined that the PCB contamination in the river and in the bay exceeds the permissible levels. In New York State, the Department of Environmental Conservation initiated the Hudson River reclamation project with State funds and funds collected from the General Electric Corp., one of the companies that has contributed to the pollution.

The program envisioned removing 40 of the hot spots, the most concentrated hot spots of PCB's in the Hudson River. These are the hot spots that when there is the high flow of water down the Hudson, the sediments are carried over the dam down into the lower bay and some are deposited on the slips and berths of New York Harbor, thus leading to permit problems. In 1978, 1979 and 1980, the Army Corps of Engineers in New York, the lead agency for issuing permits, got to the point of rejecting virtually all permits applied for that year due to the PCB contamination. Obviously not all the PCB's in the harbor come from the Hudson River,

although some portion does come from them and is the most concentrated source. Some additional sources are runoff from the streets and so on.

The pressure from court interests, labor, and concerned citizens to keep the port open because of its tremendous economic benefits to the region led to what was called an interim guidance matrix, a technical formula by which permits could be accepted or rejected and some remedial action taken in protecting the ocean where most of the dredged material would be taken.

Since that time, there has been, as you mentioned, no action taken on the PCB cleanup. Two environmental impact statements have been completed, one by the State of New York and one by the Environmental Protection Agency, both recommending going forward with the project.

Congress in 1980 very clearly stated its intent that the river should be cleaned up, recommended the use of the $20 million under section 116 to fund that program. Admittedly, it is not enough to clean up the entire river as you mentioned earlier, Mr. Chairman, but it is an adequate start and does hit the most important part of that problem.

EPA has taken the tack that Superfund is the route to go. And as you all know, there are hundreds, if not thousands of sites across the United States which are considered eligible for Superfund. And where this would sit in that priority listing, it is not clear. It appears to be far down the list under the Superfund requirements, which would mean that there would be further delays, additional studies to prove that the project should go forward and decide what the scope of the project would be.

The $20 million that was authorized and appropriated has lost value since 1980: it has diminished sharply. We support the State position that the dredging should go forward and that if Superfund were available for this project for the incineration, than that should be looked at immediately.

We do not have detailed legislative proposal to you, we have looked to the Congress to give us guidance. We do wish that the Congress would reiterate its clear intent that the river be cleaned up so that the port of New York and that the commercial fisheries operation in the upper Hudson can continue and the economic benefits of those activities can accrue to the region.

Wheather the reauthorization of section 116 is the preferred route with additional funds coming from the Superfund program or funds are solely out of Superfund, we will be guided by the Congress.

Our main concern is that this project move forward now rather than 5 years from now.

Mr. ROE. Would the gentleman yield on that point?

What you are saying is that somebody has got to make a decision and get it moving. Is that really basically what we are saying.

Mr. TUMOLILLO. Yes.

Mr. ROE. And then apparently it is not going to be made unless Congress makes that decision, is that a reasonable point of view?

Mr. TUMOLILLO. Yes, that is our position.

Mr. ROE. Thank you.

Mr. TUMOLILLO. That is the testimony from my department. I would turn the floor over to Commissioner McGough. If there are any questions.

Mr. ROE. Commissioner McGough.

Mr. MCGOUGH. Yes, I want to thank you for inviting me today and giving me an opportunity to testify on these important issues.

I am going to address my remarks to two primary issues. One is the level of funding, construction grants, and the other is the 301(h) variance from secondary treatment requirements. Both of these are enormously important issues to the City of New York and they are interrelated.

The Federal Water Pollution Control Act amendments of 1972 required a nationwide uniform minimum level of secondary treatment for all municipal waste water treatment plants. In many instances this level would not be adequate to meet local water quality requirements and in some instances it was recognized and perhaps would be required.

Mr. ROE. Would the gentleman pull his microphone a little closer, please.

Mr. MCGOUGH. But it was felt that a uniform minimum standard of treatment nationwide should be required, probably because of a quite legitimate skepticism about how accurately water quality based requirements could be calculated. To help cities comply with this requirement, a massive grants program was initiated as the municipal component of a crash program to restore the integrity of our Nation's waters.

We support this goal and the regulatory approach set forth in that act.

One result of this approach to secondary treatment, however, is that some misallocation of funds has resulted. In a crash program a certain amount of miscalculation is to expected. What is important is swift action.

Ten years have now elapsed since the enactment of Public Law 92-500. Much progress has been made, thousands of treatment plants are in the process of being upgraded and over $30 billion in Federal funds have been invested. But still we have a long way to go before the secondary treatment requirements, first mandated for 1977, can be achieved thoughout the Nation.

Accordingly, we note with approval the increase in funding for construction grants contained in Chairman Howard's bill, H.R. 3282. Funding under the construction grants program is crucial to the city's efforts to comply with the act's mandate. The city is currently constructing two new sewage treatment plants in North River and Red Hook, which when constructed to full secondary treatment, would represent an investment of $1.5 billion.

In addition, the city has begun upgrading the last two plants, Coney Island and Owl's Head to full secondary treatment, bringing to 11 the number of full secondary plants in operation in the city.

Again, if this nationwide commitment to secondary treatment is to be achieved, continued, and increased funding under the construction grants program is absolutely essential not just for the city but also for the thousands of communities throughout the Nation who are still hoping to begin construction of needed improvements.

This brings me to the 301(h) issue which is of course also very important. On this issue we are not advocating any change in the basic structure of the Clean Water Act. What we do advocate is that dollars be spent in the most effective manner. In order to achieve that, we strongly support a flexible grants program which allows the most effective steps to be taken on a systemwide basis to clean up and maintain the water quality of the body of water in question.

This program should include a limited variance from discharges into marine waters which can help to insure that limited water pollution control dollars are spent in the way that produces the greatest water quality benefits.

In 1977, Congress endorsed this concept when it passed the original 301(h) provisions and in that passage it tried to identify that area where scarce water pollution control dollars could be saved and more effectively spent. It did not endorse a blanket water quality based approach to water pollution control problems but rather it was an attempt then to single out the one instance where it was most clear that secondary treatment would in fact produce little or no benefits to water quality. To insure that this instance was narrowly drawn, it was circumscribed by a number of very stringent requirements. They were eight in all at that time, there are seven now and I need not reiterate them here to this committee, which is well aware of them, but indeed they are very, very stringent.

Again in 1981, when this committee acted to reauthorize the construction grants program, the committee endorsed the marine discharge variants. At that time, after receiving extensive testimony, it made some slight amendments to 301(h) eliminating the deadline that had previously been set and permitting communities that has established outfalls after 1977 to apply for the waiver.

It is interesting to note that in its report at that time the committee stated that:

> Engineering advances have been made in recent years which have led to improvements in outfall design achieving rapid dilution, in the ability to predict the dispersal patterns of outfall discharges and in monitoring capability to analyze environmental effects.

In addition, the committee stated:

> There have been continuing increases in capital costs to achieve full secondary treatment, reduction in Federal funding levels, and rising operating costs. In view of these factors, and in order to achieve needed savings in the cost of treatment of municipal wastes, the Committee considers it desirable to make the option of ocean discharges available where it can be shown that unacceptable adverse environmental impacts will not result.

Under the provisions of 301(h) as put into the law by this Committee, the city of New York has applied for six variances. Three of these are for existing plants which are now treating at the secondary level. For these three plants, Bowery Bay, Hunt's Point and Ward's Island, the city is seeking only seasonal variances where it will treat at the secondary level in the summer months and it will treat at the primary level for the winter months when the cool water surrounding the city naturally absorbs and holds more oxygen to meet the needs of indigenous marine life.

The fourth application is for the Newtown Creek facility, the last remaining plant that has not been upgraded to secondary. This

plant is a step aeration plant and currently gives a removal of 70 percent of the pollutants in the effluent. It is our proposal in our application that we continue to leave that plant at its step aeration rate on a year-round basis.

The last two applications are for the North River and Red Hook plants. In the case of North River it is our intention to treat half the flow at the secondary level and the other half of the flow at a primary level during the summer months. During the winter months we would treat all the effluent at the primary level. At Red Hook it is our proposal that we treat at the primary level year round. Through these measures, over $450 million in capital construction costs and several million dollars a year in operating costs could be saved, to be devoted to other water pollution control measures that would benefit New York City and the surrounding communities. These applications are currently undergoing scientific review and revision under the provisions of the Environmental Protection Agency's regulations.

At this time the main issue is a scientific one having to do with modeling the water quality impacts of discharges into the waters in the area and compliance with water quality standards established by the State of New York. We feel that this is a proper defensible, scientific decisionmaking process and that it ought to continue. We intend to abide by its outcome.

In Chairman Howard's bill there are several provisions that I would like to comment specifically on. The first provision, the one that is the most troubling for us is that which relates to estuarine waters. The provisions would prohibit the city of New York actually from, for all intents and purposes, continuing with its applications. This prohibition will eliminate a category of applicants from consideration without regard to the water quality conditions in the specific location.

We believe that each case should be examined individually and a decision on whether to grant a variance should be based on the extensive scientific evidence submitted by each applicant pursuant to the strict standards set forth in the current law. If an applicant demonstrates that water quality would not be adversely affected by the modified requirement, then no justification exists for eliminating the possibility of a waiver for estuarine waters. We could however support the language included in the Senate bill which states:

"Such marine waters must exhibit characteristics assuring that water providing dilution does not contain significant amounts of previously discharged effluent from such treatment works."

As to primary treatment, the bill also requires that a treatment plant provide at least primary treatment including screening, sedimentation, skimming and chemical treatment to control pathogens. We endorse this proposal but suggest that chemical disinfection be required only when appropriate.

Paragraph (c) of section 5 of H.R. 3282, in addition to requiring primary treatment also requires a showing that the effluent "meets the criteria established under section 304(e)(1) after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged." The intent of this provision is not clear. Water quality standards under the existing program apply to specific pollutants, not to effluent streams. Where POWTW ef-

fluents contain pollutants of concern, these may be regulated through State water quality standards which are established using the Federal EPA's water quality criteria documents as guidance.

Some of this guidance does contain information on the effects of pollutants on salt water aquatic life and we would support additional research in this area.

EPA is also developing guidance on adjusting water quality criteria to reflect local conditions. And, unlike other portions of EPA's proposed revisions to water quality standards, that initiative has received widespread support from Congress and the public. We support use of water quality criteria in this way, and we do not take the proposed amendment as suggesting that existing or future guidance on salt water criteria for the protection of marine life be given automatic regulatory force. As such, the proposed amendment is consistent with the existing provision of section 301(h)(1) and we would request clarification if there is intended to be any other impact.

Another provision of concern to us is the requirement that the cumulative effects of possible variances be considered as a condition to the grant of a variance. This is a valid concern bit one which will be difficult to administer. However, the provisions of H.R. 3282 relating to interstate management conferences for estuaries might be a more proper vehicle for consideration of the effects of applications upon a particular body of water. And we would endorse it. Additionally, section 301(h)(4) now required that a variance not result in any additional requirements on any other point or nonpoint source and therefore implicitly deals with this issue.

Finally, the requirement that all treatment plants receiving a variance provide a minimum of primary treatment is a valid step in addressing the concern of cumulative effects of variances. Finally, the subject of toxics. The provisions require removal of toxics at the same levels as that provided by secondary treatment and the entire question of removal levels for toxics is one which is of grave concern to us. It is a complex issue which must be addressed in a rational manner. Mandating that removal of toxics be at the same level as now provided by secondary treatment does not address the real question of determining what level of each toxic pollutant is permissible, which should be accomplished by specifically setting standards for each pollutant.

In summary, we believe that the regulatory process should be permitted to proceed.

A variance from the requirements for secondary treatment is for a 5 year period only, at which time a reevaluation can occur. In addition to the limited time period, extensive monitoring is required in order to determine the effects in water quality during the life of the variants. This mechanism for continued evaluation of 301(h) variances will address many of the concerns expressed about the program.

I would like to thank the members of the committee for the opportunity to be here and I would like to entertain any questions that you might have.

Mr. ROE. We want to thank both of you distinguished representatives from New York City for your valid testimony.

The gentleman from Minnesota.

Mr. STANGELAND. I, too, Mr. Chairman, want to commend Mr. McGough and Mr. Tumolillo for a very extensive piece of testimony and I would yield to the gentleman from New York for whatever questions he might have.

Mr. MOLINARI. First, I thank the gentleman for yielding.

I must welcome these two fine professionals.

Mr. Chairman, we are very fortunate to have Commissioner Tumolillo and Commissioner Joe McGough, both of whom I worked with very closely and for whom I have a high regard.

I would like to see if we can get a little better fix on the problem of dredging in New York Harbor which is becoming increasingly important to the Port of New York and New Jersey.

Can you tell me how much dredging they are doing now in the city of New York, Mr. Tumolillo?

Mr. TUMOLILLO. The dredging in the bi-State port, the Port of New York and New Jersey, averages some 10 million cubic yards a year for both maintenance of slips and channels and any new construction.

Mr. MOLINARI. Is that amount equivalent to that which is required for normal maintenance?

Mr. TUMOLILLO. Yes, to maintain the navigable waterways at the depths authorized by Congress and the slips and berths adjacent to them, so that the cargo ships the passenger liners, towboats and so on can use the facilities in place, representing several billion dollars in capital investment. Without those slips and without the waterways, commerce with the city and with the neighboring jurisdictions in New Jersey would be severely hampered.

Mr. MOLINARI. I was under the impression that there is certain areas within New York Harbor that there will be further dredging required in order to make the navigable—the waterways of sufficient depth to accommodate the ships that are going through that.

Mr. TUMOLILLO. Right, in the area of the Kill Van Kull, which goes along northern Staten Island into New Jersey, the channel there is now 35 feet authorized by Congress and the proposal is to take it down as deep as 45 feet. That would require new construction, as one of the channels in the authorization bill. That project would be held up if the PCB contamination or the other pollutants were to interfere with the disposal of that dredge material.

Mr. MOLINARI. Let us get into that if we can.

What is your assessment as to the seriousness of the contamination problem as it affects the dredging of those waterways?

Mr. TUMOLILLO. One of the problems that we have in New York is getting a fix on each of the contaminants that are present in the harbor, the various heavy metals, PCB's, other hydrocarbons. EPA and the corps have begun to address each of those in series. PCB's being the first one that was addressed due to the problems that we faced in 1979. I believe the problem we face is that it is not a comprehensive program. It does not clearly delineate the costs and benefits; and operating somewhat on their own, the EPA and the corps and the region, although pressure to keep the port open have clearly signaled that the guidelines will require them to deny permits if the standards are exceeded. That is problem enough.

So we could not take the material to the ocean disposal site but there are no real serious alternatives that are viable at this time.

There are a number of proposals and the Army Corps of Engineers is moving aggressively to find alternatives to the ocean disposal of dredged material. Some progress has been made but those are still many years off before there is an alternative site. The problem we will face then is that the levels that are permissible will be exceeded prior to the availability of alternative sites and in that period, the port will face a very uncertain future and in turn the investment that is slated in the port, whether it be for the Navy or containers, or whatever, would have to be looked at again, if it really could not—if the harbor could not be dredged to accommodate those installations.

Mr. MOLINARI. What is your best recommendation?

Mr. TUMOLILLO. One recommendation would be to accelerate the pace of the Army Corps' program to find alternative disposal areas for dredge material. It should be pointed out that even in the deepening projects, say the Kill Van Kull, which to the full extent could generate 30 to 40 million cubic yards of dredge material, it is only the very top layer that presents the problem. The first foot or so of dredge material, once that is cleaned off, the rest of the material is by and large very clean material. It does not present a problem.

It is getting to that clean material that we go through the first foot of contaminated material. If the corps program were accelerated or perhaps disposal options for a small percentage of the material could be found, then the cleaner material could be disposed of easily either in landfills or in the ocean.

Mr. MOLINARI. Would you yield for a second?

Can you quantify for us, in terms of cubic yardage, what that 1 foot of contaminated material might amount to?

Mr. TUMOLILLO. Well, in an average year, in the 10 million cubic yards, somewhere around 10 percent of that presents some problem to the corps and EPA for ocean disposal.

I would hazard to say that perhaps that same number would apply in the Kill Van Kull project, probably slightly less given a 10-foot deepening, so perhaps 10 percent, 8 percent, would be approximate.

Mr. MOLINARI. Eight percent of the 10 million figure you are talking about?

Mr. TUMOLILLO. Yes; that would be approximate.

Mr. MOLINARI. Is it accurate for me to say that the material to be dredged in the Arthur Kill would be a great deal more contaminated than that which would be in the New York bay area?

Mr. TUMOLILLO. In the Arthur Kill?

Mr. MOLINARI. Yes.

Mr. TUMOLILLO. I think that would be a reasonable assumption. I have not seen the test data from that area but given the nature of the industries along there and some other problems that we already had over in Elizabeth with that toxic problem before, there is reason to believe that that waterway suffers more degradation, say, than the bay itself, but I would have to yield to environmental agencies in New York and New Jersey for that data.

Mr. MOLINARI. And Commissioner McGough, what about the method of disposal?

There has been some suggestion made that we consider using that dredge material for land fill, for cover for land fills.

Do you have any thoughts on that subject?

Mr. McGOUGH. My thoughts would be that as my colleague stated, the bulk of the material would not be contaminated; it could possibly be used for that purpose. However, with the other material that is contaminated, I think that we should look for alternatives other than land fill disposal, and I would endorse his suggestion that there be support here in this committee and elsewhere for the Corps of Engineers to complete their analysis and obtain an appropriate site for that material.

One of the responsibilities that I have in the city of New York as chairman of the hazardous waste task force is hazardous waste disposal which obviously is a very big problem. From the discussions that I have had with EPA, they are looking for incineration and incineration offshore as a research project should be given the highest priority by EPA. It seems to me in all these areas that disposal is a very knotty problem. We have all these funds to clean up, but where are we going to put it?

What are we going to do with it? I know from cleaning up waste oil facilities in the city of New York, where we spent $2.5 million to clean it up at city expense, that it was very, very difficult to find appropriate facilities that had appropriate licenses to properly handle essentially what was PCB-contaminated oil. And I think that oil is easier to dispose of because it burns of its own, but other materials like dredged oils would be more difficult. It seems to me that incineration holds the greatest promise at this point, and/or efforts in research, in developing those methods should be forwarded by EPA.

Mr. MOLINARI. How far away are we, though, from the point where we could have a technology in place to have incineration of that dredge material?

Mr. McGOUGH. I think we are relatively close.

There are already several vessels and I believe EPA has research projects already. So I do not think we are that far away. There are a lot of concerns that have to be looked at and we have to go carefully, but I would say in the not-to-distant future. I'm really not close enough to give you a precise answer on that, but it seems to me that a lot has been done and other nations are interested in it, as well, and there is, therefore, a lot of scientific activity in this area.

Mr. MOLINARI. I would like to ask this general question of both of you and accept an answer from either or both.

We do have a very serious problem on our hands in terms of dredging. It is one that is becoming a crisis, really. And while EPA is conducting studies and the Corps of Engineers is doing its own studies, we have had some problems with the corps in the past and there are some studies which concern me, and you represent two agencies that are involved in the subject areas.

In the immediate future, the near term future, what do you see as the most plausible answer to this dumping problem dredged materials?

Mr. TUMOLILLO. Let me take a stab at that for at least the facilities that we have in New York City.

The Corps of Engineers and the EPA both have done environmental impact statements on the feasibility of ocean disposal, for designation of the mud dump site. Both environmental impact statements recommended that that site be used in the short term, at least until it reaches capacity, which is only another 8 or 10 years, 12 years, depending upon the pace of the projects.

I would recommend in the short term that the following be done:

One, is that the dump site be continued to be used for the overwhelming bulk of material that passes the test.

Two, for the material like the PCB's where there is a guidance matrix in place, as long as that matrix reflects scientific understanding of the dangers of PCB and is not an artificial guideline, that interim programs—perhaps the capping program which I know has been of some controversy—but the programs where the contaminated material is to be covered to great depths by clean material and acceleration of that program might provide a short term solution to keeping the Harbor open while the longer term solutions are being pursued by the corps and EPA.

The capping program for members of the committee, is simply where you take the material that is considered contaminant to some designated area, dispose of it and immediately follow on that with clean material, sand, and so on.

And tests thus far seem to indicate that that keeps the material in place and it does not go out into the environment.

Mr. MOLINARI. You are talking about on land?

Mr. TUMOLILLO. No; it could be in the ocean, in designated areas. On land, you have additional problems of leaching down into the water table and that is a question that has not been fully addressed for the various sanitation land fills who would consider that, and that is a more complicated issue.

Mr. MOLINARI. But are we convinced at this point that encapsulating this questionable raw material at sea will truly prevent it from escaping and causing grave environmental harm to the surrounding waters?

Mr. TUMOLILLO. I think no one can give you a guarantee that this will never escape. I think the tests thus far seem to indicate that it is fairly stable and will not naturally erode.

I think additional work would have to be done to give you a much more level assurance on that.

However, one point should be kept in mind, that this material is already suspended in the rivers and waterways of New York Harbor, and the natural action of the harbor in terms of the tidal action, the flow of the Hudson River, will inevitably lead to this material coming out into the ocean, further areas out to sea, thus endangering the fishing and recreational uses of those waterways.

This is not material that is on land and we are looking to find a way to deal with it. It is already in the water environment and because it is there, it will move around and will settle in various places along the beaches and so on, and it is my feeling that if that is taken out, that it actually cleans up the inner harbor area, if the other programs that the Congress has worked on in terms of the pollution plants go forward. That will reduce the amount coming into the bay and if the material that is taken into the ocean is capped, that material is considered contaminated, we are further

ahead of the game then if we let it just sit where it is, let the harbor silt up and then have this material suspended in the environment.

Mr. MOLINARI. Is the Kill Van Kull a flushing tributary?

Mr. TUMOLILLO. There is tital action in there. The river action in there from New Jersey is probably not as great, nearly as great as the Hudson River, but there is some tidal flushing in there.

Mr. MOLINARI. I just have a question of Commissioner McGough on the 301 waivers.

Commissioner, I think the city of New York has made application for some six waivers; is that correct?

Mr. MCGOUGH. That is correct.

Mr. MOLINARI. And in your statement you tell us about the cumulative effects which of course is very key question here.

Are you aware of how many 301 waivers applications were made to EPA region 2, just from New York and New Jersey?

Mr. MCGOUGH. If my recollection serves me, it is just around 20. Maybe somebody—the chairman might know exactly. It is about that.

Mr. ROE. I think it is higher than that.

I think it is around 60 or something.

Mr. MCGOUGH. In New York?

Mr. ROE. In the New York-New Jersey area.

Mr. McGough. In the whole region?

OK.

Mr. MOLINARI. I think, if I am not mistaken, that the entire region was something like 31, but New York and New Jersey represented a vast majority. So, of course, the question came to my mind at the time, good God, what would happen if all of those waivers were granted?

Now, that was a question that EPA and region 2 had to answer and originally they said it was going to take them 18 months to be able to reach a decision as to the combined impact.

But then I think preliminarily they denied at least some of those applications.

Could you clear us up on that question?

Mr. MCGOUGH. Sure.

The exact status of, the city's six applications, they have notified us of intention to deny those six. We have in accordance with the regulations filed an intention to revise these; under that condition we are given 1 year to revise these applications and in revising these applications we are required to improve them and we are now going through the process of determing how we might improve these applications for their refiling within the 1-year period.

With respect to all the others, and impact of the Hudson, for instance, I am not sure how they stand in each case. I think some of them may have been granted. They were seasonal in nature rather than full time or year round.

Mr. MOLINARI. Are you involved in any information gathering process to determine the impact of the six that you have direct jurisdiction of, over, as opposed to the remainder and what impact it would have so you could spell out a case for yours?

Mr. MCGOUGH. Well, yes, we have.

In our application and in reply to the State department of environmental conservation's position of denial as well, we produced a rebuttal and in that we did address what we considered to be the possible impacts of other applications should they be granted variances.

Let me say that the city of New York believes that the assimilated capacities of the river must be shared, obviously with all the applicants and that is a very knotty problem, and it is a very, very important one.

So we are certainly not taking a position that we should be entitled to all assimilated capacities of the river that is absolutely not so.

At this point the interstate sanitation commission, a body which does include New Jersey, New York, and Connecticut, does have authority to pass upon these variance applications in the first instance and that body plays a very important role in determining what the assimilated capacities are and how these assimilated capacities might be divided equitably.

Mr. MOLINARI. Thank you.

I am going to pass at this time.

Mr. ROE. I recognize the gentlelady from New York.

Ms. FERRARO. I want to follow up on the 301(H) waivers.

You said that you have a year to improve those applications.

What do you do when you improve an application?

Do you indicate an alternate pollution control measure or what?

Mr. MCGOUGH. The applications, the intention to deny indicated that our applications still included water quality violations.

In other words, the application of the treatment process proposed in our application, would still result in water quality violations in the estuary system; therefore, in order to reapply we must eliminate those water quality violations.

Now, these water quality violations in our view are within the tolerances of the water quality model that we are dealing with which was developed by the city of New York under the 208 planning process. The city spent several millions of its dollars to develop this water quality planning model which is the one that is used by all of the municipalities in and around the harbor.

So the improvements must be to eliminate those water quality violations pointed out by the interstate sanitation commission.

Ms. FERRARO. You acknowledge that the city would save $450 million, I believe, in construction costs if those waivers are granted, and several million dollars a year in operating costs.

Isn't the city's opinion that this money could be spent on other pollution control measures that would have a greater positive effect on water quality?

Mr. MCGOUGH. Yes.

First, let me point out that this $450 million is the total amount of construction costs, 75 percent which is Federal, 12½ percent State, and 12½ percent city.

Yes, the biggest problem beyond the elimination of the raw discharges that are now occurring as the result of not having the North River and the Red Hook plant and developing a treatment that meets water quality standards, which we believe is covered in our applications, is storm water overflow control.

We have in the city of New York, and I know that all of the communities that border on the Hudson River and on the bays, both in Connecticut and New Jersey, also have primarily combined sewer systems. These systems, whenever you get any appreciable rainfall, the tide gates open, our regulators open and allow the combined flow of both sanitary wastes and storm water to discharge into the bays and harbors surrounding New York.

Now, it seems to me that this money could be put to better water quality use if it were used for storm water overflow control. There are institutional impediments at this point, some of which Deputy Commissioner Marsh alluded to, with respect to the set asides, and the adequacy of that approach, also the priority listing that the State currently has would have to be adjusted. It seems to me if these adjustments were made and that CSO's were recognized as an eligible grant category, that regionally we could pursue a strong water quality control program that could, in bang for the bucks, so to speak, have greater water quality improvements, than going to full secondary, in-plants like Newtown Creek and North River, where a substantial amount of capital savings would result.

So right now in going through the revision of our applications, I have been sitting down with the officials from the interstate sanitation commission, officials from New Jersey, and Connecticut as well as environmental groups and trying to get their assessment of this very question.

Cannot we get better water quality in our region from a transfer of these funds to other purposes rather than following rote, secondary water quality treatment, the secondary treatment requirement of the act.

Ms. FERRARO. That is precisely what the testimony was last year, Sister Frances Kress who appeared before this committee on behalf of the Clean Water Association, she came to testify with respect to Newtown Creek, which is in my district, and she said basically the same thing you did. She was discussing the combined sewer overflow situation and she stated:

> U.S. EPA's insisting that the Newtown Creek sewage plant upgrade to secondary treatment at an estimated cost of $275 million. I am chairperson of the Newtown Creek sewage treatment plant's Advisory Committee. I suppose I should be grateful that someone wants to spend so much money in our area on pollution control; however, secondary treatment for sewage plants ought not to be the highest priority item.
>
> It is neither the most urgent or the most cost effective expenditure. There are a number of other steps which would achieve much more environmental improvement for the dollar than secondary treatment.

I think what she was saying is what you are saying, that there may be better ways of dealing with this, but because the Federal Government has mandated the sewer treatment plant upgrading, that it seems that the bucks are having to go in that direction rather than in a way that might actually lead to cleaner water.

Mr. ROE. Would the gentlelady yield on that issue?

Ms. FERRARO. I would be happy to.

Mr. ROE. You know, I think what would be interesting would be to get the facts as they relate to the eligibility of the elimination of the combined sewers. That has been a major battle around here since 1970, and it seems to me that what the gentlelady is saying has a great deal of merit.

Mr. McGOUGH. I would certainly agree with that, yes.

Mr. ROE. The gentlelady from New York.

Ms. FERRARO. I have no further comments or questions.

I do appreciate the testimony on the PCB's because I think we have had extensive discussion on the problems that exist and certainly on the need for EPA to take a close look at their responsibilities as far as PCB's are concerned.

I thank you both.

Mr. ROE. I know the gentlelady feels as strongly as I do on that very issue, that PCB issue, and it seems to me, and I think that Mr. Tumolillo made the comment, that if Congress wants to do something about it, that Congress has to make the decision and break the log jam.

Is that not what we are basically saying?

Mr. TUMOLILLO. Yes.

Mr. ROE. All right.

Are there any further questions of these witnesses?

The gentleman from California

Mr. PACKARD. Just briefly, Mr. Chairman.

I appreciated the testimony of both of you gentlemen.

Mr. McGough, I recognize that you have made a significant plea for a balance between requirements for secondary treatment and those areas where it is not required and where it would not be necessary, and that your concern could be projected all across the country.

There are those areas that feel that they can meet the requirements of EPA without going secondary treatment and, secondary treatment as you know, can be extremely expensive.

Do you feel, however, in one of your recommendations that it will be cost effective to put in costly secondary treatment facilities and then only use it for part time during the year?

Is that the most cost effective way to meet the standards?

Mr. McGOUGH. In some instances it is really the only way to meet the standard because of the weather conditions. In the warm weather, particularly in our area of the country, you need a higher level of treatment because the oxygen demand is such in the summertime that without that higher level of treatment, you will have deficits in the receiving waters.

So, therefore, it is important in some cases, and in a number of other instances, maybe not all, where you have a tremendous tidal flushing condition, it may not be. But in many of our plants that protect bathing beaches, we are not applying for any waivers at all. We feel it is mandatory that we have year-round secondary.

So I think the weather conditions have a great deal to do with it, and I would say that we could not—I would not either propose that CSO control, even brought to the ultimate, could necessarily replace the need in the summer and winter months for, secondary treatment.

Mr. PACKARD. So it is your judgment that those decisions ought to be made at the local level or at the State level, rather than through Federal mandates as to whether to put in a certain level of treatment to meet the requirements of EPA, or whether it is not necessary?

Mr. McGOUGH. That is right.

I think that we have come to the point in the progress of this law that we are down to some of the fine points and there ought to be some flexibility with respect to this issue.

Mr. PACKARD. Thank you very much.

Mr. ROE. We want to thank you very much for your testimony. It has been very helpful to us today and we look forward to working with you.

Our next witness for the day is the Honorable Mayor Brian J. Lawler, who is the mayor of the city of New Bedford, Mass., and I will defer the honor welcoming the mayor to our good friend and Representative, Mr. Donnelly from Massachusetts.

Mr. DONNELLY. Thank you very much, Mr. Chairman.

On behalf of my colleague, Mr. Studds, I would like to welcome the mayor here before our subcommittee and I look forward to his testimony.

Mr. ROE. I want to welcome the mayor.

We are looking forward to your testimony.

TESTIMONY OF HON. MAYOR BRIAN J. LAWLER, CITY OF NEW BEDFORD, MASS.

Mr. LAWLER. Mr. Chairman, distinguished members of the committee, ladies and gentlemen, I thank this committee for granting us the opportunity to offer some observations on the Clean Water Act particularly as it affects our city, New Bedford, and other cities in similar situations.

There can be no thought of opposition to a law the purpose of which is to protect our environment and to improve the quality of life for all of our people. We are here for another reason. The question we raise and the concern we have come to express is the stringency of one of the mandates contained in the law. We contend that every city is different in its social and economic composition. This being so, any law which applies to every city must allow latitude of action to provide for the differences which may, as in our case, be very significant.

We are especially concerned about the mandate that a sewer use fee be implemented without exception. A law which does not provide for exception ceases to be law and becomes dictate. The implication of Federal dictate leads us down the road to a Constitution conflict. So serious is the possibility that we are compelled to object for ourselves and for all cities. It is not possible for the Congress to know the circumstances which apply in New Bedford unless we come to inform you.

We have now and have had for many years an operational sewage treatment plant. This plant is supported by the local real estate tax levy and we know that, given the mix of industrial and nonindustrial use, the levy is fairly assessed. There are no complaints from either side of the mix and harmony exists. Now comes the Federal Government through its agent, the EPA, and says, "Impose a sewer use fee or lose all Federal grants." We have explained to the EPA the special care with which we treat the industrial members of our civic family because of our chronic unemployment rate and how our people wish to be supportive of those businesses which provide employment and economic opportunity to our

city. To the credit of the EPA let me make clear that they have cooperated completely within the limits set by law. But their hands are tied. Our precise contention is that the EPA does not have the discretion to make an allowance which it recognizes to be desirable and necessary. Here is the weakness in the regulations. No provision is made for special circumstances.

In our city during this year there was an election. In that process the question of the imposition of a sewer use fee was critical. Our people divided on the issue between those who accepted, with a sense of fatalism, that no one could oppose or even question the dictate of the Federal Government and those who vehemently opposed the imposition of any new taxes. The result was clear. Our people wish to continue to support sewage treatment as they have always done and they resent and object to Federal dictates to impose new taxes. We subscribe to the theory of government which says that the voice of the people is the voice we represent and it must be heard.

We have a fine city and a people who are jealous of any infringement upon their liberty. Dictates are an infringement. This section of the act, because it does not allow for variance, is unfair.

We urge this committee in its deliberations and in the advice which it provides to the Congress that it should give very special consideration to the error it may commit by ignoring this simple instruction from a very loyal and dedicated people.

We would suggest a simple amendment of the Clean Water Act. The amendment would allow the EPA's Regional Administrator to waive the user charge provision under anyone of the following conditions:

One, if local government can demonstrate that the charge is not needed in order to generate sufficient revenues to properly operate and maintain the plant;

Two, if local voters reject the user charge provision on the local ballot;

Three, if the user charge provision would cause undue hardship on the local economy, and;

Four, if the local government can demonstrate that the problems related to trying to implement such a system outweigh the benefits.

Of course, the city of New Bedford is not alone in its opposition to the user charge provision. Many communities have given up needed Federal grants because of it. The local government has found the provision too restrictive. The voters have found the provision too offensive.

This should concern you.

These grants—which are supposed to help clean up the environment—are not reaching all the communities that need them because of these unnecessary regulations. In a sense, the environment is being threatened by the very law which is designed to protect it.

Something is wrong here. The environment should come first.

To deny our people the choice of how to fund their services is the simple beginning of the erosion of the right of all choice. Again, I urge the committee to allow in the law for some real latitude in the decisions of the EPA.

They know individual cases. They are trained and intelligent people. Let them use their talent. Let us make our choice.

Thank you very much.

If the chairman or other members have any questions.

Mr. ROE. Yes, I think your testimony is splendid.

The gentleman from Massachusetts.

Mr. DONNELLY. Thank you very much, Mr. Chairman, and thank you, Mr. Mayor, for your testimony.

I do not represent the fine and beautiful city of New Bedford, Mr. Mayor and I don't know the local politics. But in your testimony, you make allusion to the proportionate mix of real estate taxes on residential and industrial.

Is there some problem in terms of—and I know your problem with unemployment and economic development in New Bedford—is there some problem in the commercial industrial community with opposing a sewage user fee in terms of them moving out of the city or the loss of the potential mutation of economic growth?

Mr. LAWLER. Specifically, yes, that is one of the reasons that I am here before the committee.

New Bedford has a substantial supply of clean soft water. As a result of that, we attract to our area those industries that are high volume users. One of whom is the Goodyear Tire & Rubber Co., who makes presently in the city, a rubber insulated roof. They can make this competitively against foreign competition and they generate huge amounts of volumes of water. They have been very direct with us that if we charge them any type of an exhorbitant fee, all it is going to do is make them noncompetitive. We have special situations with them in the sense that while they use a tremendous volume of water, two-thirds of that water is used up in the manufacturing process. As a result, they generate a very small amount of water that they pump into our actual sewage system.

So we are placing some of our good companies at an unfair competitive advantage.

Mr. DONNELLY. Well, I suppose from the Federal side, the question is, how do we protect and guarantee our investment of Federal dollars into cities like New Bedford in terms of sewage, if we do not guarantee a funding mechanism for the operation and maintenance, along down that line, especially in States like Massachusetts, where the voters have placed a limitation on the amounts due to proposition 2½, a limitation on the amounts of revenues that you can raise, when you have the various groups all converging on your office demanding their share of a limited pie, the education lobby, the public safety lobby.

One of the concerns is that there is not a tremendous sewage lobby out there and we have to guarantee our investment, and that would be the Federal side, that would be our position on the Federal side.

Would you like to respond to that?

Mr. LAWLER. Well, the limitations of proposition 2½ were precisely the concern of the voter that it is believed by the voter that many cities are using the sewer user fee as a device to circumvent the limits of proposition 2½.

It was injected into our election and it was a pledge to the voters to continue to live within proposition 2½ or live within the limits of that; that was a substantial portion of my campaign.

The concern we then have is that if we are committed to live within those limits, and financially are capable to live within those limits, the city of New Bedford concluded the last budget year with a surplus of almost $1 million on a $78 million budget.

We are in fine, stable, solid financial shape. We can continue to fund and have funded for the past 8 years, fully funded, all the monetary needs for the sewage treatment plant.

But what we are saying now is that to comply with the Federal mandate, we must create a new taxing mechanism on one hand to provide the funds and at the same time, reduce from our general levy, that same like amount. So what we are creating is administrative nightmare to satisfy the wishes of our constituency.

See, we are being led by EPA to wade through a constitutional quagmire here of being forced to impose taxes we neither need nor the electorate has clearly stated it does not want.

Mr. DONNELLY. I understand very well the political problem because it has been a political issue in many of the cities that I represent in southeastern Massachusetts and the politics is difficult.

I would hope that you would provide the appropriate correspondence that you have received from the EPA regarding this and specifically any from your planning director or economic development director, an analysis of the economic damage in terms especially of Goodyear or any other industrial plants in your city, if that would be done, or communication that you have received from those companies, if you move forward and apply this sewage user fee.

Mr. LAWLER. Well, all we are really asking is that there be some mechanism in the law, that when you get a special type of situation, which like the city of New Bedford, which has an abundance of water that we sell cheaper than probably every community in New England, that we have in that type of a situation to suddenly inject, the tax structure to inject a new ingredient into the tax structure, to change the mix between the balances of all the forces, when we move the incidence of tax payment from exactly where it is now, we run the risk of putting our whole economic picture into disharmony.

Mr. DONNELLY. Let me congratulate—let me say in conclusion that I would like to congratulate you, Mr. mayor, for your surplus.

Again, on the Federal side we have to be guaranteed that the administrators of that city be as competent fiscally over the course of the next few decades as you have been in your terms.

Mr. LAWLER. We also offer to guarantee that in writing to the EPA that that will be a priority funding item for us.

Mr. ROE. As I understand the issues, so that we have it clear in our minds, what you are simply saying is, you are not debating the issue of whether or not New Bedford will pay its share in return of the Federal money.

Basically what you are saying along the line, if you choose in you community to include that cost within your municipal budget, you should have the prerogative to do so as long as your bring the responsibility back to the Federal Government; is not that basically it?

Mr. LAWLER. That is exactly correct.

Mr. ROE. And at the moment you are constrained from doing that, EPA says they are constrained because the law does not appear to allow them to recognize that particular municipal need, is that correct?

Mr. LAWLER. That is correct.

Mr. DONNELLY. The question—if I could reclaim my time, I think a further question is, what guarantees does the Federal Government have over the course of time that a proportionate amount of that tax money is going to be spent to maintain the operation and the continuation of the sewage treatment plant, and the facilities?

That is why in the law it is mandated that a set tax, dedicated fund, be set aside so that our investment is protected and there is a guarantee and the question of allowing exemptions, I think, ought to be clearly looked at, because it should not be used in a punitive way in situations such as the city of New Bedford, the loss of the major industry, but I would hope that the committee would look very carefully before we move forward and allow a broad across-the-board exemption for people not to set these fees and it is certainly very difficult situation to politically, on the local level, but there is a Federal mandate that we protect, that they pay their taxes and their W-2 forms to the Federal Government along with the local property tax.

Mr. PACKARD. Would the gentleman yield?

Mr. DONNELLY. I would be glad to yield.

Mr. PACKARD. I think that the point is that those guarantees that you speak of are in such a form that they mandate precisely how the money is to come about. I think that is what the mayor is concerned about, and in my judgment I think it is a justifiable concern.

I have to assume, Mr. mayor, that you are meeting the requirements of the Clean Water Act?

Mr. LAWLER. We are, and we have also signed a consent agreement with EPA in the terms of creating the billing in a manner which is satisfactory to them within the limits of the dictates of Congress. But my contention has been that the Congress has been focusing too hard on which pocket the funds should come from and we at the local level are just focusing on the particular taxpayer. We know that it is going to come from the same sources.

It is just we are asking that when there are special circumstances and justifiable, that the EPA can have that permission to grant that waiver.

Mr. PACKARD. I thank the gentleman for yielding.

Mr. DONNELLY. I have no further questions.

Mr. ROE. Any further questions of the mayor?

Mr. PACKARD. Just one, Mr. Chairman.

You referred to Goodyear, I believe it was Goodyear as one of your industries.

Mr. LAWLER. That is right.

Mr. PACKARD. And you have given them consideration to allow them to become economically stable in your community?

Mr. LAWLER. Yes.

Mr. PACKARD. Are they meeting the discharge requirements?

Mr. LAWLER. Yes.

They are, to us, a very good employer and a good neighbor.

Mr. PACKARD. But are they polluting your water supply?

Mr. LAWLER. No, they are not.

Mr. PACKARD. I see.

Thank you.

Mr. ROE. No further questions?

Mr. mayor I want to thank you very much for bringing your matter before us. We will give it every consideration. We appreciate your being here this morning.

[Subsequent to the hearing, the following was received from Mayor Lawler:]

CITY OF NEW BEDFORD, MASS.,
EXECUTIVE DEPARTMENT, OFFICE OF THE MAYOR,
September 22, 1983.

Congressman ROBERT A. ROE,
Chairman, House Subcommittee on Water Resources,
Washington, D.C.

DEAR CHAIRMAN ROE: It was my pleasure and privilege to appear before the Subcommittee on Water Resources this week to propose an amendment to the Clean Water Act (PL 95-217). I suggested that the law needs to be revised: it needs to add a provision allowing the Environmental Protection Agency (EPA) to waive a sewer use fee if such a waiver is justified.

At Tuesday's hearing, a committee member pointed out that the federal government must "protect its investment" by making sure that a mechanism is in place to provide sufficient funds to operate and maintain wastewater treatment plants which are constructed with federal dollars. I agree. But a sewer use fee is not the *only* viable mechanism.

In my City, our plant has been funded through the local real estate tax and no one—industry, commercial or residential—has complained. We wish to continue this practice. We are willing to place our financial commitment in writing. The law prohibits us from doing so.

We ask that you amend the Clean Water Act to allow New Bedford and cities like it to utilize alternative funding mechanisms if those mechanisms guarantee full funding and are approved by the EPA. Our request is a reasonable one and I urge you to give it your early consideration.

Thank you for the opportunity to appear before your committee to discuss this important matter. If I can answer any questions, do not hesitate to call me at 999-2931, extension 300.

Very truly,

BRIAN J. LAWLER, *Mayor.*

Mr. ROE. The Chair will now recognize Mr. David Delcour, who is chairman of the clean water ad hoc committee, Western Regional Council.

We want to welcome the gentleman to our committee.

You have a substantive statement. It will appear in full in the hearing record, if there is no objection.

The gentleman would please be kind enough to summarize, it will be helpful to us.

[Statement referred to follows:]

STATEMENT OF THE

WESTERN REGIONAL COUNCIL

Mr. Chairman and Members of the Subcommittee:

The Western Regional Council appreciates the opportunity to bring to the Subcommittee's attention five amendments the WRC proposes to the Clean Water Act. I am David Delcour, Vice President of AMAX, Inc. I am appearing here today as Chairman of the Western Regional Council's Clean Water ad hoc Committee.

The Western Regional Council was organized to provide a unified voice for the business community of the Intermountain West. Its membership is composed of chief executive officers of corporations representing a number of major industries in the Intermountain West. The WRC works to establish balanced policies which consider the benefits of both economic development and environmental preservation in the West.

Water is a critical commodity in the West; therefore, quantitative and qualitative water management is of significant importance to the Western Regional Council. The Clean Water Act is now before the Congress for reauthorization and the Western Regional Council supports the basic concepts of that Act. Although the Council supports the basic concepts of the Clean Water Act, the Council asserts that a nationwide "across the board" application of the Act results in certain provisions having a significant adverse impact on the West due to the unique features of western water (See Appendix A). The intent of the Council's recommendations is, therefore, not to change the basic concepts of the Act, but to provide the flexibility in implementation which is required for sound water management in the West. The Council's testimony will address five areas of the Act which, in the WRC's opinion, are in need of amendment.

POINT SOURCE DEFINITION

One of the chief purposes of the Clean Water Act is to regulate the discharge of harmful pollutants from industrial processes. However, the Act only regulates discharges from "point sources," which are generally defined as "discrete conveyances" such as pipes (Sec. 502(14)). The Act does not, for example, authorize EPA to regulate diffuse storm runoff or snowmelt running across an industrial facility. However, EPA has interpreted the term "point source" to include devices which gather, collect or otherwise divert stormwater runoff or snowmelt. As a consequence, mining and other industrial facilities that would have no obligation to treat diffuse stormwater runoff or snowmelt, but have constructed diversion structures to prevent diffuse storm runoff or snowmelt from contacting process areas and contacting toxic materials, are often required to obtain an NPDES permit requiring them to treat these waters. However, the Office of Surface Mining does require coal mines to collect

stormwater and these devices are classified as point sources regulated under the Clean Water Act. The 1977 amendments to the Clean Water Act require best management practices to control discharges of toxic materials. If stormwater device discharges are toxic, they would also be covered under this provision of the Act.

Impact on the West: The amounts of stormwater runoff and snowmelt in the mountainous areas surrounding western mining facilities are very large and the cost to treat this runoff is often prohibitive. Much of this stormwater runoff is not toxic and to require treatment of water not contaminated by the industry seems punitive.

Recommendation: Devices that merely divert or gather and collect storm runoff and snowmelt without adding to their contamination should not be considered "point sources" subject to EPA regulation. Including such devices in the definition of "point source" penalizes many companies for installing devices that serve to prevent or minimize pollution and were not required to be installed.

Amend Section 502(14) of the Act, 33 U.S.C. 1362(14), to read as follows:

> The term "point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissures, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft from which pollutants are or may be discharged. The term does not include return flows from irrigated agriculture or stormwater runoff. As used herein, "stormwater runoff" means discharges from conveyances or systems of conveyances (including pipes, conduits, ditches, and channels) primarily used for collecting and conveying precipitation runoff and which are not contaminated with process wastes, raw materials, toxic pollutants in excess of toxic pollutant effluent standards or prohibitions, hazardous substances in reportable quantities, or oil and grease.

This proposed language is generally consistent with the U.S. Environmental Protection Agency's November 18, 1982, regulatory proposal.

The Senate Committee on Environment and Public Works has seen fit to include similar amendments in its bill to amend the Clean Water Act. The WRC hopes this Subcommittee will also consider the inclusion of such an amendment.

Three brief examples of the problem of stormwater runoff devices being classified as point sources are as follows:

1. Hecla Mining Company's Lucky Friday No. 3 Tailings Impoundment in Mullan, Idaho has a diversion which parallels Interstate 90. It was constructed to prevent excessive water impoundment during periods of high runoff. If this is misconstrued as a point source discharge, a separate NPDES permit would be required.

2. At Hecla Mining Company's Republic Mine, Republic, Washington, the Department of Ecology is requiring a diversionary structure to be constructed around the Aspen Tailing Impoundment to prevent contamination of stormwater runoff. Once again, this discharge may require a permit if this section of the Act is not amended.

3. Hecla Mining Company's Sherman Mine, Leadville, Colorado, currently diverts spring runoff water around surface facilities in a 36" galvanized pipe. This water is discharged into a gulch below the mine site. The Colorado Department of Health, having jurisdiction over the NPDES program, requires that an NPDES permit be obtained for this discharge.

ZERO DISCHARGE GOAL

It is the goal of the Act that the discharge of pollutants into navigable waters be eliminated by 1985 (also known as zero discharge goal). The legislative history reveals that Congress never intended the zero discharge goal to be legally binding, but only a "target". The term pollutant is broadly defined under the act to include all waste regardless of quality (Section 502(6)). Therefore, regulatory bodies are interpreting the goal literally to mean that all discharges, including the return of reclaimed water from industrial and agricultural use, must be eliminated by 1985 regardless of quality. Thus, the "zero discharge" concept is moving the implementing sections and programs in the Act toward elimination of all discharges. In the Intermountain West, water basin compacts and surface water adjudications have been based on historical flows which include return flows after upstream water use. Also, many of the water users on such rivers as the Colorado are anticipating return flow credits in order to fulfill future water needs. However, as a result of the zero discharge goal, as interpreted by state and federal agencies, states are being compelled to abandon water rights. Relative to water quality concerns, states are again compelled to encourage consumptive

use regardless of the fact that water quality impact from returned waters would be negligible. This effectively results in the compromising of the policy in Section 101(g) to protect a state's right to allocate water quantities within its boundaries and manage its water based on both quantity and quality considerations.

Impact on the West: In the Intermountain West where many surface streams can reach zero flows during periods of the year, downstream water availability relies heavily on the return of water to the surface stream. For example, Arizona, in its Water Pollution Control Act, requires the regulatory agency, in adopting regulations concerning discharges, to "... be guided by the principle that waters of the State are put to beneficial use within the State and become return flows to the waters of the State and subsequently reused, and that such rules and regulations shall not diminish the water available for such beneficial uses, nor deprive the State of such water." (A.R.S. Section 36-1854 B). EPA Region 9 has refused to grant primary enforcement authority to the State of Arizona under the NPDES program. A major stumbling block in this delegation of authority has been this legislative policy which Region 9 believes conflicts with the zero discharge goal. The real goal should be to eliminate the discharge of pollutants in harmful quantities.

Recommendation: It is recommended that Section 101(a)(1) be amended to read as follows:

> "It is the national goal that the use and re-use of waters of the United States be achieved with the minimum increase of pollutants and that the discharge of pollutants in harmful quantities into navigable waters be eliminated by 1985."

The Senate Committee on Environment and Public Works dealt with this issue in the legislative history of the Committee's amendments to the Clean Water Act. The WRC would ask that this Subcommittee consider the acceptance of the WRC's recommendations. However, if this recommendation is not acceptable, the WRC would ask that this Subcommittee consider the Senate's legislative history language regarding this issue.

NAVIGABLE WATER DEFINITION

EPA's jurisdiction for regulation of water discharges under the Clean Water Act is confined to "navigable waters". The Agency, pursuant to court decisions, has defined the term "navigable

waters" broadly so as to include stream beds that: (1) have water in them only occasionally as a result of rains or snowmelt; (2) do not support fish, shellfish or wildlife; (3) do not provide water to downstream users; and (4) do not flow into other streams, rivers, or lakes.

As a consequence of EPA's broad definition of the term "navigable waters", sources that discharge into such stream beds are threatened with large capital and operating expense to meet the Agency's effluent limitations regulations, even though the discharges do not harm surface waters nor adversely affect water quality in other water bodies.

Unique Features of Western Waters: The definition of navigable waters at Section 502(7) is so broad that it encompasses nearly every water course in the United States, including many normally dry arroyos in the West. Because of this broad definition, the prohibition at Section 301 of the discharge of pollutants into waters of the United States without a permit applies to many streams which may not need this level of protection. In the arid western United States, there are streams which flow intermittently as a result of rain runoff or snowmelt, and when they do flow, do not empty into public bodies of water which need protection, do not support fish or wildlife and do not provide water for downstream users.

For instance, some industrial discharges are into streams which empty into desert playas which are in fact sealed basins where the water eventually evaporates. Most desert playas contain considerable naturally occurring salts and their waters are not used. Therefore, to require treatment of discharges into these playas is to require treatment for treatment's sake, since no use is made of the discharged water.

Recommendation: The definition of navigable waters (Section 502(7)) should be narrowed to exclude those bodies of water which have water in them only intermittently as a result of rain runoff or snowmelt, do not support fish, shellfish, or wildlife, do not provide water to downstream users, and do not flow into other water bodies.

NAVIGABLE WATERS AND WETLANDS

The overbroad definition of navigable waters also includes wetlands and requires that Section 404 Dredge and Fill permits not be issued unless specific steps have been taken to minimize adverse impacts on wetlands.

Impact on the West: As a result of court decisions and agency regulations, the definition of wetlands has been expanded to include "vegetation typically adapted for life in saturated soil conditions". In the West, this results in land temporarily saturated from snowmelt runoff and irrigation to fall under the jurisdiction of the Corps' 404 permit program.

In the spring, snowmelt and subsequent runoff causes streambeds to overflow and adjacent lands to be temporarily saturated. Wetlands-type vegetation appears even though the stream may be dry at other times of the year. This results in many areas adjacent to intermittent streams in semi-arid areas being considered wetlands. Even though activity on these areas or affecting these areas do not have an adverse effect on navigation or interstate water quality, permits are required for wetlands protection.

Furthermore, it is not uncommon to find that lands in western river valleys have been or are irrigated for either farming or grazing purposes. As a result of the temporarily saturated soil conditions from irrigation, wetlands-type vegetation occurs on the borders of irrigation ditches, as well as in irrigated pasture lands. Under the present law, no permit is required for the discharge of fill materials into an irrigation ditch, yet activity on the "adjacent" irrigated land may require a permit. In Appendix B you will find an example of where irrigated pastures and lands, only inundated in the spring as a result of snowmelt, are being required to have 404 permits.

Mining and energy development are often located in rural mountain valleys where either one or both of these temporarily saturated soil conditions exist. The impact of such development can be widespread if a major development is proposed or it can be very localized if a single building is constructed. In either case, the Corps' present practice is to require developers to apply for a 404 permit. To help mitigate the impact, the Corps will either deny the permit, require costly alternatives to the project, or require costly habitat replacement. This is objectionable not only because of cost, but because it assumes all wetlands, even irrigated pastures, are of equal importance and deserve the same degree of protection. Furthermore, it allows the Corps to assert jurisdiction in areas of traditional local and State authority.

Recommendation: The definition of navigable waters (Section 502(7)) should be narrowed to eliminate artificial and/or seasonal wetlands. This can also be accomplished by

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exempting certain wetland areas under Section 404. These exemptions should include:

1. Lands adjacent to streams that either flow or overflow as a result of runoff waters.

2. Lands adjacent to isolated lakes, potholes, arroyos, intermittent streams and other waters that are not part of a tributary system to interstate waters or navigable waters.

3. Land areas containing wetlands-type vegetation as a result of irrigation practices.

THE EFFECT OF WATER QUALITY STANDARDS ON WESTERN WATER

When Congress adopted the Federal Water Pollution Control Act Amendments in 1972, attention in both government and industry was focused on implementation of the NPDES permit program and the development of technology-based effluent limitation guidelines (i.e., BPT and BAT). The permit program is now in place and effluent guidelines have been adopted for most major industries. With these jobs out of the way, significant governmental effort is being directed back towards the Act's original, pre-1972 concern -- the development and protection of ambient water quality standards.

Section 303(c) of the Clean Water Act requires states to establish "water quality standards" for all "navigable waters" within their borders. These "standards" must consist of two things:

1. Designated beneficial uses for the waters; and

2. water quality criteria for those uses.

Once adopted, these standards must be submitted to EPA for approval. EPA must grant approval if the standards meet "the requirements" of the Act. If EPA "disapproves" any standard submitted to it, the concerned state must be given a reasonable amount of time to develop a substitute standard which then becomes federally enforceable.

The standards have a direct regulatory impact because of the role they play in the NPDES permit program. Section 301(a) of the Clean Water Act prohibits all discharges of pollutants to "navigable waters" except as authorized by an NPDES permit.

In turn, Section 402(a) of the Act requires these permits to "meet" certain minimum requirements. The most prominent of these, as discussed above, is the requirement that discharges reflect minimum levels of treatment technology, i.e., BPT and BAT. However, Section 302(b)(1)(C) of the Act also provides that:

> ...there shall be achieved..
>
> ***
>
> not later than July 1, 1977, any more stringent (effluent) limitation... required to implement any applicable water quality standard established pursuant to this Act...

In other words, dischargers must meet effluent limitations more stringent that BPT and BAT -- the technology-based standards -- if necessary to protect receiving water quality.

Impact on the West: Water quality standards are generally more stringent than technology-based effluent limitation guidelines, i.e. BPT and BAT. In wetter regions of the country, this disparity has little or no practical regulatory effect -- dilution flows generally enable technology-limited discharges to protect receiving water quality. Unfortunately, in perhaps the majority of cases in the arid west, industrial dischargers are asked to install treatment systems that are "better" than what EPA has defined as being "best". At a minimum, this creates confusion and uncertainty, and unreasonably increases the cost of compliance. At worst, it can lead to shutdowns, and prevent industries from locating or expanding their operations in desirable areas.

This breakdown in the regulatory process is the result of several practical problems in the way EPA and the states have implemented the standard-setting process:

1. In the course of preparing their proposals, standard-setting agencies totally ignore economic and technical limitations. Thus, their proposals fail to reflect any sort of meaningful planning.

2. Due to the absence of any advance correlation between water quality standards and effluent limitations, industries are unable to predict the economic consequences of the agencies proposals. Even if agencies consider economics in the standard-setting process, the

standard still would not adequately reflect practical economic concerns.

3. Furthermore, if meaningful economic information could be presented at standard-setting hearings, EPA limitations on the ability to elect against "fishable, swimmable" waters would render most data irrelevant.

In order to remedy this, industries and the States need to be allowed to consider economic issues to the permitting process without EPA disapproving such permits strictly on the basis of the "zero discharge", "fishable. swimmable" goals of the Act. For a more indepth discussion of the problem, the reader is referred to Appendix C. Appendix C contains a general example, one case study, and two examples which clarify this issue.

Recommendation: The solutions to the problems just discussed are very complex. Ideally, the existing standard-setting process should be modified to require a comprehensive, basin-wide water quality assessment, an assessment of the impact of proposals on dischargers, and a comparison of these impacts with regional planning goals. And, in fact, Sections 208, 303(e) and 304(a) of the Act suggest that such a modification would be consistent with the existing statutory scheme. However, as a practical matter, comprehensive hearings such as this are never held for the issues are too complex. Instead, each of the elements is addressed on a piecemeal basis.

In view of this situation, the most practical solution is probably to amend Section 302.

Section 302(a) of the Clean Water Act grants EPA the power to impose effluent limitations more stringent than those required under Section 301(b)(2) (i.e., BAT, BCT, and toxic pollutant effluent standards), if such limitations are necessary to protect public water supplies, agricultural uses, recreation, wildlife, fish, or shellfish. However, before taking such action, EPA must review the social and economic impact of the more stringent limitations. They cannot be imposed if there is "no reasonable relationship between the economic and social costs and benefits to be obtained . . ."

A new subsection should be added to Section 302 requiring a similar review for all water quality based effluent limitations, whether imposed by EPA under Section 302 or by a state under Section 301(b)(1)(C). In effect, this would allow dischargers to consider economic issues in permit proceeding, and eliminate the "Catch-22" that prevents any detailed considera-

tion of economic and technical issues until the discharger has worked though a compliance schedule.

The WRC also recommends that the statute be amended to ease EPA's restrictions on the state's ability to decide that "fishable, swimmable" waters are not desirable. In fact, as a matter of administrative policy, EPA is in the process of doing this. However, a statutory clarification would still be desirable for it would reinforce what EPA is now doing and it would prevent future administrations from reversing the policy.

The statute should be amended in two ways to accomplish this:

1. Amend Section 101(a)(2) to provide that the "fishable, swimmable" goal is only desirable if it can be attained in an economically reasonable matter.

2. Amend Section 303(c) to modify EPA's role in the review and approval of state water quality standards. Provide that EPA may only disapprove of a standard if it is totally unsupported by the record, and will have a substantial adverse effect on interstate water quality.

CONCLUSION

Mr. Chairman, the Western Regional Council appreciates the opportunity to present its proposed amendments to the Clean Water Act. Your considerations of the Council's views is appreciated.

APPENDIX A

DEFINITIONS OF SOME OF THE UNIQUE FEATURES OF WESTERN WATER

Playas

The large number of ephemeral desert lakes, pans, or playas in the West is reflective of the poorly defined drainage of the characteristically arid areas. Generally, a playa is a shallow, central basin of a desert plain in which water gathers after a rain and then evaporates. It has its own drainage basin, which is a closed system, and will not run into a main stream system. Specifically, the main types of desert-lake basins and their hydrologic significance are:

1. Tectonic Lakes. These are generally the largest and occupy the centers of depressed land areas. They tend to be the center of interior drainage systems, i.e., the area into which the adjacent land drains and has no surface outlet. Such lakes commonly date from earlier periods of heavier rainfall. Despite the rarity of surface flooding and the high evaporation losses, the water table is normally close to the surface. Such lakes are most common to the West.

2. Lakes Formed by the Poorly Defined Drainage. These lakes commonly occupy parts of former valleys which have become self-contained basins as the result of a changing climate. They may remain part of a former tributary systems, or they may be isolated from surface drainage. They are a form of barrier lake, dammed by the deposition of sediments left by the former valley or by the encroachment of windblown sands. They may be fed by surface flow or shallow groundwater from infiltration from the margins of the basins. They do not necessarily become collection points of subsurface drainage.

3. Lakes at Drainage Terminals. These are normally shallow basins of sediment deposition, at the end of or adjacent to major stream beds, fed by floodwater or by an outflowing branch of a river, i.e., a delta. They may be fresh or brackish, and are fed entirely by surface flow.

4. Lakes Formed in Uneven Surfaces of Wind Blown Deposits (Sand Dunes). These include shallow pans in dune swales or in hollows in a sand plain, and they may be fed by local runoff and seepage or by flooding. (The Handbook of Applied Hydrology, Ven Te Chow: Editor, 1964).

Intermittent Streams

Stream channels which carry water part of the year and are dry the other part, but which receive flow from the groundwater table when it is high enough, are called intermittent. (Streams: Their Dynamics and Morphology, Marie Morisawa, 1968).

Arroyos

An arroyo is a vertical-walled, flat-floored channel of an ephemeral stream in the semi-arid Southwest. (Dictionary of Geological Terms, American Geological Institute, 1962).

Ephemeral Streams

Ephemeral stream is a stream or a portion of a stream which flows only in direct response to precipitation. It receives little or no water from springs and no long-continued supply from melting snow or other sources. Its channel is at all times above the water table. (Dictionary of Geological Terms, American Geological Institute, 1962).

APPENDIX B

AN EXAMPLE OF THE NAVIGABLE WATERS AND WETLANDS PROBLEMS IN THE WEST

GUNNISON COUNTY, COLORADO

In December, 1980, the U.S. Corps of Engineers, Sacramento District, sent the following letter and map to Gunnison County showing "preliminary wetlands" in the county.

You will notice the the City of Gunnison is almost totally surrounded by what the Corps identifies as "primary wetlands." The problem is, indeed, as the Corps describes it in the fourth paragraph: "...the scope of the problem is enormous. Virtually all building sites around Gunnison are in a wetland and would require a permit for the placement of fill."

A March 6, 1981, letter from the Corps to the office of Senator Armstrong further clarifies this issue and is included in this appendix. However, contrary to the tone of the March 6 letter, as of June, 1981, this controversy was still unsettled and substantial progress toward a solution had not been made.

One of the ramifications of such a broad definition of what constitutes a wetland is to encourage the elimination of wetlands. Even if a site had been considered a wetland in the past, it would no longer be designated as such should irrigation cease and the land be dried.

The intent of presenting this example is not to debate the specific Gunnison County case but to show how the overbroad definition of navigable waters to include seasonal and artificial wetland areas seriously impacts the West.

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

REPLY TO ATTENTION OF SPKCO-O

22 December 1980

Gunnison County Commissioners
200 E. Virginia Ave
Gunnison, Colorado 81230

Gentlemen:

Inclosed, you will find a copy of a preliminary wetland map recently completed by personnel from our Grand Junction office. The maping is of the immediate Gunnison area.

The area cross-hatched on the map is primarily wetland. There may be small or isolated upland areas within the designated wetlands, but access to them would impact the wetlands. Under Section 404 of the Clean Water Act, a Corps of Engineers permit is required before dredged of fill material can be placed in "waters of the United States or their adjacent wetlands."

A recent inspection of the Gunnison area reveals that a great deal of filling is taking place, mostly in conjunction with new housing construction. Such filling in wetlands requires a Section 404 permit. The Corps of Engineers has the responsibility to enforce the provisions of Section 404 and can direct those who place dredged or fill material in wetland without a permit to cease and desist from such activities.

As you can see on the inclosed map, the scope of the problem is enormous. Virtually all building sites around Gunnison are in a wetland and would require a permit for the placement of fill. Because of the rapidly accelerated growth in and around Gunnison a large number of applications can be expected.

In order to avoid further problems in the area, we feel that is critical that the city, county, and the local Corps regulatory personnel meet at the earliest possible date and begin a process of evaluating the problem and implementing a solution. It is possible that a master development plan could be designed that would minimize the wetlands impacts and still allow Gunnison to grow and progress.

Please reply at your earliest possible convenience to our Grand Junction Regulatory Unit, 2784 Crossroads Blvd., Grand Junction, Colorado 81501, (303) 243-1199.

Sincerely,

G. M. PROMASCO
Chief, Construction-Operations Division

1 Incl
As stated

Gunnison for
Feb 3rd 1:45-?
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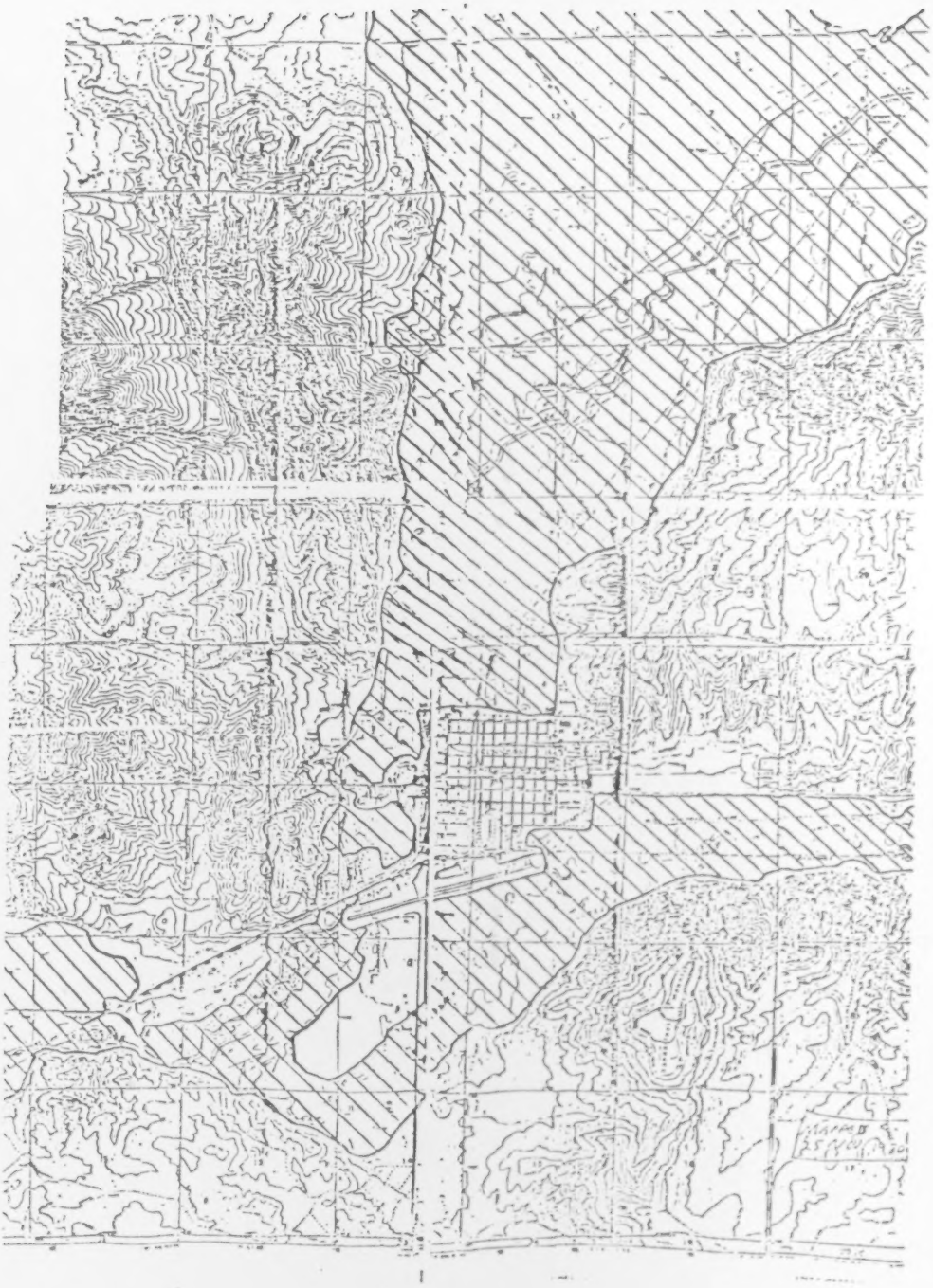

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO CALIFORNIA 95814

REPLY TO
ATTENTION OF SPKCO-O

6 March 1981

Mr. David Jensen
Senator William Armstrong's Office
United States Senate
Washington, D.C. 20515

Dear Mr. Jensen:

As you requested in a telephone conversation with personnel of our Grand Junction Regulatory Office, we are inclosing a copy of an Information Sheet on the wetlands situation in Gunnison County, Colorado. If we can be of further assistance or provide additional information, please do not hesitate to contact us.

Sincerely,

D. A. DENNIS
Chief, Construction-Operations
Division

1 Incl
As stated

INFORMATION SHEET

AREA DESCRIPTION: The area includes the Gunnison River Valley immediately surrounding the Town of Gunnison, Gunnison County, Colorado, Townships 49 North and 50 North and Ranges 1 West and 1 East. The area is adjacent to Tomichi Creek, on the south, and to the Gunnison River and Ohio Creek on the west and north. A large percentage of this area is irrigated pasture and supports the vegetative species indicative of wetlands. The area is typical of many Colorado wetland pastures, where the distinction between irrigation-caused wetlands and naturally occurring wetlands is difficult to determine. Regardless, the wetland meadows are adjacent to "waters of the United States" and are considered individual permit areas.

2. WORK DESCRIPTION: Several new construction projects, mostly housing developments, are occurring in the Gunnison area in the wetland pastures adjacent to the Gunnison River, Ohio Creek, and Tomichi Creek.

3. HISTORY: The Corps of Engineers has been active in Gunnison County since June 1977. During that time, the Corps has processed 13 Section 404 violations and issued a number of permits, including 4 projects under General Permits for Highway Construction, 6 under the General Permit for Stream Habitat Improvement, 7 Individual Permits, 14 Nationwide letters for Bank Protection, 2 for Work above the Headwaters, and 5 for Minor Road Crossings.

On 14 August 1980, personnel from our Grand Junction Regulatory Unit were making an inspection in the Gunnison area and noticed several new construction projects had been accomplished in wetland areas north of the Town of Gunnison. In addition, they determined that several proposals had been made for construction in wetlands along Tomichi Creek and the Gunnison River south and west of Gunnison. Upland building sites in the Gunnison area are scarce. The scope of activity made it apparent that building had to be allowed to progress somewhere. It was also evident that writing individual cease and desist orders would be impractical and, possibly, counter-productive, and that some kind of area planning effort was needed.

On the 24th and 25th of November 1980, personnel from our Grand Junction Regulatory Unit again visited Gunnison and accomplished a working preliminary map, outlining the problem wetland area in and around Gunnison.

On 22 December 1980, the Corps of Engineers sent a letter to the Gunnison County Commissioners and to the Gunnison City Manager explaining the wetlands problem in the area and asking that a meeting be held to evaluate the problem and determine a solution. A copy of the preliminary wetland map was inclosed with each letter. Similar procedures had been previously accomplished in other Colorado counties with satisfactory results.

Subsequent telephone conversations established 2 February 1981 as the best meeting time.

be held to evaluate the problem and determine a solution. A copy of the preliminary wetland map was enclosed with each letter. Similar procedures had been previously accomplished in other Colorado counties with satisfactory results.

Subsequent telephone conversations established 2 February 1981 as the best meeting time.

On 29 January 1981, the Gunnison County Times published a copy of the Corps' 22 December 1980 letter as well as the preliminary wetland map and an inflamatory editorial commentary on the Corps' involvement in the Gunnison area.

On 2 February 1981, Mr. Rodney Woods and Mr. Darrell Arnold attented the scheduled meeting in the Gunnison County Commissioners' Room. Approximately 100 concerned citizens, ranchers and developers were in attendance, a direct result of the 29 January issue of the Gunnison County Times. Because of the nature of the gathering, the scheduled planning session was postponed. Instead, the Corps personnel answered a two-one half (2½) hour drill of individual questions from the audience and two attorneys about general and specific applications of the 404 permitting process.

On 2 February 1981, a more objective newspaper article was published in the Gunnison County Times outlining the proceedings of the 2 February meeting.

On 4 February 1981, Mr. David Jensen of Senator Bill Armstrong's Washington office, called Mr. Darrell Arnold of the Corps' Grand Junction Regulatory Unit. Mr. Jensen mentioned several calls had been received from the Gunnison area. Mr. Arnold discussed with Mr. Jensen details of the Gunnison situation as described herein.

On 6 February 1981, the Crested Butte Chronicle published a balanced and accurate article on the 2 February meeting.

On 10 February, Mr. Rodney Woods, of the Grand Junction Unit, attended a meeting with city and county planners in Gunnison. The 404 program was again discussed and county planning maps were obtained to study for possible issuance of a general permit. The maps describe the planned concentrated areas of development, high water table areas, and soil conditions. The water table and soils maps show indications to wetlands that may help determine non-irrigated wetlands.

Gunnison County plans to double its population in the near future because Amax Inc. plans to open the Mt. Emmons Molybdenum Mine. Therefore, with environmental restrictions being considered, the likely concentration of development is in areas of existing community development which will be on irrigated wetlands.

Discussions with the city and county planners included the possibility of some detailed mapping which would separate areas, above the flood plain

and least valuable to wildlife and water quality, that could be covered by a general permit. Hopefully, such areas would be the wetlands which would return to upland without irrigation. Areas inside the wetland designation would require individual permits while areas in the general permit area would be conditioned to prevent tailings or materials likely to be a source of toxic materials to the water. City and county planners agreed to work out a system of notifying the Corps thru their review process when wetland permit problems become apparent.

In the specific instance of Gunnison County, it appears that there is really no practicable alternative to construction of housing developments in some of the irrigated wetlands.

The exact mechanism to accomplish this effort under the law has not been determined, but in discussion later in the day with county commissioners and the county attorney, the general consensus was that they could work within the legal framework of Section 404, if flexibility as described above is possible.

The meeting closed on a congenial note, and further meetings are expected. Most of the people upset by the first news article are calm and taking a wait and see attitude about what practical mechanism can be accomplished. However, many contacts were made to senatorial and congressional offices requesting that the law be changed. There are some attorneys preparing to pursue a law change.

APPENDIX C

EXAMPLES OF THE EFFECT OF WATER QUALITY STANDARDS ON WESTERN WATER

A GENERAL EXAMPLE

As a practical matter the standard-setting process has broken down -- at lease in the arid west -- because of the great frequency with which industries have been asked to install treatment systems that are "better" than what EPA has defined as being "best." At a minimum, this creates confusion and uncertainty and unreasonably increases the cost of compliance. At worst, it can lead to shutdowns and prevent industries from locating or expanding their operations in desirable areas.

This breakdown is the result of several practical problems in the way EPA and the states have implemented the standard-setting process. As a result of these problems, standard-setting agencies in the arid west tend to set ambitious goals that, more often than not, cannot be met though a reasonable level of control.

To better understand the problem, consider the following example. Suppose that State X has decided to establish water quality standards for all "navigable waters" within its borders. The first thing it will probably do is adopt "statewide" standards, applicable to all waters of the state. This was done by most states in the early and mid-1970's. The current impact of these standards is generally minor.

Next, the state will probably adopt a system for assigning more restrictive, site-specific standards.

For use classifications, the state will create a set of categories which describe beneficial uses of water, and which correspond more or less closely with identifiable criteria. Common examples are "water supply", "agriculture", "recreation", "aquatic life", etc. The state will also create a procedure for assigning these classifications.

For criteria, the state will probably adopt a table of maximum suggested pollutant levels for each standard use category. These criteria will be based on guidelines published by EPA pursuant to Section 304(a) of the Clean Water Act. The state will also sanction the adoption of less restrictive criteria (i.e., it will permit higher in-stream pollutant levels) if the designated uses are "in place", and "existing ambient conditions" support those uses. Having adopted this system, the state will begin the process of assigning standards to specific waters. First, it will probably subdivide the state geographically according to drainage basin. Next, it will assign a schedule for conducting standard-setting proceedings.

Suppose the state has elected to commence with the Y River Basin. It will first take a map of the basin and divide the

river and its tributaries into "segments", that is, areas designed to have a single set of standards. These are usually many miles long. Next, employees of the state will inspect each segment and propose classifications based on the uses they see in place, and any others that appear desirable according to local land use plans. Finally, they will propose numeric criteria to go along with the use designations. When this process has been completed for every segment in the basin, the state will propose the standards as an administrative rule.

For the purpose of this example, suppose that you are an industry located on a small tributary to the Y River. Let's assume that the tributary is about five miles long, and you are one of two industries discharging to this stretch of the stream. Upon reviewing the state's proposal you see that this segment (designated as Segment 4 of the Y River Basin) is to be classified as "Cold Water Aquatic Life -- Class I." Under the state's classifications scheme, this means that the stream should be capable of supporting a high quality cold water fishery. Upon reviewing the proposal further, you find that copper is the limiting parameter for this type of fishery. Thus, the state has proposed a numeric limit for copper of 0.005 mg/l. This is the "table number."

Upon completing your review, your first question is, "How will this proposal affect me?" After some reflection, you will probably conclude that you cannot tell. You know that the proposals might affect your ability to discharge copper, but you can't predict the likely extent of the effect. Under the best possible scenario, the proposal won't affect you at all, and your discharges of copper will be limited solely by BPT and BAT. Thus, for instance, if you are a mining company, your discharge will be able to contain 0.30 mg/l of copper as a daily maximum, and 0.15 mg/l as a 30-day average. Under the worst possible scenario, your discharge will only be able to contain 0.005 mg/l of copper -- sixty times more stringent than the daily maximum attainable with BAT.

In order to determine where in between these two extremes your discharge limit might fall, certain assumptions have to be made about available dilution flows, mixing zones, background loading from non-point sources, and allocation of the allowable daily waste load among the two point source dischargers. As a practical matter, these assumptions can only be determined after detailed negotiations with the state permit writer. However, upon calling the state, you discover that the permit writers won't be participating in this hearing -- the state's evidence will be limited to matters directly relating to ambient water quality, not the effect of the proposed standards on dis-

chargers. Furthermore, because of their busy schedule, the permit writers won't have time before the hearing to discuss the effect of the proposal on your discharge.

Placed in this situation, all you can do is assess the likely impact of alternate scenarios, i.e., what it might cost to meet different effluent limitations that might result from the proposal. Suppose you decide that certain scenarios will require the company to incur substantial additional expense. How do you oppose the proposal? The first thing you will probably do is conduct a review of uses on the stream -- in this case, the status of the aquatic life. You will probably find that the quality of this aquatic life is variable. For instance, a good fishery probably exists upstream of both discharges, but the diversity and population size declines noticeably in the vicinity of the first discharge. This fishery then recovers somewhat as you proceed downstream until you reach the second discharge, where very little aquatic life can be found. As you proceed further downstream to the end of the segment the fishery improves slightly, but it never attains the vigor of the upstream population.

Next, you will probably sample water quality at various points in the segment. It is likely that population levels will correlate inversely with the quality of the fishery -- i.e., copper will be low above both discharges, increase noticeably in the vicinity of the second discharge, and then recover slightly as you near the end of the segment.

In light of this evidence, you will probably argue that the proposed standard should be rejected because it fails to accurately reflect existing conditions, at least for the segment as a whole. However, this argument is almost sure to fail, for the following reasons:

1. The standard-setters will point out that a high quality fishery does, in fact, exist in some parts of the segment.

2. Based on this fact, they conclude that a high quality fishery could exist throughout the entire segment if it weren't for the two industrial discharges. In this regard, they interpret "existing ambient conditions" to refer not to the conditions that actually exist in the stream, but to conditions that <u>would</u> exist in the absence of man-made discharges.

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3. In light of this situation, they conclude that the higher standard should be considered the "norm". (See 43 Fed. Reg. 29589, July 10, 1978). They suggest that they will adopt "relaxed" standards only if the higher standards are "unattainable" technically, or because they would lead to severe economic dislocation because of plant closures.

When you ask for the source of this latter policy, the standard setters will almost surely point to EPA's grant regulations, 40 CFR Part 35, and the process by which standards are reviewed by the agency. It is likely that the state water program is funded largely though EPA grants. Since implementation of EPA's "fishable, swimmable" policy has traditionally been a grant requirement, it is unlikely that the state will risk the loss of federal money by refusing to go along. This puts you in a dilemma. You probably can't prove that the standards are "unattainable," because you don't know the precise immpact they will have on your discharge permit. Furthermore, even if you could predict these impacts, it is unlikely you could show that the standards were "unattainable" -- it is more likely you would simply think them to be unreasonable. Thus, it is likely that the higher standard will be adopted.

Suppose the higher standard is, in fact, adopted. What happens next in the permit proceeding depends on the precise relationship between your discharge, other discharges, and streamflow conditions. If streamflows are typically high in relation to discharge flows, as they often are in wetter regions of the country, then the standards will have little or no impact. For instance, if the average flow of your discharge is 10 cfs, and the Y River rarely flows less than several hundred cfs, you discharge will be limited by BAT. However, receiving streams in the arid west generally suffer extended low flow periods. Thus, effluent limitations for major industries more often approach water quality standards than BAT guidelines.

What happens when a state proposes these low effluent limitations, which are generally beyond the discharger's existing treatment capacity? Section 302(b)(1)(C) of the Act suggests that if the limitations cannot be met, the source should be shut down. In a classic "Catch-22", economic issues generally cannot be raised during the permit process. The results are rarely so draconian, but they can nonetheless be costly. Generally, permit writers will devise a "compliance schedule" for meeting the water quality based limits. This can have one of two effects. If the discharger elects to go ahead and install the requisite treatment, he will retain his right to discharge, but he will have spent a lot of money in a manner that

is unlikely to be cost-effective. If the discharger decides that he can't meet the limits, then the dispute has only been delayed. Upon expiration of the schedule, the discharger must once again attempt to change the underlying standards, using new information he has generated during its term.

As noted above, it is not necessarily unreasonable to make dischargers comply with water quality based effluent limitations. Thus, compliance schedules aren't always objectionable. However, in the arid west, perhaps the majority of major industries are required to investigate the use of technologies that are "better" than "best". This practice is wasteful, and strongly suggests that economic and technical limitations are inadequately addressed in the standard-setting process.

TWO SPECIFIC EXAMPLES

A. Hecla Mining Company's Star Mine facility, Burke, Idaho (currently shut down), faced a problem in obtaining renewal of an NPDES permit where a variance had been requested for copper from water quality standards and BPT limitations. Although Hecla Mining Company followed all conditions prescribed in existing regulations, we were unable to achieve prescribed standards. EPA analyzed the data on copper within our effluent and concluded that there was substantial correlation to indicate the formation of a complex ion that could not be removed by normal precipitation practice. Although this complex was much less toxic than copper in the free form, EPA would not grant a variance from existing regulations. An adjudicatory hearing plagued Hecla for six years, until the Star Mine faced final closure. This strict adherence to arbitrary standards was a contributing factor in the closure of the Star Mine.

B. Waters emanating from Hecla Mining Company's Sherman Mine, Leadville, Colorado, consist of natural snowmelt. This water has been monitored since 1973, and meets Colorado drinking water standards, since the water is used as a source of public drinking water.

The Colorado Department of Health currently issued an NPDES permit using the receiving stream's water quality standards as permit parameters. These standards are approximately equivalent to detection limit values. Years of data indicate that the receiving stream will never meet these standards, yet Hecla Mining Company is forced to either comply with these arbitrarily set standards or litigate the case. Costs in either case are prohibitive for a mine that has been closed for one year due to economic hardships.

CASE STUDY OF PERMIT LIMITATIONS BASED ON WATER QUALITY STANDARDS

RICO PROJECT
January 1983

The Rico property was purchased by Anaconda Minerals in 1980 as an exploration site. A mine water discharge is associated with the site and is covered by a Colorado NPDES permit. The permit limitation for zinc was not being met. The permit in force at the time contained a zinc limit of 1.0 mg/l maximum and a 0.5 mg/l average. The State issued a Notice of Violation including a requirement that Anaconda Minerals submit a program to bring the discharge into compliance. Anaconda performed treatability studies and proceeded with conceptual design and detailed engineering for a water treatment plant. This NPDES permit expired on December 31, 1981; the new proposed permit (renewal) contained a water quality based standard for cadmium. Monitoring by Anaconda for silver and mercury was also proposed by the Agency for possible insertion of a permit limitation (at the Agency's discretion) for these metals at a later date. The proposed effluent limitations for each of these parameters are shown below:

Cadmium	0.0004 mg/l
Mercury	0.00005 mg/l
Silver	0.0001 mg/l

These limitations are based on calculations which assume that the maximum flow from the water treatment plant as designed will occur simultaneously with the minimum flow (Q7-10) in the Dolores River. Existing in-stream concentrations for the various parameters, which are the basis for the Agency's proposed effluent limitations, were obtained from a water quality survey performed by Anaconda.

Anaconda is presently attempting to negotiate changes in the proposed permit. Major points of discussion are:

- Permit does not consider <u>actual</u> flow conditions, i.e. ratio of flow from discharge vs. flow in the Dolores River (maximum mine discharge rate normally corresponds to maximum stream flow, rather than the opposite).
- Technology does not exist to achieve the removal required.
- Concentrations are at or below analytical detection limits.

It should be noted that aquatic insect studies show no impact of the existing discharge on the benthic community in the receiving stream. Since the water treatment plant will reduce the zinc concentration (which now reaches 6.0 mg/l on some occasions) in the effluent to less than 0.5 mg/l and should reduce the cadmium concentration by about 50%, any potential impact of the discharge on the river system should be reduced dramatically.

This is an existing discharge and through additional in-stream sampling and discussions, we may be able to reach agreement on a revised cadmium limitation; this is unlikely in the case of mercury and silver. If this were a new facility, this problem could prevent the project from being constructed.

A basic question is: Should a regulatory agency have the right to put into a permit effluent limitations which cannot be measured and which are not achievable by applicable treatment methodologies?

Also, should any company be required to spend well in excess of $1.0MM on a treatment facility knowing that the facility cannot meet all of the applicable effluent limitations and that the company will have to apply, soon after construction, for a variance for the new treatment facility?

Mr. ROE. Please proceed.

TESTIMONY OF DAVID DELCOUR, CHAIRMAN, CLEAN WATER AD HOC COMMITTEE, WESTERN REGIONAL COUNCIL

Mr. DELCOUR. Thank you, I will.

Mr. Chairman, my name is David Delcour. I am vice president of the Climax Molybdenum Co., a division of Amax, Inc. My testimony today, however, is in behalf of the Western Regional Council.

The Western Regional Council was organized to provide a unified voice for the business community of the Intermountain West. Its membership is composed of chief executive officers of corporations representing a number of major industries in the intermountain west. The organization seeks balanced policies which consider the benefits of both economic development and environmental protection.

The Western Regional Council has already submitted to the committee staff extensive testimony together with a rather lengthy position paper and case studies illustrating our concern and I appreciate your willingness to include that in the full record.

Mr. Chairman, water is a critical commodity in the West. Quantitative and qualitative water management is of significant importance to the Western Regional Council. We, therefore, support reauthorization of the Clean Water Act. In doing so, however, we urge several revisions to the act which, if adopted, will make it more responsive to certain unique features of western water. The intent of our recommendations is not to change the basic concepts of the act, but to provide the flexibility in implementation which is required for sound water management in the West.

Our written testimony addresses five areas in which we believe amendments to the act would be appropriate and helpful. Two of the proposals deal with section 404 of the act. Those two proposed

amendments seek to exclude intermittent streams from the definition of navigable waters and land temporarily saturated due to snowmelt runoff and irrigation from the definition of wetlands. In many parts of the arid west we have streambeds that only occasionally have water in them. They do not support fish or wildlife. Nor do they flow into other streams or provide water to downstream users. The same could be said for artificial and seasonal wetlands. The 404 permitting process ought not apply to these types of water. Court decisions however, have broadened section 404 to include regulation of intermittent streams and artifical and seasonal wetlands. To overcome this, some narrowing of the definition of "navigable water," found in section 502(7) of the act would be appropriate.

Of our remaining three proposals, two are rather easily stated and I will deal with them just very briefly.

We believe that storm water runoff devices should be excluded from the definition of point source contained in section 502(14) of the act in those cases where such runoff is uncontaminated. EPA has interpreted the definition of point source to include devices which gather, collect, or otherwise divert storm water runoff and snowmelt. Thus, naturally flowing surface runoff water becomes subject to the NPDES permit program. Defining such devices as point sources penalizes companies for installing devices which they were not required to install and which, in and of themselves, prevent or minimize pollution. Our full statement includes some brief examples demonstrating the need for the modification we propose to the point source definition.

Our next recommendation relates to the Clean Water Act's zero discharge goal. I do this with some trepidation because I know for many this is the keystone of the entire act.

Nevertheless, as the goal is being interpreted by at least one region of the EPA, some modification or clarification appears to be necessary. Specifically, the Western Regional Council recommends that the zero discharge goal be changed to read: "The discharge of pollutants in harmful quantities be eliminated by 1985." Arizona law, like that of most Western States, provide that the waters of the State are to be put to beneficial use within the State and become return flows to the waters of the State and subsequently reused. Rules and regulations shall not diminish the water available for such beneficial uses nor deprive the State of such water. EPA's region 9 office has cited this provision of Arizona law as a basis for refusing to delegate the NPDES permit program to the State. While we are not aware of any other EPA region taking a similar view of the existing act, we do believe the matter is sufficiently serious to be addressed in Clean Water Act amendments.

At the very least we would suggest clarifying report language of the sort recently agreed to by your counterparts in the Senate.

Our final proposed amendment deals with a considerably more complicated aspect of the Clean Water Act, the effect of water quality standards on western water. Water quality standards are generally more stringent than technology based effluent limitation guidelines, either BPT or BAT. In wetter regions of the country this disparity has little or no practical regulatory effect since high stream flows generally dilute the technology limited discharges to

meet the receiving water quality standards. Unfortunately, in perhaps the majority of cases in the arid West, and because of low natural flows, industrial dischargers are asked to install treatment systems that are better than what EPA has defined as being best. At a minimum, this creates confusion and uncertainty and unreasonably increases the cost of compliance. At worst, it can lead to shutdowns and prevent industries from locating or expanding their operations in desirable areas. To remedy this situation, the Western Regional Council believes that in considering NPDES permit applications, where treatment beyond BAT is to be required, States should be allowed to consider economic issues without running the risk of EPA disapproval. At the present time, EPA disapproval under these circumstances would be almost a foregone conclusion under the theory that a water quality limited permit which considered economic factors would not meet the minimum requirements of the act as required by section 402(A). While current law does allow economic factors to be considered in the setting of water quality standards, adequate information invariably will not be available until the impact of the standard is reflected in a proposed permit. Then, it is too late to consider economic factors. One way to deal with this problem, and I am sure there are others, would be to amend section 302 of the act.

That section already requires the EPA Administrator to consider economic costs and benefits in the imposition of effluent limitations more stringent than BAT. By amending section 302 to require a similar review for all water quality based effluent limitations when treatment beyond BAT is to be required, whether imposed by EPA or by a State under section 301, we believe the catch-22 which I have briefly described, and which is more fully described in our position paper, could be eliminated. The approach we have suggested has the additional advantage of avoiding the emotionally charged debate on the question of downgrading water quality standards.

Mr. Chairman, this concludes a summary of my testimony.

I appreciate your consideration for the points we have to make.

Mr. ROE. I want to thank the gentleman for his comprehensive testimony and we will look into what you have, you know, your paper has developed.

I have read part of it myself.

Are there any questions for the gentleman?

The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

Mr. Delcour, your first suggested change related to the definition of "point-source" addresses devices that merely divert, gather, or collect storm water runoff or snowmelt.

On page 3 you give three brief examples to illustrate the need for amending the definition.

For each of these examples, could you please describe the physical characteristics of the diversion and diversionary structures that you mentioned?

Are they dams, levees?

Mr. DELCOUR. I have not seen these particular Hecla Mining Co. facilities described. I am familiar generally with the types of structures and typically we are talking about a system of canals built above an industrial property such as a mine or mine tailing im-

poundment area, which take the natural snowmelt runoff, bring it around the industrial property, prevent that water from coming in contact with the process water and discharge it into the stream below the industrial site.

Mr. STANGELAND. On page 3 you also mentioned regulatory bodies are interpreting the act's zero discharge goal literally to mean that all discharges must be eliminated by 1985 regardless of quality.

Could you please expand on this statement a little more fully?

Mr. DELCOUR. Well, that is reference to EPA region 9's refusal to permit the State of Arizona to administer the NPDES program in that State.

Mr. STANGELAND. Is it just Arizona or just region 9?

Mr. DELCOUR. In region 8 this view has not been taken. Among the States in which Western Regional Council members operate, Arizona is the only State in region 9. I cannot speak to other parts of the country, I am sorry.

Mr. STANGELAND. Your third change suggests a change involves amending the definition of navigable waters.

You mention normally dry arroyos and desert playas as being examples of water bodies that should not be included in the definition.

What environmental values do these arroyos and/or playas have and to what extent does water collect in these water bodies recharge or resupply ground water or aquifers?

Mr. DELCOUR. I am not sure I'm capable of answering the question on recharge. I would be happy to try to develop some information on that and provide it to you within the next few days.

Mr. STANGELAND. For the record, that would be fine.

[The information requested is incurred in Mr. Delcour's supplement, see question 3, p. 447.]

Mr. STANGELAND. Your fifth proposal relating to water quality standards suggests that the standard-setting process should involve illustrations of technical and economic feasibility. On page 9 you state that, in order to remedy this, industries and the State need this to be allowed to consider economic issues to the permitting process without EPA disapproving such permits strictly on the basis of the zero discharge, and fishable, swimable goals of the act.

Now, how in your view would EPA and the State go about implementing the suggestion and at what point in the standard-setting process should considerations of technical and economic feasibility be considered?

Mr. DELCOUR. They are presently considered in the standard-setting process. The problem is that when standards are set, when a State regulatory body goes through a rulemaking procedure, it does not have information available to it to thoroughly evaluate the economic consequences. It is only when water quality based limits are backed into new permits, that the economic impact can be evaluated. The problem is at that time, the economic factors may not be considered and that is where we believe they should be considered, but may not be under current law.

Mr. STANGELAND. Now, the act's current fishable, swimable goal is not an absolute but rather one which is to be achieved wherever attainable.

Why is not this language sufficient to enable the agency to adequately consider economic and technical feasibility questions in the standard-setting and permit-issuing processes?

Mr. DELCOUR. I do not know.

I do know that the agency argues that it may not do that.

Mr. STANGELAND. You may want to consider that and expand on it for the record.

In fact, Mr. Chairman, we might want to submit the questions to the gentleman for his perusal and then respond through writing.

[The information is included in Mr. Delcours' supplement, see p. 445.]

Mr. ROE. Yes, I was going to suggest that it would be a good idea because I think you're making a couple of telling points here that we ought to get into, particularly when they are not point source issues.

So if you would submit that to us we will take another look at those items.

Mr. DELCOUR. We will be happy to do that.

Mr. ROE. Are there any other questions for the gentleman?

We want to thank you very much for your substantive testimony. We appreciate your taking the time to be with us this morning.

[The following was received from Mr. Delcour:]

QUESTIONS AND ANSWERS FOR WATER RESOURCES SUBCOMMITTEE

FROM: DAVID W. DELCOUR, CHAIRMAN
WESTERN STATES WATER COUNCIL
WATER COMMITTEE

Q. Mr. Delcour, your first suggested change relating to the definition of "point source" addresses devices that merely divert, gather and collect storm water runoff or snowmelt. On Page 3 you give three brief examples meant to illustrate the need for amending the definition. For each of these examples, would you please describe the physical characteristics of the "diversion" and "diversionary structures" that you mention?

A. Mining facilities are located in different terrain therefore requiring varying designs for site and tailing pond structures. Generally, however, mines located in narrow mountain valleys where large snowfalls occur, experience major water runoff in Spring and early Summer Mine operators often voluntarily construct diversion structures around the mine site and tailings ponds to prevent large amounts of nonpoint source water from running through the mine processing area and tailings. In some cases, states have required the diversion structures. (See example No. 2 below.) These diversions are often pipes, ditches or cement lined byways which carry only natural or nonprocess water. They are not impoundments that collect and store water but merely channel natural flows away from the mine site. In the case of a narrow, steep incline the diversion site uphill from the mine facility or in more level terrain, is on the outside perimeter of the site. The runoff water is normally discharged in the stream below the facility or may parallel a road, to prevent erosion, and be discharged at a further downstream point. The diversion serves two purposes; it keeps the facility from being flooded at high water stages and it prevents the contamination of natural runoff with process mine water. It is a preventive, often voluntary measure that does not warrant an NPDES permit.

Physical Characteristics of Each Diversion

A. Hecla's Lucky Friday No. 3 - The mine and mill tailings are situated in a narrow mountain valley. The interstate highway drops from the top of the pass, and is located above the Lucky Friday tailing pond. The State of Idaho has constructed a ditch above the highway to collect and divert runoff and to prevent erosion; the ditch drains into the creek miles below. Similar to the State, Hecla has constructed a ditch below the highway but above the tailings pond. Both diversions were constructed for the same

purpose. Hecla's, however, is considered a point source discharge so an NPDES permit is required.

B. Republic Mine, Washington - The State is requiring the Company to construct diversion ditches and a concrete spillway to accommodate the 10 day, 24 hour maximum flood requirements. The diversion redirects water above and around the surface impoundment where it is discharged through the spillway to the stream.

C. The Sherman Mine, Leadville, Colorado - Large amounts of snowmelt runoff flow above the mine through a talus slope, which is natural rock debris at base of cliffs. The water continues through the mine, into a 36" galvanized pipe which carries it through the tailings pond and into other talus slopes below. It eventually flows into the Arkansas River. The State has required an NPDES for the discharge of this natural runoff water.

Q. On Page 3 of your statement, you mention that regulatory bodies are interpreting the Act's zero discharge goal literally to mean that all discharges must be eliminated by 1985 regardless of quality. Could you please expand on this statement a little more fully? What regulatory bodies are you referring to? Do you have additional examples beyond the one provided on Page 4 further describing the situation that you feel needs to be addressed?

A. EPA has questioned several western states regarding their ability to administer the NPDES program in light of their state water laws. Most water short Rocky Mountain state statutes are based on the principle of diverting water from streams for beneficial uses, i.e., irrigation, industrial processes, power generation, and require that water be returned to the stream for downstream uses. This appropriation system of obtaining a right to use water is a policy concern to EPA. They believe it conflicts with the zero discharge goals of the Clean Water Act if an NPDES permit or any other requirement to diminish flow is required.

Enclosed is a letter from David Jones, Regional EPA, San Francisco, which states that one of the reasons Arizona can not receive NPDES program jurisdiction is the "prohibition of zero discharge" requirements found in the Arizona State water statutes. The State of Colorado has received a letter from Region 10 expressing the same interpretation of state water law vs. the Clean Water Act's zero discharge goal.

If such goals or policies are interpreted literally, major conflicts will undoubtedly occur and the efforts of the states and EPA to continue the progress made in cleaning up and protecting the nation's waters will be impeded. WRC suggests that resolution of such conflicts can best be addressed in the context of specific permit proceedings which take into account individual circumstances that may vary widely.

Report language has been included in the Senate Report 98-233 to this effect, page 4, the language referring to Section 101(g).

Q. Your third suggested change to the Act involves amending the definition of navigable waters. You mention "normally dry arroyos" and "desert playas" as being examples of water bodies that should not be included in the Act's definition. What environmental values do these arroyos and/or playas have? To what extent does water that collects in these water bodies recharge or resupply groundwater aquifers?

A. By definition, arroyos and playas typically do not recharge acquifers.

Geologically, arroyos are the physical channels of an ephemeral stream in the semi-arid west. The stream flows from direct precipitation and has no long-continued supply. Therefore it is not considered a supply or recharge source for groundwater.

Similarly, playas are desert lakes, ephemeral in nature. They are dried, arid, clay layered depressions on beds at the lowest point of a given desert area. As such, they are impermeable and precipitation evaporates rather than feeding into the groundwater. Often times, such desert "intermittent" lakes are saline as a result of the salt deposited from years of evaporation in the lake bed. They are rarely potable.

(See WRC testimony Appendix A, for a more detailed description of the arroyos and playas.)

Q. Your fifth proposal relating to water quality standards suggests that the standard-setting process should involve considerations of technical and economic feasibility. On Page 9, you state that "in order to remedy this, industries and the states need to be allowed to consider economic issues to the permitting process without EPA disapproving such permits strictly on the basis of the zero discharge and fishable/swimmable goals of the Act". How, in your view,

would EPA and/or the state go about implementing this suggestion? At what point in the standard-setting process should considerations of technical and economic feasibility be considered?

A. WRC has specific suggestions on how the "catch 22" dilema of economic considerations in water quality based permits can be remedied. Three points are important in order to understand the WRC recommendations.

1) The problem lies in the stringent water quality based effluent limits - limits required in permits more stringent than BAT.

2) Even though some economic considerations are allowed in the standard setting process under Section 303, the economic test is not adequate to allow downgrading - one way of reducing effluent limits in a water quality based permit.

3) Once standards are set, the law does not allow economics to be considered at the permit stage - yet this is the only stage where an applicant and EPA can determine what the technology requirements and the costs will be to meet the effluent limits established for that facility in the permit.

WRC recommends one method of solving the problem; amend Section 302 to allow the states to use the already established cost-benefit test at the permitting stage for all water quality based permits.

Section 302 already allows the Administrator to set effluent limits that "reflect a reasonable relationship between the economic and social costs and benefits to be attained." While this allows an applicant to have economics considered in his permit, it has two serious flaws.

1) No Administrator has used Section 302 and there is no ability for the states to use it even though they have been delegated the permitting authority under the Act.

2) The economic test only applies to effluent limits established by the Administrator, not those established by the states under Section 303.

Since Congress required that economics should be considered at the permitting stage if effluent limits are water quality based, it is logical to allow the state to consider economics in the permit process when the same conditions exist. EPA still retains permit veto power under Section 402(d).

WRC recommends the following amendment to Section 302 which extends the provisions to state established water quality based effluent limits.

Amend Section 302(a) to read as follows:

Whenever, in the judgment of the Administrator **or a state water pollution control agency**, discharges of pollutants from a point source or group of point sources, with the application of effluent limitations required under section 301(b)(2) of this Act, would interfere with the attainment or maintenance of **water quality standards adopted pursuant to Section 303 of this Act,...** effluent limitations (including alternative effluent control strategies) for such point source or sources shall be established which can be reasonably expected to contribute to the attainment or maintenance of such water quality.*

Amend Section 302(b) to read as follows:

(1) Prior to establishment of any effluent limitation pursuant to subsection (a) of this section, the Administrator **or the state agency proposing to adopt the effluent limitation** shall issue notice of intent to establish such limitation and within ninety days of such notice hold a public hearing to determine the relationship of the economic and social costs of achieving any such limitation or limitations, including any economic or social dislocation in the affected community or communities, to the social and economic benefits to be obtained (including the attainment of the objective of this Act) and to determine whether or not such effluent limitations can be implemented with available technology or other alternative control strategies.

(2) If a person affected by such limitation demonstrates at such hearing that (whether or not such technology or other alternative control strategies are available) there is no reasonable relationship between the economic and social costs and the benefits to be obtained (including attainment of the objective of this Act), such limitation shall not become effective and the Administrator **or the state agency proposing to adopt the effluent limitation** shall adjust such limitation as it applies to such person.

Amend Section 301(b)(1)(c) to read as follows:

(C) not later than July 1, 1977, any more stringent limitation, including those necessary to meet the requirements of section 302, treatment standards, or schedule of compliance, established pursuant to any State law or regulations, (under authority preserved by section 510) or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this Act.

It should be noted, however, that the recently passed Senate Bill, S. 431 (S.R. 98-233), amends Section 302 to read as follows:

Sec. 302.(a) Whenever, in the judgment of the Administrator, or as identified under section 305(c) discharges of pollutants from a point source or group of point sources, with the application of effluent limitations required under section 301(b)(2) of this Act, would interfere with the attainment or maintenance of that water quality in a specific portion of the navigable waters which shall assure protection of public health, public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water, effluent limitations (including alternative effluent control strategies) for such point source or sources shall be established which can reasonably be expected to contribute to the attainment or maintenance of such water quality.

(b)(1) Prior to establishment of any effluent limitation pursuant to subsection (a) of this section, the Administrator shall publish such proposed limitation and within ninety days of such publication hold a public hearing.

(2)(A) The Administrator, with the concurrence of the State, may issue a permit which modifies the effluent limitations required by subsection (a) of this section for pollutants other than toxic pollutants, if the applicant demonstrates at such hearing that (whether or not technology or other alternative control strategies are available) there is reasonable relationship

between the economic and social costs and the benefits to be obtained (including attainment of the objective of this Act) from achieving such limitation.

(B) The Administrator, with the concurrence of the State, may issue a permit which modifies the effluent limitations required by subsection (a) of this section for toxic pollutants for a single period not to exceed five years, if the applicant demonstrates to the satisfaction of the Administrator that such modified requirements (1) will represent the maximum degree of control within the economic capability of the owner and operator of the source, and (2) will result in reasonable further progress beyond the requirements of section 301(b)(2) toward the requirements of subsection (a) of this section.

This change limits the existing statute and for two reasons does not accomplish WRCs objectives.

First, it does not grant the states the ability to use Section 302. Furthermore, it limits permits that have toxic pollutant effluent limits to only a single five-year exemption. For mining facilities, permits contain effluent limits for metals which are considered toxic under Section 307 of the Clean Water Act regardless of the concentration. The Senate action makes Section 302 effectively off limits to western businesses located in mountain areas where natural background levels are higher in mineral content. These are areas where higher quality streams are located and likely to be required to treat beyond BAT. Furthermore, the language is inconsistent with Section 101(a)(3), the goal settings section, where it is the "national policy that toxic pollutants are to be eliminated in toxic amounts."

WRC suggests the Senate language be amended as follows to remain consistent with the Act:

1. Amend Section 6(e)(2) of S. 431 (Senate Report 98-233) to read as follows:

   Section 302(b) of the Clean Water Act is amended to read as follows:

   "(b)(1) Prior to establishment of any effluent limitation pursuant to subsection (a) of this section, the Administrator shall publish such proposed limitation and within ninety days of such publication hold a public hearing.

(1)(A) The Administrator, with the concurrence of the State, may issue a permit which modifies the effluent limitations required by subsection (a) of this section ... if the applicant demonstrates that TOXIC POLLUTANTS WILL NOT BE DISCHARGED IN TOXIC AMOUNTS, and (whether or not technology or other alternative control strategies are available) there is no reasonable relationship between the economic and social costs and the benefits to be .... ATTAINED (including attainment of the objective of this Act) from achieving such limitation.

(B) ...(unchanged) ....

Q. The Act's current fishable/swimmable goal is not an absolute goal, but rather one which is to be achieved "wherever attainable". Why isn't this language sufficient to enable the agency to adequately consider economic and technical feasibility questions in the standard-setting and permit-issuing processes?

A. The Act's current fishable/swimmable goal, should not be an absolute, but is treated as such by EPA when applied to water quality standard effluent limits. For example, see 40 C.F.R. Section 35.1550(c)(1). The regulations should allow for flexibility in both water quality standard setting and in the permitting process to reflect attainment toward the goal, not absolute adherence to it if it is not cost-effective. It is even more critical that this flexibility exists in determining the cost-effectiveness of effluent limits when many streams have been overclassified as to their stream quality.

To obtain a NPDES permit, an applicant will have an inordinately high cost of compliance and/or the technology will not be available to treat to the levels required. Even though the stream may already be fishable/swimmable, the stringent standard still must be met. A similar applicant on an adjacent stream may be able to meet the requirements because the stream was classified correctly in the first place. Either the high quality nonexisting stream classifications should be treated as goals rather than set standards, or all streams should be designated at existing quality levels with reasonable standards to improve the quality as technology and economics dictate.

[illegible]
[illegible]
215 Fremont Street
San Francisco, Ca. 94105

Nov. 13, 1982

Ron Miller
Bureau of Water Quality Control
1740 West Adams Street
Phoenix, AZ 85007

Dear Ron:

On September 15, 1982, we sent you a draft Regional Counsel memorandum dated September 9, 1982 written by Ann Nutt regarding an analysis of the inadequacy of the Arizona Revised Statutes (A.R.S.) for purposes of the NPDES delegation. Also included was a draft memorandum dated August 20, 1982 by legal intern Robert Shives, Jr. on the inadequacies for purposes of NPDES delegation of both the Arizona Revised Statutes and the Arizona proposed Chapter 20 regulations. As these memos indicate, the NPDES program could not be delegated to Arizona under existing statutes. From discussions with you and your staff we understand that you are preparing proposed statutory changes for introduction as new legislation. While these proposed statutory amendments are being prepared, I thought it would be useful to summarize those areas of inadequacy which would need to be remedied before the NPDES program could be delegated.

There are five areas that are obstacles to delegation. The first obstacle is the definition of pollutant found in A.R.S. §36-185(11). It is inadequate because it doesn't provide for a determination by the State that an injection will not degrade surface or groundwater and therefore the exclusion provided is too broad.

The second obstacle is the prohibition of "zero discharge" requirements found in A.R.S. §36-1854(B) and A.R.S. §36-1859(C). These provisions are inadequate because they prohibit any requirement which would have the effect of even slightly diminishing return flow or issuing permits which would have that effect.

The third obstacle is the conflict of interest provision for the body which approves the NPDES permit found in A.R.S. §361859(A). It is inadequate because EPA regulation 40 CFR §123.7(e) requires an explicit confict of interest provision which would provide that the board, body or individual which approves all or portions of NPDES permits issued by the State does not include anyone who receives or during the two previous years has received a significant portion of income directly or indirectly from permit holders or applicants.

The fourth obstacle is the lack of authority to enjoin permit violations which is evidenced in A.R.S. §36-1864. This provision is inadequate as EPA regulation 40 CFR §123.9(a)(2) requires that permit violations be able to be enjoined and as the A.R.S. now reads, only orders of the council or director may be enjoined.

The fifth obstacle is the provison for criminal penalties found in A.R.S. 36-1864.02. It is inadequate because criminal penalties are specified by 40 CFR §123.9(a) (3)(iii)(B) as a minimum of $10,000 per day for each violation. Arizona presently provides a maximum fine of either $1000 for Class I misdemeanors or $750 for Class II misdemeanors.

These obstacles represent the minimum statutory changes which are needed before NPDES delegation can occur. If there are any other provisions of the statutes which to your knowledge when read in conjunction with the above mentioned obstacles would remove the inadequacy, please let us know and we will be glad to convey the information to our office of Regional Counsel for an interpretation of the provision. I hope this nutshell overview is helpful to you in working with your legal staff to draft proposed statutory language.

Sincerely,

Dave Jones, Chief
Arizona, Hawaii, Nevada Branch

Mr. ROE. If there are no further witnesses this morning, the committee will now recess until Thursday at 10 o'clock, to continue the hearings.

[The subcommittee recessed at 12:46 p.m.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

THURSDAY, SEPTEMBER 22, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to call, at 10 a.m. in room 2167, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen.

The Subcommittee on Water Resources will come to order. We will continue with our hearings on our clean water bill and water pollution control legislation.

We are honored to have as our leadoff witness, Hon. Pete Wilson, U.S. Senator from California, together with his colleague in the House, Duncan Hunter, who also represents California.

I believe you have with you Mr. Richard King, director of the San Diego Water Utilities Department and William Harrington, Washington representative, San Diego.

Before I defer to the gentleman from California, let me thank you for joining us so early. There are about six different meetings going on at the same time. I know you have been a real champion in the field of environment and clean water and clean air, Senator, and we want to welcome you here.

Duncan has been a strong force in the House here, so we are glad to get to start off with people who are so interested in this area and we are looking forward to your testimony, and you would, I hope, introduce the gentleman with you.

I defer to the gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman.

I, too, am delighted to have Senator Wilson who has been deeply involved in this problem for years and years as former mayor of the city of San Diego. That city receives the greatest impact from pollution problems that exist in the border area between Tijuana and San Diego.

So his familiarity with it is so valuable to this committee. I personally am grateful that he arranged his schedule to permit him to testify before us this morning.

I don't believe there is a more serious pollution problem in the country than that particular area. I hope that the committee will find the testimony of both Senator Wilson and of course my col-

league, Duncan Hunter, who represents the area that also is as impacted as anyplace with the problem.

We are grateful to have them here. I personally am pleased to have them present their testimony and it is my pleasure to introduce Pete Wilson, our Senator from California, who has served in the San Diego area for many, many years, and Duncan Hunter, Congressman from the San Diego area that has served here for several years now, and Mr. King, and Mr. Harrington.

Thank you very much.

Mr. ROE. Senator, you are recognized.

The full text of your prepared statements will appear in the record at this point.

[Prepared statements referred to follow:]

PREPARED STATEMENT OF SENATOR PETE WILSON

Good morning, Mr. Chairman and members of the committee, with me today is Mr. Richard King, Water Utilities Director for the City of San Diego, and Mr. William Harrington, San Diego's Washington Representative. I wish to express my appreciation for this opportunity to speak on a matter of great importance to San Diego. The record of your committee is one of long-standing foresight and determination in dealing positively with matters of water pollution. We trust, after you have heard our description of a situation which EPA officials identify as the most serious water pollution problem in Federal Region IX, a four state area, that you will be compelled to act favorabley towards San Diego's plea. We seek relief from a major uncontrolled source of pollution which is a daily hazard to the health and the environment of San Diego's citizens.

Mr. Chairman, San Diego is located in the most southwestern part of the United States. Its southern corporate boundary is coterminous with the California-Mexico border. Directly south of San Diego lies Tijuana, Mexico, whose northern limits are likewise coterminous with the international line. Since the 1930's Tijuana has grown from a small frontier outpost into a commercial/residential city of approximately one million inhabitants. And, becaue economic opportunity is greater in proximity to the United States than in Mexico's interior, its population is expected to more than double in the next twenty years.

Tijuana is well known throughout the western United States and Canada for its colorful sporting events, its cultural and scenic attractions and its international shopping plazas. Yearly, for these and other reasons, the Tijuana-San Diego border is the most crossed border in the world.

What is not as well know about Tijuana is that this city, approximately equal in population to the seventh largest city in the United States, has neither a reliable sewage collection system nor a sewage treatment facility. Moreover, only about 50 percent of Tijuana's population is, or can be, currently connected to the city sewage system. The balance either use septic tanks or have no system of sewage disposal at all. Yet, dispite this lack of connections, Tijuana's system currently collects 20 million gallons per day (MGD) of sewage. A combination of anticipated population increase, future construction of additional collection lines, and an increased water supply from the Colorado River could triple this current volume by the end of the century. To make matters worse, it is not unusual for Tijuana's sewage collection and disposal system to fail completely. Not for hours, not for days, not even for months, but for years at a time. It is a matter of fact that San Diego has been receiving and disposing of Tijuana's sewage each day for the past three years because of such a system failure.

You may wonder why we concern ourselves with the condition of a foreign city's sewers. Quite simply ladies and gentlemen, because San Diego is at a lower geographical elevation than Tijuana. In addition, for a good part of each year, the Pacific Ocean currents flow northward along the Mexican coastline to California shores. Be assured, Mr. Chairman, were it not for these facts of municipal infrastructure and geography, Mexican sawege would be of no importance to San Diego. But these facts are inescapable. And their consequence is millions of gallons of raw sewage pouring daily, uncontrolled, across the border from Mexico to pollute and contaminate nearby U.S. valleys, streams and seashores.

For half a century, federal, state and local agencies have struggled with this problem. Just last month, Mexican President Miguel de la Madrid, visiting Baja Califor-

nia Norte for the first time since taking office, announced plans for the construction of a sewage system that would help prevent (rather than simply prevent) pollution of the coastline on both sides of the border. de la Madrid's secretary of urban development and ecology announced, during the same visit, that the Mexican government had budgeted (not appropriated) funds to begin construction of the planned sewage system. Another advisor to de la Madrid said the president was declaring his administration's intention to develop a sewage system. Regretfully, this rhetoric is familiar to San Diegans. American presidents have repeatedly urged Mexican presidents to resolve this historic problem. The State Department has worked diligently with the Mexican foreign ministry to execute agreements which will mitigate the pollution hazard. Yet, despite long-term efforts by both countries, the problem only increases in severity. And candidly Mr. Chairman, the citizens of San Diego and its nearby communities who are forced to live daily with the pollution which follows from Mexico, grow impatient with the diplomatic pace of the search for a permanent solution.

San Diego is convinced that if this problem is to be solved, the initiative must come from the American side of the border. We also believe that the control of pollution which emanates from Mexico is the responsibility of the United States. For these reasons we appear before you today to state our case and ask for your advice and assistance.

First, the background of our request: since the 1930's San Diego and its environs have suffered pollution from Tijuana sewage. During the early years the Mexicans built "band-aid" facilities which were eventually overwhelmed by increasing demands. In 1965 the latest "band-aid" effort took the form of a service agreement between the United States and Mexico. The two nations agreed that the City of San Diego would accept domestic sewage from Tijuana into the City's Metropolitan Sewer System (Metro) under emergency conditions. The reason for this pact was to avert serious health and environmental problems in both countries due to the discharge of large quantities of Mexican sewage in the two border communities or into the Pacific Ocean near the international boundary.

During the first ten years San Diego treated Mexican sewage on an average of 26 days per year. However, in the mid-seventies the usage increased dramatically. In 1976 Tijuana sewage was treated 90 days and rose to 253 days in 1978. For the past three years San Diego has treated Mexican sewage for 365 days each year. In effect, there has been, and is, a permanent emergency in the Tijuana sewage system. As a consequence, San Diego is collecting, treating and disposing of 80 percent of Tijuana's daily sewage load on a continuing basis.

Consider that if Tijuana's system were fully operational, it would pump 20 MGD of raw sewage across the beach and into the Pacific Ocean surf a few miles south of the border. The local U.S. shoreline has been spared the pollution and contamination which surely would result from the discharge of such enormous quantities of untreated sewage into the surf only because of Tijuana's permanent "emergency". Under this emergency condition, San Diego, because of contractual obligations and self-interest, receives approximately 15 MGD of Mexican sewage daily for treatment and disposal. Tijuana pumps the balance of its daily sewage load, 5 MGD, across the beach and into the ocean a short distance below the border. And believe me, it is not difficult to locate the discharge point on the Tijuana coastline. This joint effort constitutes Tijuana's present emergency sewage disposal system.

When Tijuana cannot pump its daily 5 MGD into the surf because of the total failure of its system, or because of breaks in its collector system, the 5 MGD, following elevation contours, flows into the Tijuana River Valley on the U.S. side of the border contaminating and polluting farm acreage there. Sewage also flows into the Tijuana Valley River, which carriers it to the ocean, contaminating U.S. valley waterways along the way. For part of the year, ocean currents carry this raw sewage northward fouling our shorelines.

Mexico's response to this problem has been to commence construction of a larger pumping plant, a force main and a conduit system which will carry all of Tijuana's sewage (20 MGD) to the present ocean discharge point. Work on the pumping plant was halted last year due to a peso devaluation and a change of national administration. It is approximately 50 percent complete. Work continued on the force main and conduit system and it is nearly complete. But of course, without the new pumping station the other work is virtually useless. And it is uncertain when work on the pumping plant will be complete. In the meantime, depending on the condition of the Tijuana disposal system, raw sewage is either being pumped into the surf at the border, contaminating north and south coastlines, or flowing into the Tijuana Valley and its water courses to contaminate the valley lands and the shoreline at the valley mouth.

Mexico speaks of a future system which will carry sewage from Tijuana to a treatment facility to be built approximately 18 miles south of Tijuana. It is said that in addition to eliminating the present pollution problem, this facility will also reclaim sewage for agricultural uses. Unfortunately, Mexico cannot say when this facility will be operational. In sum Mr. Chairman, we are not optimistic about a timely Mexican solution to the pollution problem.

Mr. Chairman, the last band-aid has been applied and the patient is bleeding to death. San Diego has concluded that the tourniquet must be the construction of an international sewage treatment and disposal facility on the United States side of the border which will be capable of accepting Mexican sewage. We are joined and supported in this conclusion by the United States Environmental Protection Agency and the State of California. As a first step towards this goal, these bodies have requested San Diego to study treatment and disposal facility alternatives capable of processing sewage loads generated on both sides of the border. This study is underway and is slated for completion by the end of this year. While the conclusions of this report cannot be known at this time, present circumstances foretell the likelihood of an American facility utilizing conventional treatment, and discharging effluent into the Pacific Ocean through an outfall. The cost of this facility will depend upon such variables as its location, capacity, and methods of treatment and disposal. The optimum combination of these variables will be the subject of conclusions of the facility study. In 1981 this committee approved a San Diego proposal, sponsored by Mr. Anderson, for an I and A research demonstration. As a result, San Diego has become a leader in the development and testing of vascular plant technology as an innovative and alternative method of sewage treatment. If our testing proves that this is an appropriate technology for the treatment and reclamation of sewage, San Diego would seek eventually to integrate this process into the border facility.

If the international facility we have described is the permanent solution to the problem, and we have no reason presently to think it is not, then the next question to be answered concerns the most expeditious method of getting it built. Quite clearly San Diego is in the midst of a water pollution emergency. Normally, the construction of a treatment facility such as I have described would require eight to ten years. Obviously, not a quick response to a health and environmental crisis. This time line must be compressed. To do so we would suggest the establishment of a set of procedures unique to this international project. Essentially, these procedures would modify, on a one-time-only basis, existing law to the extent that the various federal approvals necessary for the projects' construction could be "fast-tracked." This concept has been discussed with the EPA, and it has indicated a willingess to cooperate provided Congress approves. Let me hasten to add that we do not mean to imply any disregard for existing environmental protection law. The only disregard we harbor is for the prospect of living with pollution for another ten years. We ask that the federal government yield to a degree which will allow us to solve the problem in a timely fashion.

The cost of constructing this facility will be substantial. Exactly how much will depend upon final design decisions. In the absence of that data, and in the interest of moving ahead, we would propose the authorization of an appropriation sufficient to cover the acquisition of the facility site and the preliminary engineering expenses. This would be a relatively modest amount. As the details of the project unfold San Diego could reappear before this Committee to report progress and request additional authorization for final design and construction funding.

Finally, we would like to comment on a point related to the American and Mexican cooperation necessary for long-term actions to develop and maintain a pollution free transborder area. The United States-Mexico agreement on "Cooperation for the Protection and Improvement of the Environment in the Border Area," recently signed by Presidents Reagan and de la Madrid, is a necessary first step to long-term cooperation between the nations. San Diego applauds the efforts of the State Department negotiating team which produced this remarkable document. This agreement is intended to be the framework to which subsequent "Annexes" will be appended identifying program priorities and defining cooperative approaches to immediate and long-term border sanitation concerns. We would hope that in the drafting of the sanitation annex, consideration will be given by the United States to a binational plan of mutually beneficial and contingent actions which will ultimately result in Mexico having full responsibility for all of its sewage.

Mr. Chairman, thank you for your courtesy in listening to San Diego's petition. It has been a pleasure appearing before you. I would be happy to answer any questions you or any of the members of your committee may have on this presentation.

PREPARED STATEMENT OF REPRESENTATIVE DUNCAN HUNTER OF CALIFORNIA

Mr. Chairman and members of the subcommittee, I want to thank you for the opportunity to testify today on an issue of utmost importance to not only the citizens of San Diego, but the citizens of Imperial County. For years, the Mexicans have dumped raw sewage and toxic chemicals into the Tia Juana and New Rivers creating a major health threat for the people along these Rivers. I appreciate being able to bring this matter to the Subcommittee's attention.

As Senator Wilson has stated, the sewage problem in Tijuana is very serious and the Senator's description of the sewage system in Tijuana accurately describes the present and future problems the San Diego area faces if we do not come up with a solution to treating this sewage. The people of San Diego and Imperial County have lived with this health threat for decades and I would like to emphasize the economic aspects and personal sufferings that are involved in this age-old problem.

As you may know, Imperial Beach, California lies at the mouth of the Tia Juana River. This community relies heavily on tourism to support its economy. Through the years the City of Imperial Beach has been plagued by the periodic quarantine of its beaches due to discharges of raw sewage from the Tia Juana River onto its beaches. Recently, however, this problem reached alarming proportions when releases from the Rodriguez Dam were increased, causing the Tia Juana River to flush even larger amounts of raw sewage into the ocean and onto Imperial Beach. For well over a month, Imperial Beach and several beaches to the north, remained quarantined due to a bacteria count 10 times the level considered safe for humans. For the shop and business owners this occured at the very worst time—during their busiest tourist season. Due to the sewage laden beaches, business was off over 50% in most restaurants, hotels and shops. One restaurant owner reported an evenings business of 15 dollars; one shop owner in Imperial Beach had a total days sale of only $7.25; and one motel owner lost $40,000 during the month quarantine. Normally business would be much higher for these Imperial Beach residents.

This incident clearly points out the problems encountered by the citizens of San Diego. Not only were businesses affected, but more importantly, the health and safety of these citizens was seriously threatened.

An equally alarming problem exists about one hundred miles away, along the New River which flows through Imperial County and empties into the Salton Sea, a major recreation area. In the past this river has been named the most polluted in California and unfortunately this year was again named the State's most polluted with raw sewage and toxic chemicals. A recent study conducted by the California Water Quality Control Board showed that 25 percent of the New River flow at the Calexico/Mexicali border contains harmful wastes from Mexicali. This study details dozens of pipes and open discharges carrying raw human sewage, toxic industrial chemicals, pesticides, oil and grease, slaughterhouse carcasses and wastes from hog and dairy farms.

Along with the Tia Juana River, the New River presents a serious health problem for the people in the Imperial Valley and again it is a problem that has existed for decades without a solution.

We have negotiated with the Mexicans for years and encouraged them to clean up both the Tia Juana and New Rivers. While they have expressed interest and agreements have been signed, the situation is unlikely to improve unless we take some action. In recent months, through the hard work of Ambassador Gavin, the Mexican government is beginning to look at ways to provide proper treatment facilities in Mexico. Since this problem originates in Mexico it would be preferrable if the Mexicans brought this situation under control. However, we can no longer wait on this issue and we can no longer ignore the health and safety of our citizens because the source of the problem exists elsewhere. That is why I strongly support the City's request for authorization of funds to cover preliminary engineering expenses and site aquisition for a plant to treat sewage from the Tia Juana River. In addition, I urge the Subcommittee to authorize funds for the same purpose for the New River.

Again, I appreciate the opportunity to testify before you and bring this serious situation to your attention. I would be glad to answer any questions you may have. Thank you.

TESTIMONY OF HON. PETE WILSON, A U.S. SENATOR FROM THE STATE OF CALIFORNIA; HON. DUNCAN HUNTER, A REPESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA; ACCOMPAINED BY RICHARD KING, DIRECTOR, SAN DIEGO WATER UTILITIES DEPARTMENT, AND WILLIAM HARRINGTON, WASHINGTON REPRESENTATIVE, SAN DIEGO

Senator WILSON. Thank you, Mr. Chairman.

I wish to thank you not only for your kindness and courtesy, we are very grateful, Congressman Hunter and I and Mr. King and Mr. Harrington who you have kindly introduced. We are grateful both personally and on behalf of the constituents whom we represent in San Diego County who are very much affected by the problem we will describe this morning.

I thank you for your leadership and your very generous remarks with respect to the efforts that we have made in San Diego County to achieve clean water. That is precisely the focus both of the committee and of the public officials in San Diego County who now find the success of those efforts threatened by genuinely external circumstances, circumstances that are largely beyond our control.

I refer, of course, to the fact that we are threatened with a problem that I think most would agree and certainly the EPA officials have identified as the most serious water pollution problem in Federal region 9, a four-State area that has not just attracted national attention but has received the urgent attention of your committee for which we are very, very grateful.

We are seeking relief from a major uncontrolled source of pollution, that is literally a daily hazard to the health and environment of San Diego County citizens. Directly south of the city of San Diego lies the city of Tijuana and the Republic of Mexico, just over the border, a city which since the 1930's has grown from a small border village into a commercial-residential city of approximately 1 million population.

Tijuana has neither a reliable sewage collection system nor a sewage treatment facility, moreover, only about 50 percent of Tijuana's population is or can be currently connected to its sewage system.

In spite of this lack of connection, Tijuana's system currently collects 20 million gallons of sewage per day. The estimate is that this current volume could triple by the end of the century. To make matters worse, it is not unusual for Tijuana's sewage system to fail completely. San Diego has been receiving and disposing of Tijuana's sewage daily for the past 3 years because of such system failures.

The question is appropriately asked whether we concern ourselves with the condition of a city located—with a sewage system with its problems in a city located in a foreign country. The answer obviously is because San Diego is at a lower geographic elevation than Tijuana. In addition, for a good part of the year ocean currents flow northward along the coastline to California shores, more accurately and specifically, from Tijuana to San Diego.

The facts are inescapable that millions of gallons of raw sewage are daily pouring uncontrolled across the border from Mexico to pollute and contaminate nearby U.S. valleys, streams and beaches.

For half a century Federal, State, and local agencies have struggled with this problem and yet despite long-term efforts in both countries the problem has only increased in its severity.

Candidly, Mr. Chairman, the citizens of San Diego County and its nearby communities that are forced to live daily with pollution that flows from Mexico have grown understandably impatient in the search for a solution.

San Diego is convinced if the problem is to be solved the initiative must come from the American side of the border. We also believe the flow of pollution that emanates from Mexico is a responsibility internationally of the U.S. Government. For these reasons we appear before you today to state our case, and ask your advice and assistance.

Since the 1930's San Diego and its environs have suffered pollution from Tijuana sewage. During the early years the Mexicans built "band-aid" facilities which were eventually overwhelmed by increasing demands. In 1965 the latest "band-aid" effort took the form of a service agreement between the United States and Mexico. The two Nations agreed that the city of San Diego would accept domestic sewage from Tijuana into the city's metropolitan sewer system, metro, under emergency conditions.

For the past 3 years, San Diego has treated Mexican sewage on a daily basis. In effect, there has been and continues to be a permanent emergency in the Tijuana sewage system.

As a consequence, San Diego is collecting, treating and disposing of 80 percent of Tijuana's daily sewage load. Further, under this emergency condition, San Diego, because of contractual obligations and because of our own self-interest, receives approximately 15 million gallons of Mexican daily sewage for treatment and disposal. The balance amounting to some 5 million gallons per day Tijuana pumps into the ocean, a short distance below the border.

This joint effort constitutes Tijuana's present emergency sewage disposal system. Now the problem is aggravated considerably when as so often occurs, Tijuana cannot pump its daily 5 million gallons excess into the surf because of the total failure of its system or because of brakes in its collector system. In that event, the 5 million gallons per day simply follows the elevation contours and flows into the Tijuana River Valley on the United States side of the border and contaminates and pollutes lands, waterways and beaches.

Mexico's response to this problem has been to commence construction of larger facilities which will carry all of Tijuana's sewage, that is the present volume of 20 million gallons per day, to the present ocean discharge point. But work on these facilities was halted last year due to the peso devaluation and to the pending change of national administration. It is entirely uncertain when that work will resume.

Mexico speaks of the future system which will carry sewage from Tijuana to a treatment facility to be built approximately 18 miles south of Tijuana. Unfortunately Mexico cannot say when this facility will be operational.

In sum, Mr. Chairman, we are not optimistic about a timely Mexican solution to the pollution problem. Mr. Chairman, the last

band-aid has been applied and the patient is bleeding to death or perhaps, to mix metaphors, we are literally being inundated.

San Diego has concluded that the tourniquet must be a construction of a U.S. facility on the Mexican side accepting Mexican sewage, and discharging that treated effluent into the Pacific Ocean through a deepwater outfall. If the international facility we describe is the permanent solution to the problem, then the next question to be answered concerns the most expeditious method of getting it built because quite clearly San Diego is in the midst of a water pollution crisis.

Normally the construction of a treatment facility such as I have described would require 8 to 10 years. Obviously this is not a quick response, it is not a quick enough response to a health and environmental crisis. The time line must be compressed.

To do so we would suggest the establishment of a set of procedures unique to this international project, essentially these procedures would modify on a one-time-only basis existing law to the extent that the various Federal approvals required for the project's construction could be fast tracked. This concept has been discussed with the EPA and the Agency has indicated a willingness to cooperate, provided Congress approves.

The cost of constructing this facility will be substantial. Exactly how much it will cost will depend on final design decisions. We don't have that data. Congressman Lowery has a study that is in progress; it was begun this summer. It is to be completed in October, but in the interest of moving ahead we would propose to the committee today an authorization of an appropriation sufficient to cover acquisition of the facility site and the preliminary engineering expenses.

At the conclusion of that study in October, we will be able to provide a number. It will be a relatively modest amount. As the details of the project unfold, San Diego would ask the privilege of reappearing before your committee to report progress and to request the precise amount required for final design and construction funding.

Finally, we would like to comment on actions necessary to develop and maintain a pollution-free transporter area. The United States-Mexico agreement on cooperation for protection and improvement of the environment of the border area, recently signed by Presidents Reagan and de la Madrid, is a necessary first step to a long-term cooperation between the nations.

We would hope that in the drafting of a sanitation index to this agreement, consideration would be given by the United States to a binational plan of mutually beneficial and contingent actions which will ultimately result in Mexico having full responsibility for all its sewage.

Mr. Chairman, unfortunately, that annex to the agreement does not exist and for the reasons that I have already indicated, we cannot be complacent that it will be done on a timely fashion to avert the crisis that already exists and is threatened daily with a very considerable aggravation.

We thank you, Mr. Chairman, for your leadership. We thank you for your courtesy in hearing our petition.

At this point we would be happy to answer questions from you or from the members of the committee.

Mr. ROE. Thank you, Senator.

Does our colleague, Mr. Hunter, have any further comments?

Mr. HUNTER. I have just a few comments, Mr. Chairman.

I appreciate, also, you giving us the opportunity to testify before you. I would like to make a few comments beyond those made by the Senator.

I think he stated the situation well. I think that one thing we have to realize is that the crux of the problem is that the Tijuana River Valley, which runs from the base of Rodriguez Dam which is on the Mexican side of the border, down across the border and terminates at the beach town of Imperial Beach in San Diego, is a drainage, if you will, that is on both sides of the border. The problem is going to have to be treated on both sides of the border.

This last summer we had pollution which required a quarantine of the beaches farther than had ever occurred in the past. The city of Imperial Beach was devastated; it is a small town of 22,000 people that lies only several miles north of the international boundary.

The problem has been a result of not only inadequate facilities but also of chronic breaks in the lines, sewage lines that do exist on the Mexican side whenever there is heavy rains. The lines tend to break and sewage flows northward, if you will, and gets into the Tijuana River and ultimately into the ocean area.

Also there is a direct outfall in which the Mexicans discharge raw sewage right into the surf, only a couple miles south of the international border, and that—and there is a plant down there in the Playas area, about 2.6 miles south of the border, which has breakdowns on a regular basis. That results in raw sewage being discharged into the surf and ultimately that sewage contaminates the water offshore San Diego.

Again, the sewage carries bacillary, dysentery, typhoid fever, and infectious hepatitis. It is an extreme health problem. It is my opinion and the opinion of the health officer in the San Diego area right now, that it contributes to infant mortality rates on the Mexican side, and could affect the American side, too.

I need to expand the discussion somewhat because my district covers the entire border there, and in the Imperial Valley we have a similar situation. It is not of the same proportions. It doesn't receive the same amount of sewage but it does—it is a serious situation in that we have the New River flowing north from Mexico, that crosses the border and Calexico and Mexicali and it brings with it waste from plants in which animals are slaughtered, it brings with it toxic wastes from fungicide plants on the Mexican side, and if I could, I have shown you a couple pictures of some of the operations that direct raw chemicals into New River which in turn brings these north.

We have the worst toxic waste problem according to the EPA in California manifested in this flow in the New River. It is flowing into the Salton Sea about 30 miles north of the international border and it is killing right now the Salton Sea. It is a major area of recreation in California and sport fishing and it lies at the north end of the Imperial Valley.

The sea will be dead within a number of years if that flow is not stopped.

Let me speak briefly as to the actions of our representatives in Mexico City. Ambassador Gavin is very concerned about this problem. He has been one Ambassador who has been extremely interested in getting it solved. It was at his insistence that the Presidents came together and signed an agreement, an executive agreement regarding a border environmental district to which as the Senator said, annexing agreements could be placed that would involve the specific problems.

In other words, we could make various annexing treaties to take care of these problems. The problem is Mexico does not at this time have the money to solve the problem. Right now our Ambassador is trying to assist them in getting perhaps some international money, some type of loan so they can assist us in solving the problem, but again, I think it is absolutely imperative that we take the leadership in this operation if we are going to make it work.

So our State Department and our Ambassador are working to solve the problem.

One last thing I would like to say—and I know perhaps that Dick King, who is the pioneer really in water reclamation with water hyacinths who has an operation in San Diego would like to testify. We would like to have a facility that could evolve into a water reclamation facility. We have been reminded by governmental leaders in other States that it is very possible technologically, something that is done in other areas to reclaim the water.

As you know we use a great deal of Colorado River water, it is very precious and in the long run we will need to reclaim this water. We will need cooperation of the Mexicans but at this time we need to go forward. If we don't start now we are going to see the population of Tijuana being past the million mark before 1988 and we are going to see the population of Mexicali pass the 1 million mark also and if we don't make the land acquisitions now for these facilities and perhaps doing engineering work, we are going to find that we are behind the curve and we will see a tremendous impact on the American population along the border, both in the Imperial Valley and in the San Diego area, for many years to come.

This will be an impact with great economic as well as health consequences.

Thank you, Mr. Chairman and members of the committee for allowing us to testify today.

Mr. ROE. Thank you very much, Congressman Hunter.

Do Mr. King or Mr. Harrington have anything to add?

Mr. HARRINGTON. Not at this time.

Mr. KING. No, thank you.

Mr. ROE. You are available to answer questions?

Senator WILSON. Mr. Chairman, I would just say that if you have any questions that might relate to the intricacies of aquaculture we do have at hand a genuine expert and pioneer in the field, Mr. King, who enjoys a deserved national reputation.

Mr. ROE. We appreciate that. No question about it.

Now, let me ask you this: As I understand the situation, how long has this situation been going on? I see that we have been

doing the "emergency" pumping into our system for the last 3 years. Has it been going on for a long time before that?

Mr. HUNTER. The problem has existed to some degree, yes, for decades, Mr. Chairman, simply because the Tijuana sewage system has never been adequate, in that whenever there is heavy rain in the area the lines that parallel the international border, just in the interior of Mexico, that run the sewage out from Tijuana to the ocean tend to break. These lines break and the sewage of course goes down the hills and flows into the Tijuana River Valley.

Also chronically the pumps that move the sewage south to the Playas pumping plant break down and when that occurs the sewage runs right into the ocean before it gets to the plant or runs across the international border into the Tijuana River basin and there are a number of raw sewage outlets that run into the Tijua na River basin which is normally dry on the Mexican side, so you have sewage bubbling out of the outlets and running into the river basin and basically seeping beneath the sand.

When Rodriguez Dam gets a head of water behind it and water has to be released—which is at the head of the river valley—or you have excessive rainfall and therefore the release is necessary, the water is released, it comes down through the Tijuana River Valley on the Mexican side and flushes this raw sewage which has bubbled out of the various outlets in Tijuana down through the Tijuana River Valley and into the United States and into the Imperial Beach area and ultimately into the ocean.

Again, at that point the quarantine restrictions are invoked along the beach. So it has been going on for many, many years but it is intensifying because the population of Tijuana is literally exploding.

Mr. ROE. I am trying to establish a set of facts. It has been going on a long time, we have taken interim action vis-a-vis the situation of the 3 years which turned into a permanent situation as the Senator stated in his testimony.

So, therefore, there isn't a disjuncture, any agreement per se that is a standing agreement between us and the Mexicans other than that which you spoke to, the accord and we have to get to that. There is nothing formally nailed down on a specific plan.

Senator WILSON. That is correct, Mr. Chairman. The agreement that is in effect which commits us to handling their emergency needs is one that is due to expire in 1985. Local officials in San Diego will not sign a similar agreement as they did in 1965 after the Federal Government had effectively negotiated that agreement.

The problem is that even if they don't sign it, the laws of nature being what they are, they are afflicted with a problem.

Mr. ROE. Was the agreement signed, is it between government to government or is it an operational agreement between San Diego and the city of Tijuana, do you know offhand?

Senator WILSON. I am going to allow Mr. King, the director of water utilities, to respond.

Mr. ROE. I am leading to a point.

Mr. KING. Mr. Chairman, members of the committee, the agreement is between the city of San Diego and the U.S. Government. There is also an international minute between the United States——

Mr. ROE. You are saying the agreement is between the city of San Diego and the U.S. Government who negotiated another agreement with Mexico to do certain things?

Mr. KING. Yes, sir.

Mr. ROE. It doesn't—does it have the effect of a treaty or what?

Mr. KING. It is called a minute. I don't know what that otherwise would refer to.

Mr. ROE. I am just wondering if it is a comparable situation that we have with the Canadians on the St. Lawrence Seaway and so on. We will look into that.

Senator WILSON. I think it is.

Mr. HUNTER. Mr. Chairman, there is a base treaty, a minute order, that exists, but there is a base treaty that as arrived at back in the 1940's which was used initially as a foundation for this arrangement. I have seen that in some documentation I have read.

So it needs a little research, I think. When we put a provision in the recent appropriations bill that would reimburse San Diego for part of the deficit that they have, it costs them about $1.5 million to get this sewage now, and they will only get about $150,000 from Mexico, and when we put this provision in, I noticed that Mr. Udall was asking also for a deficit funding because they are treating some of the Arizona sewage; Nogales is treating Mexican sewage also.

So it arises from an international treaty, and we need to look into that. I have seen it one time, a treaty made, that was the basis for this.

Mr. ROE. Boundaries Water Treaty.

Mr. HARRINGTON. Just a point of clarification on the agreement. The genesis of this 1965 agreement lies in a 1944 treaty between the United States and Mexico. The 1965 agreement was negotiated by the International Boundary and Water Commission. The American section and the Mexican sections were involved. Subsequently, the city of San Diego, at the behest of that body, agreed to sign the agreement. That is because of our being signatory.

Mr. ROE. It seems to me on the basis of what the Senator and our colleague testified to and yourselves is that this has gone on for 20 years, and if we don't nail something down, it will go on for another 20 years.

Senator WILSON. The only amendment I would offer to your statement is that it would go on but grow much worse. As Congressman Hunter has pointed out, there is a population explosion within the city of Tijuana. It has become long since the busiest international crossing in the world.

It is also the point to which a considerable amount of migration has come from the interior of Mexico.

Mr. ROE. Well, I am an activist and I don't believe we should take all our time going into agreements if we don't do something. We have to do something. It seems to me the only way we can—if the agreement is locked in with San Diego. San Diego is locked in under the funding allocation that comes to California, and they have an added starter is what it amounts to, the effluent coming from Tijuana. Isn't that what we are talking about? Do you understand what I am saying?

In other words, there is $2.4 billion allocated for funding under the Clean Water Act. Through the formula devised therein, a certain amount goes to California. What I am trying to get at is in order to get funding to be able to do something, you don't want to include that under California's allocation because the rest of the State will "blow their stack," so to speak—pardon the euphemism.

Now we have to come up with a solution to get this done; otherwise the way the levels of funding are going, the $2.4 billion is like they have extended the sewer program to get to the optimum goal by at least 15 years. The needs are far beyond that.

Mr. HUNTER. Yes.

Mr. ROE. Therefore, as chairman of this subcommittee, I am thinking somewhere along the line, it seems to me, that as the technology is improving in this field and the fact that the problems are being isolated now—identified is a better word—and are international in nature, that it may be that the committee will have to consider special separate authorizations in this bill to provide the mechanisms that you need.

At the present time there isn't any mechanism to provide funding for Tijuana and there isn't any to provide funding to you to solve the problem with Tijuana.

So what I am coming back and saying is that someplace along the line, this will be a major departure; people rebuffed that. They say: "Look, we will put the money in a pot, and we have a formula by population" and whatever the State gets, and that won't solve the problem. Is that the point you are trying to make?

Mr. HUNTER. That is right. We have a problem that is unique because of the international nature of the problem.

Mr. ROE. Therefore, we are coming back, and are we saying this as Members of the Senate and the House, should the committee be considering where the special, unique problems evolve that they should be treated unto their own remedy, and should not denigrate the funding allocations to the States involved?

Senator WILSON. That is right.

Mr. HUNTER. Yes, Mr. Chairman.

Mr. HARRINGTON. As a matter of fact, there is a point of law here. We have been told by EPA that EPA funds cannot be used for foreign sewage.

Mr. ROE. It is still early in the morning, and we still have a sense of humor and somebody ought to say to EPA: "That is fine; maybe they should put up a packaging plant and solve it." Because unless we do something, as the Senator says, we will have real problems.

The gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman.

I believe you do perceive the essence of the problem. We have a city south of the border, Tijuana, perhaps the fastest growing city in all Mexico. Where it was a sleepy border town a few years ago, it is now over 1 million people.

Mr. ROE. Will the gentleman yield? How many Americans visit Tijuana? Of the 1 million, how many are Americans? I just wanted to make a relative point.

Senator WILSON. We estimate 1 million Mexican population, and that is substantially enhanced each day by American tourists.

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Mr. PACKARD. And at the same time we have San Diego, which is one of the rapidly growing cities of the West, and it now is pushing 1 million. It is now the seventh largest city in the country, and so you have two major cities side by side with this river flowing between from one side of the border to the other.

We have one that meets the water-quality standards, or at least has the mechanism to do so, and the other which has no quality standards whatever, and the one is impacted by the other. It is a major, major problem.

I would like to ask the witnesses a couple questions. To what extent, to your knowledge, will this proposed project assist San Diego in its future water-quality problems?

Senator WILSON. It will assist San Diego and to the extent that the benefit can be apportioned, I think San Diego is quite prepared to accept its share of the cost. I was asking Mr. King—and I will let him elaborate—but the facility that is envisioned, if it is a standard treatment plant to give primary treatment to effluent to be discharged into the ocean, would have a capacity of 150 million gallons. Their current capacity for this Mexican sewage is 50, and they are at capacity.

So that envisions a tripling of the capacity that they are now required to accept from Mexico. It envisions substantial growth within the South Bay area of the city of San Diego and association of development of Otana Mesa.

Mr. PACKARD. And the division of responsibility between Mexico and us has been established in this proposed project?

Senator WILSON. Yes, it has.

Mr. PACKARD. If Tijuana was not tied in with their existing system, would your system adequately take care of the present population of the city of San Diego?

Senator WILSON. If we were not handling any Mexican sewage?

Mr. PACKARD. Right.

Senator WILSON. It would handle the present, yes.

Mr. KING. That is correct. The capacity of the city of San Diego's sewage plant is more than adequate to take care of present needs and projects.

Mr. PACKARD. So, this project, as you see it, is primarily being proposed to handle the foreign sewage?

Mr. KING. Yes, sir; the motivation right now, the first point, is that Tijuana sewage, and secondarily is whatever extra capacity the city of San Diego would need in its South Bay area.

Mr. PACKARD. I would like you to review for us why the U.S. Government should pay the construction costs for sewage facilities for Mexico.

Senator WILSON. I think the answer to that is that it is properly the responsibility of the Mexican Government. The reality is that they have not, perhaps cannot, discharge that responsibility. In any case, it is pretty clear from the lack of progress that has been made and the total cessation of construction on this facility that supposedly would accommodate the needs of Tijuana that San Diego cannot reasonably anticipate that that will be completed in any sort of timely fashion. Very much to the contrary.

In terms of why the U.S. Government, rather than the city of San Diego—I think the answer to that is because this is indeed an

international project, problem, impacts are local. The source is from a Nation outside the U.S. borders.

As a matter of law, I think the chairman has developed very well in his line of questioning that the agreement to accept this Mexican sewage is pursuant to a minute order that goes back to the 1944 treaty that was described by Mr. Harrington.

Mr. HUNTER. I might add, though, Congressman Packard, that there is an opportunity, I think, in the future to get Mexican cooperation if we take the lead, and we are working on that; we are working on doing everything we can and our ambassador, John Gavin, is working on getting Mexican participation financially in this project.

But let me give a brief example of the last crisis situation. Mexican pipes broke on their side of the border that could have been fixed with about $150,000 worth of work. Now we still have raw sewage coming in, we are still taking their sewage into our disposal facilities, but these were emergency breaks that resulted in raw stuff just flowing across the border and into the water.

Because nothing was done in this crisis and they were not patched up, the entire southern end of San Diego beaches were quarantined, and small towns like Imperial Beach literally lost the greater part of their entire summer's revenues because basically Imperial Beach is a tourist town, that is their industry.

We had hotel operators who lost everything. The impact of those breaks and the resultant sewage flow across the border amounted to many millions of dollars to Americans and to the American communities. So it—it is just not a matter of inconvenience to the city of San Diego and the South Bay cities, it is a matter of survival for part of our community.

Senator WILSON. If I might interject, Mr. Chairman, in response to Congressman Packard's question, I subscribe fully to the comments made by my colleague, Congressman Hunter. I do want to underscore, however, that even though the adverse economic impact that he has described is completely accurate, the primary concern we have here today has to do with the quality of the water and the health hazards portended by this pollution.

You asked, why should the Federal Government be charged with making a contribution to the solution of the problem? I think the answer, in addition to the treaty aspect that we have described, is that what we are really talking about is an area of the United States which the chairman generously described as having demonstrated some leadership in cleaning up its water, is suffering intolerably from conditions that the Clean Water Act was designed to remedy.

If Tijuana were a city in California, it would have long since received, with full blessing of this committee, a clean water grant that would have eliminated the problem we are concerned with today, but because it is on the other side of the artificial line out there and because the law of nature ignores that line, we are talking about a situation that is intolerable that must be addressed and that the chairman has accurately defined as requiring a special treatment. It is a unique situation.

Mr. PACKARD. Why don't we provide the money and require Mexico to build the facilities on their side of the border and dump in their waters?

Senator WILSON. We could do that, assuming agreement on their part. I would have to say that the history of sewage treatment on the two different sides of the border would make me feel far more confident that the problem would be better treated from a technological point of view on our side of the border.

Mr. PACKARD. I would certainly agree with that.

Would it be possible just to put an outfall into the ocean and get rid of the pollution far out into the ocean?

Senator WILSON. That is a possibility. It is not a good one because an outfall, I think Mr. King can tell you in greater detail and with much greater authority, is not simply a pipe that is dumping the sewage. At least it shouldn't be that.

It requires special attention. In fact, having set many up, I am going to defer to him and have him tell you in some detail why.

Mr. KING. Thank you, Senator.

To put an outfall in the ocean is a very complicated process and requires considerable amount of time, and all we would be doing, in essence, would be putting raw sewage into the ocean which wouldn't be a satisfactory arrangement at all.

Mr. HUNTER. Also, there is I think somewhere down the line the fact we should construct a plant that could evolve into a water reclamation, and we are paying in excess of $100 per acre-foot for water now in our area. If we could evolve that into a reclamation plant ultimately, it could accrue to our benefit.

As you know, Ron, we have a real problem coming up in the next several decades regarding a shortage of water in southern California.

Mr. PACKARD. One last question, and then I would make a couple comments.

Supposing Mexico really is not cooperative and doesn't give permits and even though we furnish all the money, where do we go from there?

Senator WILSON. Congressman, first I would hope that that is not the case. But let's assume that it is. It is in our best interest that the facilities be built. Unless we do build the facilities that are being requested, we are going to be afflicted in San Diego County with an intolerable health problem.

In the worst case, San Diego would have to undertake that or some alternative course of action, and I don't think it is fair to impose on a locality a burden not of their making and a burden that has been accepted in this instance under the auspices of the Federal Government.

Mr. PACKARD. Mr. Chairman, I have lived and served government in San Diego County and serve part of the city of San Diego right now with my congressional district, and I have watched this problem grow out of proportion over the last 25 years. It is a unique problem that I think needs to be addressed separately and apart from the normal funding and approval processes as you have suggested.

I think it does require special language. I am totally supportive of the project. I have worked with the city of San Diego on the As-

sociation of Governments in San Diego County trying to find solutions, and this has evolved as perhaps the best solution to a very, very difficult problem. I am hoping the committee will take leadership in trying to solve this problem that is not only a specific one to San Diego, but it is a border problem that may exist in other parts of our country.

Thank you.

Mr. ROE. One more question before we proceed to other members. Does anybody have an idea of what the costs are involved for this?

Senator WILSON. Before Mr. King begins, I am going to ask that you and members of the committee to excuse me. I am reluctant to leave, but I am scheduled to preside over the Senate at 10 o'clock.

Mr. ROE. We appreciate your input. Thank you.

Senator WILSON. Thank you very much.

Mr. ROE. Does anybody have an idea of what the estimated cost involved is?

Mr. KING. The consultant has not completed his study, Mr. Chairman, a particular solution has not been determined for its location. But if we were to take a figure that was developed in the last 5 years for a similar program that did involve treatment with an outfall and put the price of inflation on it, it would run somewhere in the neighborhood of three-quarters of a billion dollars, $750 million, if we take that figure and extrapolate it.

Mr. ROE. Are there any other questions for the witnesses?

Mr. EDGAR. Mr. Chairman.

Mr. ROE. The gentleman from Pennsylvania.

Mr. EDGAR. I was going to ask the cost questions, and I understand you don't have specific figures on that. How much of that $750 million would you be asking the Federal Government to contribute?

Mr. KING. One hundred percent.

Mr. EDGAR. Why wouldn't the State of California make some contribution to that cost, 10 percent, 20 percent, so that there would be some sharing of Federal-State resources?

Mr. KING. I would hope that something like that would be worked out. At this point in time, that has not been settled. There has been some indication, a willingness by California, but I am simply not able to speak on their behalf.

Mr. EDGAR. The reason I ask the question, it is very difficult to conceive in the future 100 percent funding for any project, worthy or unworthy. We have had a history of some projects that have been questionable, and they have competed with projects that have been meritorious and many times we have had to squeeze those projects.

The chairman has developed a good omnibus water bill that is looking at projects in other water areas, port facilities and things, and one of the premises we are making in that legislation which is now moving through the House is that there will be State and local participation in whatever development we have. I understand the international implications of this which make it unique.

I also think some benefit will accrue to the State of California because of this large Federal involvement.

Mr. PACKARD. Will the gentleman yield for a moment?

Mr. EDGAR. Yes.

Mr. PACKARD. In my questioning, I asked if the city of San Diego has adequate facilities exclusive of their taking Mexican sewage to handle their own problems. The testimony given was that they can solve their problem with their existing facilities and that the problem essentially then is a national and international problem. I think that is the reason they see it as a Federal problem.

Mr. EDGAR. I guess I would argue it is a Federal problem, but it has some State implications, and while it may not accrue directly to the City because their water treatment system may be adequate if they didn't have the Mexican sewage, I think there is some——

Mr. HUNTER. Mr. Edgar, I would like to inject one other dimension and that is that we are working, presently our State Department is working again, and our ambassador, to require Mexican participation. I think it is appropriate that they participate to some degree.

In that regard, we have provided for the Mexicans a desalinization plant on the lower Colorado River which will cost the U.S. taxpayers upward of $500 million over the next several years, and there is a possibility that desalinization plant could be reduced to some degree and some of those funds perhaps could be used for reclamation both in the New River problem—incidentally, the New River problem, the preliminary estimates I have, they are very general, is about $50 million. That is in the Calexico-Mexicali area.

But there is a possibility to use those funds. That fact points out the inequity with which the problem has been handled. We basically are paying $500 million to ship clean, clear water to Mexico so it can grow crops in the Mexicali Valley, and they, in return, are flowing raw sewage and some of this junk and DDT that is coming across the border to reward us for that generosity.

So I think that some participation should be forthcoming, but I think the important point is that we need to take the leadership; and to protect the health of U.S. citizens, we need to move now because it takes quite a while to build the facilities.

Mr. EDGAR. That is my next question.

Do you know how many people live in Mexico today?

Mr. HUNTER. No, I don't.

Mr. EDGAR. I think the estimate is somewhere in the area of 65 million people. The interesting statistics that I think all of us need to be aware of is that in 17 years that number will be 150 million people; the average age in Mexico is 18, and that with the projected birth rate in Mexico, it will be increased to the point where in 40 years from today there will be 280 million people living over our southern border if there is no change in population trends.

So the problem you state in reference to cities that grow by a million, we are talking of that kind of thing happening exponentially. The city of Mexico City will be the largest city in the world by the year 2000.

The pressure on that city in terms of water supply, sewage treatment, all of the problems that you are stating Mexico is not now presently caring for will be enormously increased. You know, we are facing a problem with how to help the Mexicans deal with this population influx in terms of sewage, water supply, agriculture, food supply, and in terms of impact on our border.

My guess is that some of the concerns that are being voiced along the border, albeit immigration, or the problems faced with water and sewage treatment are going to be catastrophic if we don't have some planned relationships between the Mexican Government and the United States.

Mr. HUNTER. On that point, I was privileged to go down with the negotiating team that worked out the agreement signed by the Presidents in August, and we have put EPA into the loop. Before the International Boundary and Water Commission was our commission that dealt with the Mexican Government and their environmental commission; we now have EPA as our national coordinator working with them.

I think with their aggressiveness and their expertise, we are going to be able to assist them more in that regard than we did before when we simply had the International Boundary and Water Commission only on problems on the border. I think this administration is moving toward trying to provide leadership in that regard.

Mr. EDGAR. I would make one final comment, the suggestion this be dumped out in the ocean is I think not a good suggestion because I think you will simply kill large portions of the ocean, and there are fishing interests and other cultural interests in the oceans that are important to protect.

I am not certain that is the answer.

Mr. HUNTER. I think when you are paying over $100 an acre-foot for water, you have to look at least downstream at reclaiming the water at least for industrial and agricultural use.

Mr. EDGAR. Thank you, Mr. Chairman.

Mr. ROE. The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

San Diego has been in the forefront in developing new approaches to addressing your city's sewage treatment needs. The tremendous amount of credit goes to the Senator as mayor and to his highly respected water utilities director, Mr. King. Mr. King, the last time we considered clean water amendments in 1981, we had a grant eligibility for the San Diego aquaculture project. Will you give us a progress report on how that project is progressing and what the current funding situation is?

Mr. KING. Thank you, sir.

The city of San Diego was fortunate to receive the amendments to the Clean Water Act designating its aquaculture sewage treatment process total resource recovery system as an innovative and alternative process.

As a result of that action, the city has applied for the grant funding to proceed with the facility to do what that technology wants done, what is a total recycle of sewage to potable water, generation of electricity and so on. We have filed our reports with the State water resource control board. It is my understanding within 2 or 3 weeks we will be getting approval to proceed with the rest of the construction on that project.

As far as the first portion on the aquaculture, we have under construction a 1-million-gallon-a-day facility, and it ought to be starting operations between November and December. So if any of you are out in the San Diego area, I extend a very cordial invita-

tion to you to see our recycle system in action, which is pretty much the result of efforts taken by the Congress.

Mr. HUNTER. Could you, Dick, tell us what this is? I think it is extremely interesting. Tell them how you set this up with the hyacinths.

Mr. KING. In essence, what we have done has been to take a page from the way nature treats its wastes and that is, we have put a swamp in a tank. We have six plastic-lined tanks, and we have started out by loading the tanks, scooping up the muck and animals from the San Diego River, so we could seed the tanks with the animals that are in the natural environment.

We have raw sewage going directly into the tank, it is not pretreated by primary or secondary treatment. It is raw.

We have mosquito-eating fish, we have the water high assignments, we got the idea from the NASA because they have an unusual ability to remove toxic substances, heavy metals, herbicides, and pesticides. In essence, it is simple, nothing mechanical. It has been running for two solid years. There has never been a failure, no odor, no mosquitoes, and produces a water spore to water product from secondary treatment, using the standards of suspended solids and DBD removal.

It is working very well.

Mr. STANGELAND. Mr. King, how is this impacted by EPA's categorical requirement for pretreatment if you are talking about raw sewage? They are talking about primary treatment.

Mr. KING. When I appeared before you, I believe it was about 5 years ago, it was because EPA was not granting innovative funding unless the treatment was relative to secondary treatment, innovative to secondary treatment.

I think I was asked why this was—wasn't there something in the law that made this aquaculture grant fundable anyway and I testifed that it was. But it was the way the law was being handled by EPA.

With your putting the amendment in there declaring this to be an innovative and alternative process made it possible for us to use raw sewage to go straight to aquaculture and we don't secondary treat at all.

Mr. STANGELAND. Much discussion has taken place in the past years about whether the Act's pretreatment authorities can be improved. Can you share your thoughts of how the pretreatment program could be improved?

Mr. KING. I think the pretreatment act—speaking generally—could be improved by putting more control at the local level and letting standards be set to fit the various industries that are peculiar to a local city, something along that line.

Mr. STANGELAND. Thank you very much.

I just want to, with 1 more minute, state that I tend to agree with the gentleman from Pennsylvania on the cost sharing of the project and I will state why.

I am sure that none of us here would think that San Diego or California ought to be liable or responsible for Mexico's pollution. On the other hand, I am not sure that the Federal Government has total responsibility either but, because of the economics and facts that are there, somebody has to do it and we have to protect our-

selves. But there is a tremendous benefit to California to get this sewage treated and cleaned up, so I think California has a share in this.

I would hope the delegation and our Government in whatever fashion would approach Mexico and see what portion Mexico might want to share in lieu of the pumping plant facilities they are talking about.

I also see that if we are going to build this plant we ought to build it on our soil so that we can control it and run it and make sure it is operable.

Thank you very much.

Mr. ROE. Are there any further questions for the witnesses?

The gentleman from Minnesota, Mr. Weber.

Mr. WEBER. Thank you, Mr. Chairman.

I just want to say I am fascinated by the process you described, Mr. King, the aquaculture treatment. I do not want to tie the committee up or the panel longer, but you described the impact of that treatment. Could you tell us a little about the economics of it?

How does it work out, how does it compare in terms of up-front costs, long-term maintenance costs and that sort of thing, as opposed to conventional treatments?

Mr. KING. Everything we have done on that matter has been estimated, no plant of a large operational size has been built so there is no hard data to make a comparison, but we have done a considerable amount of estimating over the years and the costs seem to run something about like this: It runs about 10 percent to build an aquaculture facility in contrast to secondary treatment. These are general figures. As far as operations, it is substantially less costly.

First of all, there is no hardware in it, no gears. When you go there, all you see are plants growing. There is no wheels, no catwalks, no concrete, no transformers, nothing in the way that you would see in a normal sewage treatment facility.

What we have done—the cost figure I will give you now, however, may be peculiar only to San Diego because the city of San Diego has to import about 90 to 95 percent of its water. We only have enough rainfall in San Diego for about 50,000 people. So drinking water is a major problem.

Now, the cost comparison I give you now is relative to San Diego and if you were to add up what a homeowner would pay for their water and sewer bill, the city of San Diego could provide that service to its citizens for about 60 percent of present costs if we had a recycle system in contrast to the conventional treatment of where we live in a society where we use it once and throw it away type of thing.

So that is about the best data we have now. The high assignments do digest it. In our original estimating, we felt they would produce 30 percent of the electrical needs; however, we find now it will produce almost 100 percent of our electrical needs.

I say further, the aquaculture process gets rid of ammonia, which is a substantial savings when we go to total recycle.

Mr. STANGELAND. Would the gentleman yield?

Mr. WEBER. I yield to my colleague from Minnesota.

Mr. STANGELAND. How about from raw sewage to potable water, how long a timeframe are we talking about?

Mr. KING. From the start we were told that this would take about 10 days or work out to be a 1 acre, or about 10 acres per million gallons. What we are doing is running 2 to 3 days per million gallons in retention time in the aquaculture being 3 to 3½ days. After the aquaculture we run it through a final mechanical process which is called reverse osmosis. We use carbon absorption and chlorination. That removes the final salt and viruses.

Years ago we, for the University of California—personally, we injected polio virus on it and found the reverse osmosis removed the viruses. We felt this to be a major breakthrough in the technology. What we needed then was something that would provide a clean water for the reverse osmosis in aquaculture. This seems to be it.

Mr. PACKARD. Would the gentleman yield?

Mr. WEBER. I yield to the gentleman from California.

Mr. PACKARD. I think it would be helpful for members of this subcommittee and the committee to have some of the latest information on your project. I have read some very interesting background and current material on it. It is an exciting innovative idea that has been tested now to the point where I think it is virtually operational or could be. It might be helpful if that information were made available.

Mr. KING. I would be happy to do that.

[The information requested had not been received by the Subcommittee at time of publishing.]

Mr. ROE. Further questions?

Mr. WEBER. No more questions, Mr. Chairman.

Mr. ROE. The gentleman from Oregon.

Mr. SMITH. I think you make a strong case, especially for the emergency nature of the problem.

One can't help but recall the debate in the Congress, however, regarding our additional $8.5 billion to the IMF, and recall also that huge amounts of the IMF funding to South America, Mexico in particular—and obviously we look at the situation in which the American taxpayer puts up $8.5 billion and then we see Mexico loaning Cuba money.

I wonder if there has been any effort to go to the Secretary of the Treasury through the IMF and at least request that this is an important problem to this country as well as to Mexico, asking for funds through the IMF kind of leverage?

Mr. HUNTER. I do know, Mr. Smith, that our Ambassador is currently embarked on a plan somewhat along the lines you have described. As I understand, he has been working with the World Bank to see if they would be amenable to making that loan. They have a division that makes loans on sewage projects. He is working along that line and of course that will require the cooperation of the Mexican Government because they are the people making the loan and the people to be paying it back.

So I think the situation described by myself and by the Senator, particularly with respect to the fact that we will be building a desalinization plant that we will pay $500 million for to send them clear water, and we get raw sewage, all indicates it is not an equitable or fair situation. But I do not think it is going to be realistic to see them being in the financial position they are in to be able to pick up the tab for this entire project.

We should work with them, however, and we should use leverage with them as we go down the line. Perhaps we should slow the desalinization funding as we fund this operation. But I think it is very important that we take this first step and that we provide the leadership.

We have waited for them for many years to take action and they have told us that they would do it in the near future, and this action has not taken place.

Mr. ROE. We want to thank you very much for a very solid presentation. I think you have given us the background we need to consider this issue and we will work on it.

Mr. HUNTER. We appreciate, Mr Chairman, the time that you have given us for participation of our members and colleagues.

Mr. ROE. Our next witnesses are Hon. Richard Ottinger, Hon. Hamilton Fish, and Hon. Gerald Solomon.

We want to welcome our distinguished Representatives from New York, and extraordinary leaders in the area of the environment. You have made enormous contributions to this Nation of ours. We are pleased to have you with us. What you add to our deliberations is of great help to us in determining the direction of this legislation.

Having said that, we welcome you.

The full text of your prepared statements will appear in the record at this point.

[Prepared statements referred to follow:]

PREPARED STATEMENT BY REPRESENTATIVE RICHARD L. OTTINGER OF NEW YORK

Mr. Chairman, I would like to address the PCB contamination of the Hudson River, a threat to public health that we have sought to eradicate since the early 1970's.

This subcommittee moved decisively to clean up the Hudson in the Federal Water Pollution Control Act of 1980. But our efforts have been thwarted by the repeated obstacles placed, apparently deliberately, by the former administration of the Environmental Protection Agency.

I believe it is imperative that you act in the Federal Water Pollution Control Act of 1983 to insure finally that this contamination is rendered harmless. And I ask you to conduct close oversight of EPA actions to carry out a clear mandate from Congress on this.

Let me provide the background:

THE PROBLEM

For about 25 years, until 1977, General Electric's capacitor manufacturing plants at Fort Edward and Hudson Falls discharged thousands of tons of PCB's (polychlorinated biphenyls) into the Hudson River. It is estimated that more than 600,000 lbs. of PCB's are in the Hudson River today.

PCB's are an acute health risk. They enter the body through eating, through breathing and through the skin. The International Agency for Research on Cancer reports PCB's to be carcinogenic in animals. There is evidence that pregnant women exposed to PCB's have much higher incidents of birth defects, still births and genetic deviations. Long term exposure will lead to liver abnormalities as well. As PCB's accumulate in the body thay cause skin lesions, nausea, vomiting and respiratory distress.

EPA, itself, has determined PCB's to be a health hazard. As early as 1978 it declared PCB's to be a "priority toxic pollutant". It has also determined PCB's to be a "hazardous material" under TOSCA (Toxic Substance Control Act) as well as a "hazardous waste constituent" in 1980.

THE SOLUTION

In October 1976 New York State established the PCB Settlement Advisory Committee of leading experts on PCB's. It conducted a thorough study of this problem for seven years. It proposed, and EPA concurred, dredging or rendering harmless all known PCB hot spots. The committee further proposed that a site located in Washington County be used to "encapsulate" the dredge spoils. This could be done on this site because it consists mostly of clay, a relatively impermeable material and, therefore, a natural barrier to water migration. A clay cap over the top would provide complete enclosure. Any water filtered through the site would be collected by an underdrain, analyzed and, if necessary, treated. PCB's are known to adhere to sediment particles, therefore it is unlikely that the chemical would travel with migrating water. Additionally, 18 inches of heavily seeded top soil would be maintained on the site to cover the clay cap and prevent its exposure to the elements.

In September 1978, New York State Department of Environmental Conservation applied to the U.S. EPA for a section 201 grant for $30.5 million to dredge and encapsulate the PCB contaminated sediments. EPA ruled that the project was ineligible under the construction grants program.

In November 1978, N.Y. DEC applied to EPA for funds under the provisions of both section 105, reclamation-demonstration, and section 115, removal of in-place toxic substances. EPA rejected the project for lack of funds although the proposed project was deemed to be within the provisions of these sections.

In 1980, Congress amended title I of the Federal Water Pollution Control Act (Clean Water Act) to direct the Administrator of EPA to negotiate a section 201 grant with N.Y. DEC the project. In that act Congress authorized $20 million for this "demonstration project."

Finally in September, 1982, just two months earlier, an environmental impact statement for the project was approved by the regional administrator of EPA. Yet three months later, in December, 1982 then EPA Administrator, Anne Burford, declined to spend the money authorized for the project and instead determined that PCB contamination of the Hudson River was a project better suited to Superfund than the Clean Water Act section 201, as specified by Congress.

EPA's justification for not funding the project under section 201 of the Clean Water Act was because of report language that indicated that if a "more appropriate source of funding for this clean-up effort" was available it should be utilized even though Superfund was designed to clean up land waste dumps, not to dredge rivers.

After having the project listed on the national priority list—which, is something that only happened this past month. A remedial action master plan is now being prepared for this project by EPA. This is the first step in the Superfund process and has occurred because of continued congressional clamor.

EPA's red tape torrent would be less exasperating if we were finally on our way to cleaning up the Hudson. But EPA has fully intended all along to defy Congress and kill the project. In the course of a lawsuit by Scenic Hudson et al. against EPA seeking to require it to commence clean-up, documentation has surfaced which reveals this clear intent. For example, as early as September 1981 an internal EPA memo from Jeff Zelikson, of the N.Y. EPA office discusses a meeting that took place between John Hernandez, Deputy Administrator and Congressman Solomon. That memo said:

"The availability of 'Superfund' money for the PCB project per se would not necessarily equate to the availability of $68 million in 'Superfund'. In other words 'Superfund' money is available which knocks out 201 money but is not available for the PCB project."

This indicates that an internal EPA decision had been made to kill the project using the theoretical availability of 'Superfund' as a ruse.

In addition the lawsuit disclosed notes from a meeting in November 1981 in which Ms. Burford expressed the hope that the New York State Industrial Hazardous Waste Facility Siting Board "will kill it" (meaning the project). We also have notes from a July 1982 meeting when Dewling, acting regional administrator, states that "the Administrator wants to stop project."

This deliberate thwarting of Congress and failure to address an important health hazard is intolerable.

Thirty-one Members of Congress from both the New York and the New Jersey delegations recently appealed to the current Administrator of EPA William Ruckelshaus, to commence immediate work on dredging the PCB's. We proposed that EPA begin the dredging immediately under section 201 of the Clean Water Act and that Superfund be used for what it was intended, cleaning up the hazardous waste that

would be generated on land by the dredging operation. We await his reponse, which has been promised by the end of September.

Mr. Chairman, three years after you acted to solve this problem, no action has been taken to remove the PCB's in the Hudson. I now ask your help to end this threat to public health. I respectfully request that your committee closely investigate EPA's refusal to carry out the mandate Congress gave it and that you include language in the Federal Water Pollution Control Act of 1983 that will mandate the cleanup of the Hudson in the event that EPA fails to act by the expiration of the Act on September 30th.

TP Cx J Frogg 6L

Dwolm Ex 19

Sept. 16, 1981

Connie,

Shelly Holm had a telephone conversation with Jack Weber from the Headquarters Office of Congressional Affairs.

Weber attended a meeting that took place with Hernandez and Solomon.

In that meeting Hernandez said that HQ would let us go forward with the final EIS but say that 'Superfund' money not 201 funds would have to be used to finance the project

The availability of 'Superfund' money for the PCB project per se would not necessarily equate to the availability of $68 million in Superfund. In other words 'Superfund' money is available which knocks out 201 money but is not available for the PCB project.

I am going to get time on Dick's calendar for early next week (Monday, if possible) to see if we can get something definitive from HQ by having Dick call Wil Field or Hernandez.

JZ

cc: DeLaura / Manning / Maher
Atella / Walka / Rohn

Dick Dowling
Jim Marshall
Shelly Holm
Rich Welha
Jo Maher

Herb Barnard
Bob Wang

Summary Mtg w/ Gorsuch
on Mon 11-30-81

Haddon, Field,
Fearnley

- Dick recommended 201 $1 now
- What Field says re 201 money because other $ crisis
- Gorsuch feels siting board will hold it / Dick doubts
- We could delay project based on insurance policy
- Dick recommended if political decision to go or not to go
- Rich answered ocean dumping question, incin, sed
- EIS may have to go thru "filter process"
- Uncomfortable w/ getting on land
- Do not push siting board issue.

Dick thanks everyone

Dwilson
9-1-8

7/28/82

PCB Project (Mtg w/ Dick Dowling, J Marshall, K Callahan, B Mudzynski)

- Dowling - Admin. wants to drop project
  - Money could not be rolled back to NYS for general grants, etc.
- Considerations
  - Funding issue not to be addressed in EIS
  - Fens & Pondsbrooke storage - already have several sites around country.
  - Rate of Recovery - 30% removal not enough to determine rate.
  - Burden of Proof - higher std of protection issue variance given by RA needed therefore how can a statement of higher degree of protection (Con landfill show it provides a higher std of protection)

- Bell - challenge Vanvalen's decision regarding use of the $20M by NYS. Only basis to kill project should be over lack of confidence that a higher degree of protection will be provided.

- Walka (phone) - The $40M project is preferable There is a variable danger of

uncertainty with the $20M project.
Can look not gain with $20M project.
No guarantee that the $40M project
will provide a higher degree of
protection. Peer review also raises
some reasonable uncertainty.

Alternative project - continue with
a monitoring program.

Prepared Statement of Hamilton Fish, Jr., of New York

Mr. Chairman and members of the Subcommittee. Congressman Ottinger has already outlined the background of the PCB Reclamation Project and its ill-fated history. I would like to focus my remarks on the need for the continuing authorization for this project in the Federal Water Pollution Control Act.

In 1980, Congress obligated funds for the Environmental Protection Agency to clean up PCB hot spots in the Upper Hudson River. This was done by amending Title I of the Federal Water Pollution Control Act and directing the Administrator of EPA to negotiate a section 201 grant with the New York State Department of Environmental Conservation for removing and encapsulating PCB contaminated sediments from these hot spots.

In December of 1982, a decision was made by EPA that this project was more suitable funded under the Superfund legislation even though this was not the intent of Congress. Despite that ruling this project was not placed on the Superfund list or National Priority List until one month ago. Even this does not ensure the cleanup of this toxic waste from the Hudson River; in fact, the General Accounting Office has reported that it takes an average of 3 years for the EPA to come to a decision on a Superfund targeted project much less clean it up. Only 2 projects in the history of Superfund have been funded in Region II which includes New York, New Jersey, the Virgin Islands, and Puerto Rico.

Needless to say, we cannot afford to waste time. The flow of the PCBs down river has increased with last Spring's heavy rains. A recent Boston Globe article cites high levels of PCB contamination in the Blue Fish and Striped Bass in Massachusettes and other areas of New England resulting possible from the fact that both of these fish pass the mouth of the Hudson in northern migration.

A U.S. Geological Survey has reported that during certain time periods in the Spring of this year, one hundred pounds per day of PCBs washed over the Troy Dam. The survey also showed that the scouring done by natural river low conditions has re-exposed PCB sediments allowing this toxic chemical to move freely downstream.

Mr. Chairman, 6 towns get their drinking water directly from the Hudson River: Rhinecliff, Port Ewen, Waterford, Red Hook, Highland, and the city and part of the town of Poughkeepsie. I cannot emphasize strongly enough the great need to remove this toxic substance from the Hudson and reauthorize the $20 million which Congress authorized in 1980. I also support Congressman Ottinger's request for a formal inquiry into the EPA's handling of the PCB project. For 3 years we have been subject to questionable delays and evasive responses from the EPA regarding this project. I look forward to the removal of PCBs from the Hudson as expeditiously as possible.

Thank you.

Prepared Statement by Representative Gerald B. Solomon of New York

As the Congressman who represents one of the largest sections of the Hudson River, I have been increasingly involved in the efforts to restore this majestic waterway. I favor renewal of this valuable natural resource, but not at the expense of the health and livelihood of the people who live in the Hudson Valley. I will continue to pursue alternatives to dredging and landfilling which address both the public health and the environmental concerns which have been raised. I believe that funds should be made available under Superfund for permanently capping PCB hotspots in the river and for the construction of activated carbon filtration systems to replace outdated water systems along the Hudson River.

Capping the hotspots in place would prevent additional PCBs from entering the water column of the lower Hudson and would eliminate the environmental and health risks associated with dredging and landfilling. Limited capping and monitoring of the hotspots could be conducted to determine the feasibility of a full scale capping project.

Dredging and landfilling PCB's is the wrong solution. Environmental experts agree that the Northeastern United States is totally unsuitable for landfilling because the watertable is too high. In fact, the watertable at the proposed landfill in Ft. Edward would be less than 5 feet from the bottom of the landfill.

My primary concern is the health of the people I represent in the Hudson Valley. I believe that we should do everything possible to limit the contact of PCBs to the public by replacing the water filtration systems in the localities such as Port Ewen, Waterford, Hiland, and Rhinebeck. The construction of activated carbon filtration

systems designed to filter all forms of hydrocarbons such as PCBs and heavy metals would be a wiser expenditure of federal funds from a human health perspective.

Doctor Joseph O'Connor, an aquatic toxicologist with New York Medical University, strongly supports the approach I have outlined. Dr. O'Connor believes that dredging will unnecessarily release large amounts of PCBs into the water column of the river. He favors a capping alternative and has stated that capping can be effective in an active energy environment such as the upper Hudson. He is currently working with the Army Corps of Engineers on their successful efforts at containing capped PCB contaminated material in the ocean. The Environmental Impact Statement on the PCB Demonstration Project was completed prior to the successful capping of contaminated material by the Corps.

I would also like to comment briefly on the public concern which has been raised with respect to Section 113 of the Clean Water Act. In a letter to EPA, the President of the New York State Farm Bureau expressed the strong opposition of the Farm Bureau to the PCB Demonstration Project. His letter states, "The recommendations which were not supported by all members of the PCB study committee, has met violent local opposition. All local legislative bodies, town, municipal and county, have publicly opposed the project as well as citizen groups and the farm community through their Farm Bureau organizations."

On April 21, 1982, the Greene County Legislature approved a resolution expressing their concern that the PCB proposal to expend over $25 million for dredging less than 25% of the PCBs deposited in the river will result in the stirring up of otherwise dormant chemicals into the water column. Their resolution, approved 12 to 0, states that the dredging may jeopardize the drinking water in localities along the Hudson River.

On April 28, 1982, the Saratogian newspaper stated, "Not only would the huge PCB dump pose a potential hazard to farmers and residents but it would likely lead to prolonged and costly lawsuits down the road if farmers seek restitution for damaged crops or milking cows contaminated by the toxic waste. The plan to dump the PCBs in this area is extemely ill-advised and goes directly against the wishes of the people who will have to live with it."

In addition, there is a major legal problem concerning the proposed landfill. A recent court decision prohibits the use of the landfill identified and selected by the State Department of Environmental Conservation. In other words, there is no landfill to dump the PCB dredged material. This may mean that the contaminated material will be dumped in the New York bight, which could consequently jeopardize the New York and New Jersey Atlantic shore.

Criticism of the EPA's decision to shift funding for the project to Superfund in unfounded. Anyone who actually takes the time and effort to read the law can see EPA is acting in accordance with the Congressional intent of the Act.

Section 116(b) of the Clean Water Act states that funds allotted to New York under section 205 shall be available under this subsection only to the extent the funds are not available, as determined by the Administrator, under a comprehensive hazardous substance response and cleanup fund.

Subsection (a) contains a provision which states that no pollutants removal pursuant to this paragraph shall be placed in any landfill unless the Administrator first determines that disposal of the pollutants in such landfill would provide a higher standard of protection of the public health, safety, and welfare than disposal of such pollutants by any other method including, but not limited to, incineration or chemical destruction process.

According to Dr. O'Connor dredging PCB hotspots will compound the existing problem. By stirring up the remaining silt, the levels of PCBs downstream will be raised to a point that no future dredging of the deep water channel will be allowed. There will be no place to deposit the dredging PCB material.

It is inaccurate and misleading to imply that the failure to implement the PCB Dredging Project will threaten the New York harbor or impede the recovery of a national waterway. According to a 1982 report by the National Oceanic and Atmospheric Administration . . . PCBs from the hotspots in the upper river is a relatively minor contribution to the harbor sediment compared to PCBs from other sources. The report concluded that given the restrains under section 113 of the Clean Water Act the project will not demonstrate recovery of a national waterway or alter the concentrations of PCB's in the New York Harbor setiments.

The beauty and purity of the Hudson River, one of the greatest river systems in the world, must be restored. However, in their rush for federal money, some so-called environmental organizations have lost sight of this purpose. Section 116 of the Clean Water Act is an ill-planned attempt to clean up the river and ignores the

negative consequences of human health and safety. I will continue to oppose any action which endangers the public health and the agricultural pase of the region.

Mr. ROE. Please proceed.

TESTIMONY OF HON. RICHARD L. OTTINGER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK; HON. HAMILTON FISH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK; AND HON. GERALD B. SOLOMON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. OTTINGER. Thank you very much, Mr. Chairman. I appreciate your giving us the opportunity to testify this morning on the subject of PCB contamination of the Hudson River.

This is a great public health threat we have sought to eradicate since the 1970's. Your subcommittee moved decisively to clean up PCB's in the Hudson in the Water Pollution Control Act of 1980. Your mandate set forth in the law was deliberately thwarted by the former administration of the Environmental Protection Agency, as I will demonstrate irrefutably in a few minutes.

Unfortunately, the new EPA administration has not yet committed itself to take action. In my opinion, EPA's decision on this matter will be a good test of the commitment they have to rectify the sins of the past and carry out the law.

I believe it is imperative that you act in the Federal Water Pollution Control Act of 1983 to insure finally that this contamination is rendered harmless. And I ask you to conduct close oversight of EPA actions to carry out a clear mandate from Congress on this.

Let me give you some background.

For about 25 years, until 1977, General Electric's capacitor manufacturing plants at Fort Edward and Hudson Falls discharged thousands of tons of PCB's, polychlorinated biphenyls, into the Hudson River. It is estimated that more than 600,000 pounds of PCB's are in the Hudson River today.

PCB's are an acute health risk. They enter the body through eating, through breathing and through the skin. The International Agency for Research on Cancer reports PCB's to be carcinogenic in animals. There is evidence that pregnant women exposed to PCB's have much higher incidents of birth defects, still births and genetic deviations. Long-term exposure will lead to liver abnormalities as well. As PCB's accumulate in the body they cause skin lesions, nausea, vomiting, and respiratory distress. EPA itself has determined PCB's to be a health hazard. As early as 1978, it declared PCB's to be a priority toxic pollutant. It has also determined PCB's to be a "hazardous material" under TOSCA, Toxic Substance Control Act, as well as a "hazardous waste constituent" in 1980.

In October 1976, New York State established the PCB settlement advisory committee of leading experts on PCB's. It conducted a thorough study of this problem for 7 years. It proposed, and the EPA concurred, dredging or rendering harmless all known PCB hot spots.

The committee further proposed that a site located in Washington County be used to encapsulate the dredge spoils. This could be done on this site because it consists mostly of clay, a relatively impermeable material and, therefore, a natural barrier to water migration. A clay cap over the top would provide complete enclosure.

Any water filtered through the site would be collected by an underdrain, analyzed and, if necessary, treated. PCB's are known to adhere to sediment particles, therefore it is unlikely that the chemical would travel with migrating water. Additionally, 18 inches of heavily seeded topsoil would be maintained on the site to cover the clay cap and prevent its exposure to the elements.

Along this line, I fully understand the position taken by our colleague, Mr. Sullivan; however, there are other ways of dealing with these pollutants, such as in tanks, and so forth.

In September 1978, New York DEC applied to EPA for funds under the provisions of both section 105, reclamation-demonstration, and section 115, removal of inplace toxic substances. EPA rejected the project for lack of funds although the proposed project was deemed to be within the provisions of these sections.

In 1980, Congress amended title I of the Federal Water Pollution Control Act, Clean Water Act, to direct the Administrator of EPA to negotiate a section 201 grant with New York DEC the project. In that act, Congress authorized $20 million for this demonstration project.

Finally in September 1982, an environmental impact statement for the project was approved by the regional administrator of EPA. Yet 3 months later, in December 1982, then EPA Administrator Anne Burford declined to spend the money authorized for the project, and instead determined that PCB contamination of the Hudson River was a project better suited to Superfund than the Clean Water Act section 201, as specified by Congress.

EPA's justification for not funding the project under section 201 of the Clean Water Act was because of report language that indicated that if a more appropriate source of funding for this clean-up effort was available, it should be utilized even though Superfund was designed to clean up land waste dumps, not to dredge rivers.

After having the project listed on the national priority list, which is something that only happened this past month, a remedial action master plan is now being prepared for this project by EPA. This is the first step in the Superfund process and has occurred because of continued congressional clamor.

EPA's redtape torrent would be less exasperating if we were finally on our way to cleaning up the Hudson. But EPA has fully intended all along to defy Congress and kill the project. In the course of a lawsuit by Scenic Hudson, et al., against EPA seeking to require it to commence clean-up, documentation has surfaced which reveals this clear intent.

For example, as early as September 1981, an internal EPA memo from Jeff Zelikson of the New York EPA office discusses a meeting that took place between John Hernandez, Deputy Administrator, and Congressman Solomon. That memo said:

> The availability of Superfund money for the PCB project per se would not necessarily equate to the availability of $68 million in Superfund. In other words, Superfund money is available which knocks out 201 money but is not available for the PCB project.

This indicates that an internal EPA decision had been made to kill the project, using the theoretical availability of Superfund as a ruse.

In addition, the lawsuit disclosed notes from a meeting in November 1981 in which Ms. Burford expressed the hope that the New York State Industrial Hazardous Waste Facility sitting board will kill it, meaning the project. We also have notes from a July 1982 meeting when Dewling, Acting Regional Administrator, states that "the administrator wants to stop the project."

I am submitting these documents to the committee because they produce irrefutable evidence that the EPA was intent on thwarting the will of Congress.

Thirty-two Members of Congress from both the New York and the New Jersey delegations recently appealed to the current Administrator of EPA, William Ruckelshaus, to commence immediate work on dredging the PCB's. This included three Senators from the area and most of the Congressmen from the area.

I have a copy of that letter which I would submit for the record.

Mr. ROE. Without objection, so ordered.

[Copy of letter follows:]

CONGRESS OF THE UNITED STATES,
HOUSE REPRESENTATIVES,
Washington, D.C., July 27, 1983.

WILLIAM D. RUCKELSHAUS,
Administrator, Environmental Protection Agency,
Washington, D.C.

DEAR BILL: We would like to thank you for taking the time to meet with us today. We believe that this meeting afforded an excellent airing of all of the opinions on the complicated subject of PCB contamination of the Hudson River.

We would like to reiterate a proposal made at the meeting today, which we believe has great merit and should be seriously considered by the Environmental Protection Agency.

In 1980 Congress obligated funds for EPA to clean up PCB 'hot spots' in the upper Hudson River. This was done by amending Title I of the Federal Water Pollution Control Act and directing the administrator of EPA to negotiate a section 201 grant with the New York State Department of Environmental Conservation for removing and encapsulating PCB contaminated sediments from these 'hot spots'.

December 1982 a decision was made by EPA that this project was more suitably funded under the Superfund legislation. While this was clearly not the intent of Congress, we would all like to see the problem dealt with as expeditiously as possible. Therefore we would propose that EPA settle the outstanding suit regarding the use of section 116 funds, use the funds already allocated to perform the dredging operation, and use the Superfund to fund the ultimate disposal of the waste by construction of incinerators or other disposal methods.

We have every confidence the State of New York will provide adequate temporary storage facilities for the dredged spoils.

It is clear that all of the members of Congress who were present, and many who were unable to attend, consider this issue to be of prime importance. Congress has indicated that it wants strong and immediate action taken to reduce the contamination of the Hudson River. The health and well-being of the people who live, work and play along the shores of the Hudson must be protected. It is important that we protect the environmental integrity of the river if we are to have a river into the next century.

We would like to request that you consider this proposal seriously. We believe that it is a compromise in the best interests of the people that we all serve. Because of the September 30th expiration of the authorizations under section 116 of the Clean Water Act, we request an answer by August 5, 1983 as to the feasibility of these suggestions.

Sincerely,

Richard Ottinger, Hamilton Fish, Jr., Daniel Moynihan, Bill Bradley, Frank Lautenberg, Stan Lundine, Robert Roe, James Howard, Matthew McHugh, Tom Downey, Benjamin Gilman, Robert Mrazek, Sherwood Boehlert, Joseph Addabbo, James Scheuer, Ted Weiss, Stephen Solarz, Edwin Forsythe, Charles Rangel, Geraldine Ferraro, Frank Horton, Charles Schumer, Samuel Stratton, Edolphus Towns, Raymond McGrath, Gary Ackerman, Mario Biaggi, Bill Green, John LaFalce, Henry Nowak, Robert Garcia, Major Owens.

Mr. OTTINGER. We proposed that EPA begin the dredging immediately under section 201 of the Clean Water Act and that Superfund be used for what it was intended, cleaning up the hazardous waste that would be generated on land by the dredging operation. We await his response, which has been promised by the end of September.

Mr. Chairman, 3 years after you acted to solve this problem, no action has been taken to remove the PCB's in the Hudson. I now ask your help to end this threat to public health. I respectfully request that your committee closely investigate EPA's refusal to carry out the mandate Congress gave it and that you include language in the Federal Water Pollution Control Act of 1983 that will mandate the cleanup of the Hudson in the event that EPA fails to act by the expiration of the act on September 30.

I and Mr. Fish, who initiated this, feel this matter should be undertaken immediately.

Last, I would like to say that Congressman Solomon has suggested the possibility of somehow or other covering up these PCB's. The scientific evidence on that—would that it can be done because it would be a lot cheaper—indicate that it would be totally infeasible. It would increase the rapidity of the flow over the area covered and carry the PCB's on to the banks and aggravate the situation rather than solving it.

Thank you very much for your interest and your patience.

Mr. ROE. Congressman Fish.

Mr. FISH. Thank you, Mr. Chairman and members of the subcommittee. Congressman Ottinger has already outlined the background of the PCB reclamation project and its ill-fated history, and the communication of July 27, which was submitted for the record, in which the suggestion is made that the funds available currently should be allocated to the dredging operation, and the Superfund to fund the ultimate disposal of the waste by destruction in incinerators that are presently in a pilot project by the EPA, should be instituted.

We think this is a sensible alternative but in the event that does not take place in the next few days, we need this reauthorization legislation.

I would like to focus my brief remarks on the need for the continuing authorization for this project in the Federal Water Pollution Control Act.

The December 1982 decision by EPA that this project was more suitably funded under the Superfund legislation clearly in our judgment violates the intent of the Congress. Despite that ruling, this project was not placed on the priority list until a month ago. Even this does not assure cleanup of the wastes from the Hudson River.

The GAO estimates that it takes 3 years for the EPA to come to a final decision on the project much less clean it up. Only two projects have been funded in region 2 which includes New York, New Jersey, Virgin Islands, and Puerto Rico, a region notorious for the number of projects on the Superfund list.

Needless to say, we cannot wait for this period of time.

The flow of PCB's downriver has increased with last spring's heavy rains. A recent Boston Globe article sites high levels of PCB contamination in the blue fish and striped bass in Massachusetts and other areas of New England resulting possibly from the fact that both of these fish pass the mouth of the Hudson in northern migration.

A U.S. Geological Survey has reported that during certain time periods in the spring of this year, 100 pounds per day of PCB's washed over the Troy Dam. The survey also showed that the scouring done by natural river flow conditions has reexposed PCB sediments allowing the toxic chemical to move freely downstream.

Mr. Chairman, I have represented no less than four Hudson Valley districts in my time in the Congress, and I think it is significant that six municipalities along that river get their drinking water directly from the Hudson: Rhinecliff, Port Ewen, Waterford, Red Hook, Highland, and the city and part of the town of Poughkeepsie. I cannot emphasize strongly enough the need to remove this toxic substance from the Hudson and reauthorize the $20 million which Congress authorized in 1980.

I also support Congressman Ottinger's request for a formal inquiry into EPA's handling of the PCB project. For 3 years we have been subject to questionable delays and evasive responses from EPA on this matter. I look forward to removal of the PCB's from the Hudson as expeditiously as possible.

Thank you, Mr. Chairman.

Mr. ROE. Tell us what your thoughts are, Mr. Solomon.

Mr. SOLOMON. Thank you, Mr. Chairman.

It is good to be back in my old committee. Sometimes I wish I were still here, especially at this time.

Mr. Chairman, let me just try to outline my position as it was when I was on this committee and in which the committee worked closely with me. As the Congressman who represents one of the largest sections of the Hudson River, I have been increasingly involved in the efforts to restore this waterway and I favor renewal of this valuable natural resource, but not at the expense of the health and livelihood of the people who live in the Hudson Valley. I will continue to support the efforts in dredging and landfilling.

I believe strongly funds should be made available under Superfund for permanently capping PCB hotspots in the river and construction of activated carbon filtration systems to replace outdated water supply systems along the river in the six municipalities that Mr. Fish mentioned.

Capping the hotspots in place would prevent additional PCB's from entering the water column of the lower Hudson and would eliminate the environmental and health risks associated with dredging and landfilling. Limited capping and monitoring of the hotspots could be conducted to determine the feasibility of a full scale capping project.

Dredging and landfilling PCB's is the wrong solution. Environmental experts agree that the northeastern United States is totally unsuitable for landfilling because the water table is too high. In fact, the water table at the proposed landfill in Fort Edward would be less than 5 feet from the bottom of the landfill.

My primary concern is the health of the people I represent in the Hudson Valley. I believe that we should do everything possible to limit the contact of PCB's to the public by replacing the water filtration systems in the localities such as Port Ewen, Waterford, Highland, and Rhinebeck. That can be done under Superfund, it cannot be done under the Water Pollution Act.

The construction of activated carbon filtration systems designed to filter all forms of hydrocarbons such as PCB's and heavy metals would be a wiser expenditure of Federal funds from a human health perspective.

Dr. Joseph O'Connor, an aquatic toxicologist with New York Medical University and one of the renowned experts in this field, strongly supports the approach I have outlined. Dr. O'Connor believes that dredging will unnecessarily release large amounts of PCB's into the water column of the river. He favors a capping alternative and has stated that capping can be effective in an active energy environment such as the upper Hudson. He is currently working with the Army Corps of Engineers on their successful efforts at containing capped PCB contaminated material in the ocean.

I know you are very concerned about that, Mr. Chairman.

The environmental impact statement on the PCB demonstration project was completed prior to the successful capping of contaminated material by the corps.

I would also like to comment briefly in the public concern which has been raised with respect to section 113 of the Clean Water Act. In a letter to EPA, the president of the New York State Farm Bureau expressed the strong opposition of the Farm Bureau to the PCB demonstration project. His letter states, "The recommendations which were not supported by all members of the PCB study committee, has met violent local opposition. All local legislative bodies, town, municipal, and county, have publicly opposed the project as well as citizen groups and the farm community through their Farm Bureau organizations."

In addition there was a major legal problem concerning this landfill. This has to do with the landfill. A recent court decision prohibits the use of the landfill indentified and selected by the State department of environmental conservation. In other words, there is no landfill to dump the PCB dredged material. This may mean that the contaminated material will be dumped in the New York bight, which could consequently jeopardize the New York and New Jersey Atlantic shore.

Criticism of the EPA's decision to shift funding for the project to Superfund is unfounded. Anyone who actually takes the time and effort to read the law—as you and I have written it—can see EPA acting in accordance with the congressional intent of the act.

Section 116(b) of the Clean Water Act states that funds allotted to New York under section 205 shall be available under this subsection only to the extent the funds are not available, as determined by the administrator, under a comprehensive hazardous substance response and cleanup fund.

In addition, Mr. Chairman, when Mr. Moynihan offered the pilot project and it was accepted in the Clean Water Act, I amended his

pilot project and inserted this language which was unanimously accepted by the Congress in both Houses.

It states, subsection (a) contains a provision which states that no pollutants removed pursuant to this paragraph shall be placed in any landfill unless the administrator first determines that disposal of the pollutants in such landfill would provide a higher standard of protection of the public health, safety, and welfare than disposal of such pollutants by any other method including, but not limited to, incineration or a chemical destruction process.

According to Dr. O'Connor dredging PCB hotspots will compound the existing problem. By stirring up the remaining silt, the levels of PCB's downstream will be raised to a point that no future dredging of the deep water channel between New York and Albany will be allowed. There will be no place to deposit the dredged PCB material.

Now this next point is important to you, Mr. Chairman, and other members in the New York-New Jersey area.

It is inaccurate and misleading to imply that the failure to implement the PCB dredging project will threaten the New York harbor or impede the recovery of a national waterway. According to a 1982 report by the National Oceanic and Atmospheric Administration, PCB's from the hotspots in the upper river is a relatively minor contribution to the harbor sediment compared to PCB's from other sources; namely, in the New York City area. The report concluded that given the restraints under section 113 of the Clean Water Act the project will not demonstrate a recovery of a national waterway or alter the concentrations of PCB's in the New York harbor sediments.

Mr. Chairman, you were at a meeting when Mr. Ruckelshaus stated that according to EPA records, 85 percent of the PCB problem in the New York City area was caused by pollutants coming from the New York City area and only 15 percent from the upper Hudson hotspots we are talking about here today.

That means that under the dredging project if we were to remove the 25 percent of the PCB-laden silt in the upper Hudson, if we removed just 25 percent of it, that means we would only remove 2 percent of the problem and if we are going to spend that kind of money maybe we ought to be taking that money now in the 205 funds for cleaning up the sewage that is being dumped in the rivers now, maybe that is where it ought to be.

If we keep diverting funds through these projects you will never solve your problem in New York City and New Jersey. That is why if you want to examine why this project was turned down, read the legal opinion by the EPA. Mr. Ruckelshaus said it would be very difficult for us to change that legal opinion because it was a legal opinion. I think if we are going to solve this problem perhaps we ought to look at it through Superfund and I think we will recover the Hudson River faster than the continued problems we are going to have with this through court actions that are going to continue to delay it for several years more.

Mr. ROE. We want to thank you for your other views. I know you have to go.

Mr. SOLOMON. They are calling me for a vote and I will be back to answer any questions.

Mr. ROE. Go right ahead.

Let me suggest—are there questions of the members by the way?

One thing I think we ought to get our act together on is that I happen to think that all your testimony has been excellent. We are all faced with the same problem. I come from New Jersey, as you know we have been through all the meetings, we have listened to all the drivel from the beginning. But let's get on with it. It has now been 3 years. I appreciate Jerry's point of view and I won't quarrel on the technical aspects or environmental aspects but we have to get one act together on the point of laying out what we will do, and evolve the technical decisions as we go but let's have a policy.

There isn't any policy at this time.

I think your testimony, Dick, and Ham, in relation to your followup on the point of view that we did move in that direction, that was very carefully worked out to get them to move. Then we go through the drill of, OK, you know, it will be in Superfund and whatever. But Superfund doesn't have the money, nor the expertise and we have been through that drivel.

But I think we should talk amongst ourselves as to language with the support of our colleagues from other parts of the country which I know we will support, we need a direction on this and a decision and policy. Isn't that fair commentary? And some confirmed action?

Mr. OTTINGER. I, if I may, Mr. Chairman, agree with you. We need a start on action on this. While our colleague from New York is correct that this will not resolve the whole problem you will never get the whole problem resolved unless you start somewhere.

We had an expert committee address this problem over a period of 7 years. They considered the questions that Dr. O'Connor raised and they determined the PCB's would not migrate as a result of the dredging. They determined that capping it would not be a solution but would contribute greater problems to us.

What we would like to do is see a start made.

One of the great ironies is that you and I from the time I came to Congress made a great campaign to clean up the Hudson River. We passed compact legislation here, we got sewage treatment plants built. Lo and behold the fish that had not disappeared from the Hudson came back.

Mr. ROE. Because of what we are doing, I am sure.

Mr. OTTINGER. The shad industry that thrived along the Hudson returned and now we are in a situation where the fishermen on the Hudson cannot sell the fish they catch because of the contamination by PCB's.

The fish have returned but they are contaminated. Today the people along the river are jeopardized, as Congressman Fish so aptly demonstrated, with communities actually taking drinking water from the PCB-contaminated area where you cannot even fish.

I would like to see a commitment from EPA to start cleaning up this problem.

Mr. ROE. If the gentleman would yield, let me point something out. We have received testimony on this—voluminous testimony

I have been here 14 years, but I would like to see something get done before I die. I don't know where the 14 years went. But basically the testimony, and we have reams of it that we have taken in the Water Resources Development Act—bear with me a second—together with the testimony we took from New York yesterday together with your views and our colleagues' views which we respect and understand. But the problem is this, yesterday they testified they needed $16 billion of which about $12 billion is needed almost immediately, and if they don't go into secondary treatment and have a sort of by year type of semiannual thing they would pass part of the secondary treatment back into the ocean.

We just held hearings in the spring vis-a-vis the capsulation portion along the bight. We just passed legislation unanimously in the interest of New York City and the country and that was a series of actions to be taken in the water resources development aspects. So we have a picture.

The irony is that unless we solve the ocean dumping situation there is not going to be any dredging per se in the Hudson River because it will just not be able to go ahead.

We are coming back and saying the environmental integrity of the Hudson River, and all the things we are doing to it both on my side of the river and your side of the river, have to be handled as a policy. We have to come back and say, well, let's make the policy but let's do something rather than sit there for another 7 years.

One day I would like to have an investigative hearing and I would like to isolate out of the billions of dollars that we have allocated and appropriated for EPA and for the Corps of Engineers and I would like to see how much has gone into studies, No. 1, which goes to the billions, hundreds of billions anyway; and we ought to see the timeframe. If it took 30 years or 18 years to get a project done, they have—we have, the Congress, because of delay, have increased the cost of those projects 500-fold and it is not getting the job done and that is your concern.

It is your concern, Jerry, and we understand it, you said it very well.

I would hope through the work we do and get the support of the Congress as we did on the water resources bill, and we get to a language for national policy on that. That is what we need. Frankly, other areas of the country and I have done a lot of study on this, are ahead of us in coordination of their delegations. I hope we can get something to emerge.

We want to thank you because you contributed heavily to our concern.

Jerry, when you went out we said let's nail down a policy position so we can—we can disagree on elements of it but a policy has to be established which I think you would buy.

Are there any other questions.

If not, colleagues, we thank you very, very much for your patience and very valued testimony this morning. It is most helpful to us.

In view of a transportation problem and a governmental problem, we are going to now call the Honorable Wayne Bryant, Assemblyman from the State of New Jersey, who has to get a plane

in a few minutes to fly back for a session of the New Jersey Legislature.

TESTIMONY OF HON. WAYNE BRYANT, NEW JERSEY ASSEMBLYMAN

Mr. ROE. We welcome you to our committee. We appreciate your effort of getting here and getting back.

I know you are in session so if you would go ahead.

Mr. BRYANT. I appreciate that, Congressman Roe.

Good morning Congressman Roe and distinguished members of the Subcommittee on Public Works.

I am Wayne Bryant, the State Assemblyman from the Fifth Legislative District in New Jersey.

It is an honor to be here today, representing the leadership of the New Jersey General Assembly. We in New Jersey have a particular interest in the proposal to reauthorize the Clean Water Act of 1972.

First of all, this bill has been sponsored by one of our Congressmen, Jim Howard. We are grateful to Congressman Howard for his tireless support of environmental legislation in New Jersey and nationwide.

And it is a pleasure to discuss this proposal with another fellow New Jerseyean—Chairman Bob Roe. We are thankful that you, too, share our concerns for the environment.

While all my colleagues in New Jersey support the reauthorization of the Clean Water Act, I represent a district that has a particular interest in this program. Camden County, part of which lies in my legislative district, is about to embark on its first project to be funded under the auspices of the Clean Water Act. We are the last major urban project left to be funded in New Jersey, and we are thankful that our turn has finally come.

Our project is being funded through the construction grant project authorized by the Clean Water Act.

I would like to return to a discussion about the Camden County project and the construction grants program later in my testimony. First, though, I would like to talk about some of the other provisions of this reauthorization proposal.

Congressman Howard has proposed amendments that will fine-tune what is basically an environmentally sound act.

These amendments are in response to political realities, technological developments and increased knowledge in the areas of water pollution control over the past 10 years.

I would like to highlight some of these amendments and speak briefly about a new proposal within the bill, that of estuary/bay management.

Discharge waivers for municipal treatment plants. The Environmental Protection Agency, region 2, recently denied applications for waivers eliminating secondary treatment of all sewage discharges from over 19 municipalities in the New York/New Jersey metropolitan region.

Because over 170 million gallons per day of raw sewage is being dumped into the Hudson River this was a major step in achieving the goal of the Clean Water Act. But the possibility for future

waivers must be eliminated in order to end the lethal pollution of this national resource.

Congressman Howard has wisely foreseen the need to close the loophole in the existing law which gives EPA the discretion to grant these waivers. This proposal greatly limits the number of municipalities that would be exempt from strict treatment requirements.

If the goals of the Clean Water Act are ever to be achieved we must enact and enforce the strict treatment requirements for municipally generated sewerage.

Downgrading of designated areas of bodies of water. The goal of the 1972 Clean Water Act is "fishable, swimmable waters by 1983." We are far from that goal. Any attempt to permit the downgrading of designated uses of bodies of water as proposed by EPA, including already existing high quality water, strikes at the heart of this goal.

Congressman Howard's amendments in this area would prohibit the altering of standards by which a State may change the designation of a stream classified for such uses as fishing, agriculture or industry.

They, in fact, go farther, by requiring that States upgrade a designated use for a body of water if the water quality exceeds the existing use.

It is only with measures of this type that we can assure that the destruction of our vital and irreplaceable water resources will not continue.

Estuary/bay management. Congressman Howard has included an important new proposal in his amendments. It is one that recognizes the need for a cooperative effort among States for the protection and development of shared water resources.

This amendment calls for the convening of a management conference whenever it is determined that an estuary area is being contaminated from more than one State.

In New Jersey we have two main bay areas that are vital to both the economic and environmental life of the State.

But they are also vital to our neighboring States of Pennsylvania, Delaware, and New York.

As we compete with these States in the race for economic development we must not forget that economic development and environmental protection are compatible, and mutually beneficial.

As proposed, these management conferences would ease the often difficult task of obtaining a cooperative effort among States to achieve both maximum environmental protection and economic benefit for all.

I wholly support the concept of federally directed estuary management.

I would like to return to a discussion of the construction grant program and commend the sponsor on his attempts to increase the funding in this area.

Since the enactment of the Clean Water Act of 1972 the State of New Jersey has participated in the Federal Water Pollution Control program.

Over the last 9 years, about $1.8 billion of Federal funds have been obligated in New Jersey for the construction of nearly $2.4

billion worth of wastewater treatment projects. In 1976, we hit a high point in our receipt of Federal wastewater construction funds. That year we received $520 million in Federal funds.

The State has also contributed to this wastewater construction program. Over the past 9 years, the legislature has appropriated approximately $270 million in State grants for water pollution control projects.

However, our current Federal authorizations represent a dramatic decline in the level of funding for this program.

New Jersey's fiscal year 1982 authorization was $85 million. We have received authorizations of $100 million a year for each of fiscal year 1983 through 1985. Only $385 million will be available through fiscal year 1985.

The current authorization will provide Federal funding at an average annual rate of less than half of the State's previous funding level.

The reduction comes at a particularly difficult time: the New Jersey Department of Environmental Protection has identified nearly $2.4 billion worth of projects which will be ready for construction within the next 4 years. That $2.4 billion represents 238 separate wastewater projects.

With our current authorization, only about 15 projects can be funded. This means that while the first stages of the pollution control projects which are constructed this year may be completed, the second and third stages will not be completed for about 20 years, if present funding levels are maintained.

This is of particular concern to me. I represent a district which will receive a grant for the first stage of a sewer treatment project. However, the second and third stages of that project are ranked number 35 and 110 on our statewide priority list. At the current funding rate, these projects won't be funded for years. The system will remain incomplete through the 1990's.

Permit me to tell you a little bit about the project in my district.

As I mentioned, I represent the city of Camden and several other municipalities in Camden County. In 1972, the Camden County Municipal Utilities Authority was organized to study, design, and construct a wastewater management system in Camden County. This is a regional system, of course.

The project was supposed to provide a new system for transporting and purifying wastewater. It was intended to alleviate the horrendous pollution problems in our streams and tributories including Haddon Lake, Newton Lake, Cooper River, Big Timber Creek, and Pennsauken Creek.

In accordance with the provisions of the 1972 Clean Water Act, the authority expected to receive a grant equal to 75 percent of the cost of this project. The State of New Jersey had adopted a program awarding 8-percent grants to be linked with the Federal program. Thus, the authority expected that 83 percent of the project costs would be paid with grant funds: 17 percent of the cost would be borne by local users.

Eligibility for project funding was and still is determined on the basis of an annual priority list established by the State's Department of Environmental Protection. This list is approved by the U.S. Environmental Protection Agency.

After 10 years of studying, designing, planning, and waiting, Camden County emerged as No. 1 on the 1982–85 priority list. For the first time we are eligible for funding. Ours is the last major regional sewer system to be undertaken in the State.

Our No. 1 priority project represents just the first stage of the treatment system. This will provide a sewer treatment plant which will serve the city of Camden. The remaining pieces, the hookups to the other communities in the county will be phased in later.

However, later for Camden County could be as far away as 20 years from now if current funding levels are maintained. If the construction grant program is eliminated, Camden County will never meet its clean water goals, and the residents of the county and surrounding areas will unfairly be penalized.

Camden County cannot afford to construct any or all of this project alone. The city of Camden, the hub of the county, is the poorest city in the State of New Jersey and among the poorest in the Nation.

Our residents, my constituents, cannot afford the user fees which would be required to construct that project without Federal assistance.

It is clear that New Jersey communities, and other cities and towns throughout the country, are relying on the Federal Government to renew its commitment to clean water goals.

These communities have been required to meet certain federally-mandated clean water standards. They have been promised the financial assistance necessary to do so.

For the most part, they can't afford to finance these projects alone and recent shifts in the Federal clean water policy have caused concerns within these towns.

The following are just mere examples of these shifts and changes in Federal policy.

President Reagan has slashed the total funding for this program from 75 percent to 55 percent of the project costs.

Planning and design grants have been discontinued.

The President has threatened to discontinue this program after fiscal year 1985.

Although Congressman Howard, Congressman Roe, and other concerned Members of Congress have vowed to continue to strengthen our Government's commitment to clean water standards, the uncertainty about the future of this program has created considerable concern at the local level. States and municipalities are attempting to devise ways to fill in the gaps.

In New Jersey, for instance, the State Department of Environmental Protection cut Federal grant funding levels from 75 percent to 65 percent of project costs 2 years ago.

This allowed the State to spread Federal construction dollars among more communities.

Beginning this year, the 8 percent State grants have been changed to loans.

Our Governor has also proposed an infrastructure bank which would be able to finance wastewater treatment projects. The bank idea has some merit as a public financing tool, but a lack of capitalization funds has prevented the bank idea from becoming a reality.

In order to provide funds to start up the bank, the Governor has recommended depositing the Federal construction grant funds in the infrastructure bank and awarding that money in the form of loans to the communities on priority list.

My colleagues in the legislature and I have fought this conversion proposal. It is our impression that the impact on the users, who would bear the entire cost of the financing would be devastating.

For instance, it is projected that the user fees for the Camden County phase I project I described earlier would double or even triple.

My colleagues and I have expressed our outrage at the inequitable fee increases that this proposal would impose, but the Governor has insisted that this is the only way to finance sewer treatment projects beyond 1985.

Clearly, that is not true. The Federal Government has been, and continues to be, committed to pollution control and clean water. The introduction of the bill we are discussing today and the increased funding this bill proposes bears testimony to the commitment of our elected representatives.

The Federal Government has historically recognized its responsibilities for contributing to the construction of the necessary treatment facilities. I, for one, am not convinced that you will walk away from us leaving the States to fend for themselves.

Our Governor, however, seems to have little faith.

I urge you to fight any attempt to permit Federal grant funds to be converted to loans.

The enormous, and overwhelmingly negative impact that such an action will have on user fees is apparent.

The inequity of changing the financing terms 10 years into the clean water program is also clear. For instance, if our Governor's proposal is accepted, some New Jersey residents will be required to pay for their clean water entirely through user fees while those whose projects were built earlier will have borne only a small portion of the costs.

It seems that New Jersey residents will be forced to borrow their Federal funds, while residents of other States continue to receive grants. The ratepayers of our State have not been given a choice in this matter; our Governor has volunteered us for this dubious honor.

I would hope that Congress recognizes the plight of the people it represents, and chooses to support its constituents and not its Governors.

Finally, the Federal Government, which raises and distributes construction funds, will lose control over the future expenditure of those funds. Second generation funds, those generated by loan repayments, will be controlled by the States.

This second generation money could be spent on a variety of projects, none of which are related to the original objective of water pollution control.

In closing, I must thank Congressman Howard for continuing his fight for clean water in New Jersey and elsewhere. His bill to reauthorize the Clean Water Act is indeed necessary. New Jersey,

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and the rest of the States, have used their previous funds wisely and well. But vast needs still remain.

Because of these needs, I must once again ask you to guard against attempts to turn these grants funds into loans. The reauthorization of the Clean Water Act represents a commitment to pollution control, and a commitment to the people of the Nation, which should not be altered. The inequities which will arise if such conversions are permitted are limitless.

I would like to thank the committee for allowing me to testify before them on behalf of the New Jersey State Legislature.

Mr. ROE. Thank you very much. We want to thank you for a very adroit and well-organized statement. You got right to the point of the issue.

We will do what we can to protect what you have referred to.

Are there questions?

Mr. STANGELAND. I, too, want to thank Assemblyman Bryant for his statement. I don't have any questions—I would like to set the record straight so there is no misunderstanding.

On page 9 where you talk about the shifts and changes of Federal policy, the change in funding for the program from 75 percent to 55 percent was a Senate action and it was a bipartisan action in the Senate.

Also, discontinuing the planning design grants came out of the Senate the last time this bill was written.

I just wanted to set the record straight. Neither were recommended by the President.

Thank you, again, for your testimony.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman.

I appreciate your testimony, Assemblyman Bryant. I understand your concerns in the New York Harbor that affects New Jersey and other areas. I appreciate your interest in having Congressman Howard's bill to close some of the loopholes.

If there are harbors in the country, however, that do meet water quality standards, ought there be provisions to allow waivers of secondary treatment or other costly treatment procedures that would be allowed to be implemented in those cases where they do meet the water quality standards?

Mr. BRYANT. I think if my testimony was not clear, Senator Howard's bill includes some of those, closes some. It does not completely eliminate EPA's ability to give waivers, but it sets standards for them. But it would permit them in the areas where they meet the necessary standards.

Mr. PACKARD. Thank you.

Mr. ROE. Again, thank you, Assemblyman, for your splendid presentation in behalf of New Jersey. We will give it every consideration to be sure.

Mr. BRYANT. Thank you.

Mr. ROE. Ladies and gentlemen, we will now have our distinguished colleague Congressman Feighan, who represents Ohio, to join with us first to make his presentation, and then we are going to take a lunch break. We will reconvene after we have Congressman Feighan's presentation and our questioning. We will recess and reconvene at 1:15.

The first order of business at that time will be the Orange County Sanitation District, Mr. Donald Holt, and his representatives that are here. So we would reconvene at 1:15 after we hear from our distinguished colleague who has been a very great leader, by the way, in the clean water efforts and in the environment of our Nation. We want to thank you for your support and cooperation.

Congressman Feighan, you may proceed.

TESTIMONY OF HON. EDWARD F. FEIGHAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO, AND HON. EARL MARTIN, MAYOR OF ROCKY RIVER, OHIO

Mr. FEIGHAN. Thank you, Mr. Chairman.

Mr. ROE. Would you identify the gentleman with you, who I understand is Mayor Martin.

Mr. FEIGHAN. Thank you very much, Chairman Roe and members of the subcommittee. Thank you for the opportunity to testify on the Rocky River Wastewater Treatment Plant, located in Rocky River, Ohio.

As the chairman has indicated, with me today is one of the distinguished mayors of the four communities served by this plant who share my desire to reach a resolution regarding this issue. I would like to formally introduce Mayor Earl Martin of Rocky River, Ohio, who is chairman of the Rocky River Wastewater Treatment Plant Management Board.

Our purpose in appearing before you is to explain the need for a $1.3 million grant to reimburse costs related to the construction of the Rocky River Wastewater Treatment Plant. This request is being made under the reimbursement provisions of the Federal Water Pollution Control Act.

The project at Rocky River, which also serves the communities of Bay Village, Westlake, and Fairview Park, was originally funded in 1968 under the research and development grant provisions of the Federal Water Pollution Control Act. The project was to use an advanced system of chemical coagulation and carbon filtration in order to provide the high level of treatment required for discharges into Lake Erie.

This form of experimental technology was urged on these communities by the U.S. Environmental Protection Agency. Construction on the plant was initiated in October 1972. Its operation has been a total failure.

As a former county commissioner in Cuyahoga County, Ohio, and now as a Member of Congress, I have vigorously pursued our request for reimbursement of the cost of this facility. The communities served by this project have been seeking reimbursement for many years. They, and I, have been frustrated because the Environmental Protection Agency (EPA) contends that the reimbursement provision should be used for "normal" projects, not innovative or demonstration projects.

EPA has refused to recognize the plant as eligible for additional reimbursement under section 206 (a) of the Clean Water Act. In a March, 1982 letter from John Hernandez, Deputy Administrator of EPA, to Mr. John Garner, Cuyahoga County Sanitary Engineer,

the objections of EPA were presented, and I quote from the EPA statement.

The present position that the Rocky River Plant is ineligible for reimbursement is based on two issues: the fact that construction of the project was initiated in October 1972 and the Agency's legal interpretation of Section 206 (a). That interpretation, based on the legislative history of the Clean Water Act of 1977 which amended Section 216 (a), is that a project on which construction was initiated between July 1, 1972, and 1973, must have received a grant under Section 8 of the Federal Water Pollution Control Act as amended by Public Law 84-660 in order to be considered eligible for reimbursement.

"Even if construction of the Rocky River project had been initiated prior to July 1, 1972, it could not have qualified for reimbursement because the legislative history of the Federal Water Pollution Control Act Amendments of 1972 indicates that the intent of Section 206 (a) was to reimburse those communities which had prefinanced a portion of the Federal share of the eligible cost of constructing waste treatment facilities in reliance upon Section 8 (c) of the Federal Water Pollution Control Act. Rocky River received its assistance under Section 6.

EPA adheres to this position in spite of the discussion that took place during the House debate on adoption of the conference report on House Resolution 4503, the Municipal Wastewater Treatment Construction Grant Amendments of 1981 (December 16, 1981). During that discussion my predecessor, former Congressman Mottl, raised the issue of eligibility. The chairman's response which was endorsed by Congressman Hammerschmidt, indicated that the Rocky River project was, in fact, the type of project contemplated by the Congress when it enacted the reimbursement provisions.

The core of the debate centers on EPA's contention that the law authorizing reimbursement does not apply to the funding requested for the Rocky River plant under the former section 6. There has been no suggestion that the project is, on its face, ineligible because of the language of the law. The debate centers entirely on congressional intent. It seems clear that the law, as it stands, does not preclude the Rocky River project from being eligible for reimbursement.

The U.S. Environmental Protection Agency has been insensitive to the concerns and needs of the residents of these four communities as they have attempted to resolve this issue through discussions and negotiations. Today, I am introducing legislation that will resolve the question of congressional intent. My bill merely restates congressional intent, declaring that the Rocky River wastewater treatment plant shall be eligible for reimbursement under section 206(a) of the Federal Water Pollution Control Act.

Once the question of eligibility is resolved, I will seek an appropriation of $1.3 million to reimburse these communities for the 50 percent Federal match as specified under section 6 of the Federal Water Pollution Control Act.

There is no question in my mind, nor in the minds of the residents of the affected municipalities, that this facility is eligible for reimbursement. This committee has already clarified its intent. I am now asking the Congress of the United States to reaffirm its original intention by supporting this legislation.

[H.R. 3956 follows:]

[H.R. 3956, 98th Cong., 1st sess.]

TO PROVIDE THAT THE ROCKY RIVER WASTEWATER TREATMENT PLANT IN ROCKY RIVER, OHIO, SHALL BE ELIGIBLE FOR REIMBURSEMENT UNDER SECTION 206(A) OF THE FEDERAL WATER POLLUTION CONTROL ACT

That notwithstanding any other provision of law, the Rocky River Wastewater Treatment Plant in Rocky River, Ohio, shall be eligible for reimbursement under section 206(a) of the Federal Water Pollution Control Act. For purposes of determining the amount of such reimbursement, amounts received under section 6 of the Federal Water Pollution Control Act (as in effect before the date of enactment of the Federal Water Pollution Control Act Amendments of 1972) shall be treated as having been received under section 8 of such Act (as in effect before such date).

Mr. FEIGHAN. With the support of this committee, and the Congress, I believe we can finally resolve this issue.

I would like, Mr. Chairman and members of the committee, to turn over a portion of my time and introduce again the mayor of the city of Rocky River who serves as the chairman of the board managing this facility and a gentleman who has been extremely familiar with the entire construction of the plant and the debate that took place with EPA for almost 10 years.

I would like to introduce Mayor Earl Martin, city of Rocky River.

Mr. ROE. Mayor Martin, the full text of your prepared statement will appear in the record at this point.

[Prepared statement referred to follows:]

ROCKY RIVER, OHIO,
OFFICE OF THE MAYOR,
September 19, 1983.

Mr. ROBERT ROE,
Chairman, Subcommittee on Water Resources.

DEAR CHAIRMAN ROE. The Cities of Rocky River, Bay Village, Fairview Park and Westlake, County of Cuyahoga, State of Ohio, entered into an agreement with the Commissioners of Cuyahoga County for the building and operation of a secondary wastewater treatment plant, located in the City of Rocky River.

This program originally began in 1967, when Cuyahoga County hired Shade and Shade Architects for the planning and design of an activated carbon pile secondary treatment system.

On August 17, 1970, Cuyahoga County awarded contracts to the Calgon Corporation for the building of said secondary treatment plant. This contract was subsequently voided by Court action.

On January 25, 1971, a letter written to Mr. John H. Puzenski, Sanitary Engineer of Cuyahoga County, from Arthur N. Masse, Chief, U.S. Environmental Protection Agency, Division of Municipal Treatment Research Program Advanced Waste Treatment Research Laboratory, indicated Mr. Masse's regret to the delay of the construction due to the legal difficulties and further expressed the U.S. E.P.A.'s belief that "the Plant, as determined by the plans and specifications was properly designed and would accomplish the intended objective—that is, produce an effluent of suitable quality for discharge into Lake Erie".

Armed with this information, Cuyahoga County set forth, and on January 27, 1972, awarded the contract for the construction of a secondary treatment plant. This contract was to the Spohn Corporation, and was also voided by Court action.

On September 18, 1972, the United States Environmental Protection Agency placed Cuyahoga County and the cities of Rocky River, Bay Village, Fairview Park and Westlake on 180 days notice, to proceed with the construction of the plant. A few days later, a meeting was held in the City of Fairview Park. Present at this meeting were representatives of the U.S. E.P.A., Cuyahoga County and the four cities. The meeting was held for the purpose of explaining the 180-day notice to proceed and to indicate to the four cities that additional funds for the construction of this project would be available upon the passage of Public Law 92-500. The funds would take the form of either reimbursement grants if the project had already begun, or construction grants if the law passed prior to the beginning of construction.

Section 206 of Public Law 92-500 made the project eligible for reimbursement construction grants and it was indicated by those representatives of the U.S. E.P.A. that the cities could receive an additional 55%, as long as we did not exceed 80% of the project cost.

With information from E.P.A. officer Arthur N. Masse, Chief, that we were building a superior plant and would accomplish its intended objective, and the further information from the U.S. E.P.A. representatives from Chicago that we would receive up to 80% of the total cost of construction, the cities of Rocky River, Bay Village, Fairview Park and Westlake, acting through its agent, Cuyahoga County, voted to move forward, and on October 2, 1972, the Spohn Corporation, being the lowest and best bidder was again awarded the construction contract.

On October 18, 1972, Public Law 92-500 was passed as amended.

In the spring of 1974, the new plant was completed and placed on line. Within weeks, the facility failed, and has never operated since that time, yet our cities will continue to pay for the E.P.A.'s mistake until the year 2000.

It would seem that under Public Law 92-500, we clearly are eligible for reimbursement grants, however the E.P.A. requirements define the word "construction" in the phrase initiation of construction and in their definition 35.890:

The phrase "initiation of construction" as used in this subpart, means the issuance to a construction contractor of a notice to proceed, or if not such notice is required, the execution of a construction contract.

Our problem now seems to be that we were too late for construction grants and too early for reimbursement grants. All wastewater treatment plants whose initiation of construction took place between July 1, 1972 and October 18, 1972 seem to be ineligible for either reimbursement or construction grants. I cannot believe that the Congress had intended this to be the situation. While some of our neighbors received grants up to 75%, we received a research grant for construction in the amount of less than 25% of the project cost.

At the present time, a second secondary treatment plant is under construction, for a total cost of thirty million dollars, of which our citizens will pay seven and one-half million dollars.

The citizens contributing to this Plant are unique in the United States, as they are forced to pay for something that they have never received.

Yours very truly,

EARL MARTIN, *Mayor.*

Mr. ROE. We are pleased to have you with us, Mayor Martin. You may go ahead.

Mr. EARL MARTIN. Thank you very much.

First of all, I do not agree with the Congressman from Ohio on the amount of money due us. I would like to go back to the year 1967 when this all started. I came into office as mayor in 1970, like you came to office here, Your Honor. So I have been around through this period of time and for 10 years we have tried to get our money back from the EPA who, in fact, cheated, lied and raped us. We are 80,000 people, and we are spending $10 million for a plant that does not function based on their recommendations and even their urgings to the extent they put us on 180-day notice and froze our permits.

Now, I would like to explain. This plant started out at about $1.3 million, and we had an R&D grant. It took so long to develop through our agents and the county that the price inflated to near $3.5 million by the time we went to bid.

We were put under 180-day notice to proceed. We were involved in several lawsuits. The EPA came down from Chicago and met with the Cuyahoga County officials and the officials of the four cities. They indicated to us what the 180-day notice meant and that we had to proceed with the project.

We said we didn't want to proceed because we understood that Public Law 92-500 was being amended and had been introduced on July 1 of 1972. This was in September of 1972, yes.

They said not to worry, "besides the R&D grant, you are eligible for 55 percent reimbursement grants, construction, so long as you can't get more than 80 percent." They told us that.

We had a letter dated January 25, 1971, to Mr. John Puzenski; Cuyahoga County sanitary engineer from Mr. Masse in Cincinnati with the EPA who indicated the plant we were building was superior and would function properly according to our plans and designs. So armed with that, EPA telling us we are building a superior plant and the fact we were going to get 80 percent money back, we were only risking 20 percent of the taxpayers' dollars on this R&D program.

[Letter referred to follows:]

ENVIRONMENTAL PROTECTION AGENCY
WATER QUALITY OFFICE
Ohio Basin Region
4676 Columbia Parkway
Cincinnati, Ohio 45226

January 25, 1971

Mr. John H. Puzenski
Sanitary Engineer of Cuyahoga County
1279 West Third St., Rm. 402
Cleveland, Ohio 44113

Dear Mr. Puzenski:

Thank you for your letter of January 12 and the copy of Dr. Loven's letter to you of January 6. I understand that the Journal Entry on the decision concerning Rocky River has now been made and that you are preparing to have the project re-bid.

The Federal Government's principal interest in the Rocky River project, and, indeed, the main reason that we are assisting in the cost of construction and operation, is to demonstrate what we believe to be a reasonable and, perhaps, superior (as compared to conventional biological treatment), method for treating municipal wastewaters.

By our approval of the plans and specifications, we expressed our belief that the plant, as determined by the plans and specifications, was properly designed and would accomplish the intended objective - that is, produce an effluent of suitable quality for discharge into Lake Erie. This is still our belief and we regret that it is necessary to delay construction because of the legal difficulties which arose.

For your consideration in having the specifications revised, I would like to make several comments on the points discussed by Dr. Loven in his January 6 letter, using the numbering system he used.

1. I believe that the equipment plans and specifications are sufficiently detailed that, with the supervision of your consultant, the plant can be constructed in a satisfactory manner. There should be no need to have the carbon supplier involved in this phase of the contract. In fact, I strongly

recommend that the supplying of the activated carbon itself be removed completely from this project and that bids for supply of the carbon be requested when the construction phase is nearing completion. It is only necessary that the carbon arrive in time to be loaded into the contactors. We have spent considerable money and manpower in our pilot plant activities in evaluating the adsorptive capacity, regenerability and physical stability of several granular activated carbons from various manufacturers. We are continuing with this research and will have more information at hand when the time comes to request bids for carbon. We believe it essential that only those carbons that have proved completely satisfactory in pilot plant use be considered for use at Rocky River.

2. I agree with Dr. Loven that the carbon supplier should be responsible for supervision of the filling of all eight adsorbers, backwashing of all eight adsorbers and the regeneration of only two adsorbers. If, as recommended in Item 1 of this letter, the purchase of the carbon is not a part of the construction contract, this subject will not be considered in the revised specifications. I believe that the operating manual should be prepared by the Engineer.

3. I have no comment to make on Item 12.5. This seems to me to be the province of the County Engineer and his legal advisors. I don't understand Dr. Loven's comments concerning the "particular process employed." I believe that the process to be employed is already pretty well defined by the plans and specifications.

4,5,6,7. If the purchase of carbon is not a part of this contract, Section 12.6 can be limited to those properties of the carbon that will influence design of equipment. These include bed density, particle density, uniformity coefficient, sieve size, mean particle diameter and moisture as packed. To avoid the problem brought up by Dr. Loven concerning "effective size" and "mean particle diameter," I suggest we leave out the "effective size" specification.

8. It seems evident to me from reading the seventh paragraph of Section 12.7 that "manufacturer" refers to the manufacturer of the underdrain blocks.

9. The carbon manufacturer, if the carbon is bid separately as recommended, will have no responsibilities in connection with construction of the plant.

10. The apparent densities of the spent and regenerated carbon need not be mentioned in the specifications.

11. This again seems to me to be in the province of the County Engineer and his legal advisors.

If you have any comments or suggestions on the above, please call me.

Sincerely yours,

A. N. Masse

Arthur N. Masse, Chief
Municipal Treatment Research Program
Advanced Waste Treatment Research
Laboratory

Mr. EARL MARTIN. The minute the thing was built, we found it never would run, never did function. It blocked immediately and the backwash would not work.

We were actually proving for the EPA that this plant would not function as a secondary treatment. We proved it, and they have never built another one as a secondary treatment. We withstood the entire cost of this operation, and we have never had any dollars back, not because we are not eligible for reimbursement, we are; but because when they put the regulations out, they changed the definition of the word "construction." Construction up to that time—according to the act right now, too—meant initiation of plans, anything, anything that had to do with the project.

When they put their regs out, it became initiation of construction and it meant the day you dug. We dug on October 2. On October 19, the bill was passed as amended. And everyone that was—everyone that dug between July 1 and October 19 didn't get anything. They were not eligible for reimbursement grants, and they were not eligible for grants.

So we got totally wiped out on this thing. I have been trying to explain this to people for 10 years, and you don't owe us $1.3 million, Your Honor, you owe us $2.8 million plus interest since 1973 because the people of my area are paying for a treatment plant, again right now, at $7.5 million. We are paying twice for a treatment plant in our area, and we have not received one yet, and we have not received the money due to us since 1973.

I don't feel like I am a foreign country, but I don't get any answers from these people. I don't know why we have been singled out. Our neighbors are getting 75 and 80 percent; we get nothing.

Mr. ROE. If the gentleman would yield, you have not been singled out from our committee point of view, because we have a number of others in the Nation in the same boat. We understand what you are talking about.

Let me ask you this. You talk of secondary treatment. Do you have a primary treatment plant now?

Mr. EARL MARTIN. Yes, sir, built in 1960, and we are presently constructing a conventional secondary plant for $30 million, of which our people are paying $7.5 million.

Mr. ROE. Let me develop this now. So we have primary treatment. Then EPA went into the innovative technology, which is the secondary treatment, which is the area of contention, did not work, you had to start over and build a so-called conventional plant which you are doing for secondary treatment now.

The question is the following: Under the plant under construction now, have you received support and grant allocations from EPA?

Mr. EARL MARTIN. Yes, very timely, very well.

Mr. ROE. So that part is coming along. In effect, you are coming back and saying above and beyond what we had to do because of failure of a R&D program that the burden for whatever, for whatever reason, attitude, has been placed on your community.

Mr. EARL MARTIN. Mr. Chairman, the plant in 1972 never functioned. We still want to pay our 20 percent.

Mr. ROE. The gentleman is not listening, maybe he is not understanding. I just want to set the case. Under the direction of EPA on the innovative technology, they said "Go ahead and build this innovative technological plant" concerning the secondary plant, which never worked.

Does EPA—obviously out of logic—if EPA is supporting your proportionate allowance for the new one, they had to recognize the old one didn't work.

Mr. EARL MARTIN. Correct.

Mr. ROE. Regardless of the dialog, it didn't work, so you are building a new one. That costs $30 million.

Now, how did you treat—how are you treating, from a financial point of view, this deficit we are dealing with on the original plant? Is that added to the sewer bill of the people? Is it a deferred deficit?

Mr. EARL MARTIN. It is a 25-year bond, $395,000 a year payment for the next 25 years.

Mr. ROE. Do you take that from general tax revenues?

Mr. EARL MARTIN. No, sewer funds.

Mr. ROE. So, therefore, they get an added surcharge for a plant that never worked and that is the nub of your contention?

Mr. EARL MARTIN. That is right.

Mr. ROE. Let me suggest the following. This is not an isolated case. We have three or four others we have gotten testimony on previously. I think it would be very helpful for us, our colleagues, if you could work to get this done, give us a chronological breakdown. In other words, your testimony is fine, but you are talking in the broad base. I would like to have a summary of the events that happened and any copies of corroborating data, letters you had received being urged by EPA to proceed, "We think this is a great idea," anything of that nature so we have that brief to establish your claim.

Mr. FEIGHAN. Mr. Chairman, we have those materials available and can put them in chronological order, and they would demonstrate that EPA in fact urged these communities to adopt this technology.

Mr. ROE. If it is agreeable to all members here, we would then allow the record to remain open to be submitted by yourself and Mayor Martin this documentation as part of the formal record. We would like to have that.

[The information received follows:]

EDWARD F. FEIGHAN
14TH DISTRICT, OHIO
MEMBER
COMMITTEE ON
FOREIGN AFFAIRS
COMMITTEE ON
THE JUDICIARY

1224 LONGWORTH BUILDING
WASHINGTON, D.C. 20515
(202) 225-5731

2101 FEDERAL OFFICE BUILDING
1240 EAST 9TH STREET
CLEVELAND, OHIO 44199
(216) 522-4192

Congress of the United States
House of Representatives
Washington, D.C. 20515

September 29, 1983

The Honorable Robert A. Roe
Chairman
Subcommittee on Water Resources
of the Committee on Public
Works & Transportation
2165 Rayburn House Office Bldg.
Washington, D.C. 20515

Dear Bob:

I want to thank you and the members of the Subcommittee on Water Resources for allowing me and Mayor Earl Martin of Rocky River, Ohio, to testify on the Rocky River Wastewater Treatment Plant issue. I appreciate your indulgence for monitoring the complexities of this matter over the years.

As you requested at the hearing, I am enclosing a project chronology of the Rocky River Wastewater Treatment Plant. If you have any questions or wish additional information please do not hesitate to let me know.

Sincerely,

Edward F. Feighan

EFF:gtc

COUNTY OF CUYAHOGA

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Timothy F. Hagan

February 22, 1983

Hon. Edward F. Feighan, M.C.
Congressional Office Bldg.
Washington, D.C. 20515

ATTN.: George Cody

Re: Rocky River Activated Carbon Process Reimbursement

Dear George:

We are happy to respond to your request for information pertaining to Cuyahoga County's unsuccessful efforts in obtaining additional USEPA grant assistance for the construction of the unsuccessful activated carbon sewage treatment process at the Rocky River Wastewater Treatment Plant.

This material includes the following:

1. A Project Chronology (11/8/67 – 10/18/82)
2. Letter dated 11/8/67 to Dept. of the Interior from John H. Puzenski, County Sanitary Engineer
3. Letter dated 7/22/68 from Joe G. Moore, Jr., Dept. of Interior
4. Instructions for Completing Applications for Research, Development and Demonstration Grants - Federal Water Pollution Control Administration dated March, 1969
5. Application for Research and Development Grant, Cuyahoga County Sewer District Improvement No. 615, Rocky River Wastewater Treatment Plant Detailed Discription of Project - Chemical Clarification and Carbon Filtration-Adsorption as Secondary Treatment - Revision of Project to Include Phosphate Removal
6. Rocky River WWTP R&D Grant No. 11010 DAB Letter to Sanitary Engineer from Willard F. Schade & Assocs., dated June 29, 1970
7. Offer and Acceptance of Federal Grant for Research and Development Under 33 U.S.C. 466 et seq, from Environmental Protection Agency Water Quality Office
8. Advanced Waste Treatment Seminar - Existing Rocky River Wastewater Treatment Plant, April 22 & 23, 1971

20-355 2155

Cont'd.

75 Public Square Cleveland, Ohio 44113
216/443-7800

✓9. Letter dated 4/27/91, from Arthur N. Masse, Chief, Municipal Treatment Research Program Advanced Waste Treatment Research Laboratory

✓10. Letter from Sanitary Engineer to Board of County Commissioners - Revised Estimated Costs for Improvement 615(A) 8-6-71

✓11. Letter from Sanitary Engineer to Board of County Commissioners - dated 2/8/73, regarding Improvement 615-A / 8-6-71

✓12. Application for Reimbursement Grant - Federal Water Pollution Control Act Amendments of 1972 - Project No. 11010 DAB, dated 10/12/73.

✓13. Resolution Authorizing County Sanitary Engineer to make application for Reimbursement Grant as provided for in the Federal Water Pollution Act Amendments of 1972, for the Rocky River WWTP, in the amount of $1,432,520, dated 10/15/73

✓14. USEPA Grant Amendment dated 4/3/75

✓15. Environmental Protection Agency Program Requirements Memorandum 75-11, dated 4/17/74

✓16. Letter dated 5/25/76 to Stephen J. Sebesta, Sanitary Engineer, from Robert B. Schaffer, Associate Deputy Assistant Administrator for Air, Land & Water Use, USEPA

✓17. Commissioners Resolution dated 6/3/76, directing County Administrator and County Sanitary Engineer to file application with Federal EPA seeking reimbursement grant for construction costs of Rocky River WWTP as soon as H.B. 9560 or any similar legislation is enacted by Congress

✓18. Contract No. 1 - Request and Justification for Change

✓19. Letter dated 9/16/76 from Rocky River Mayor / EDGE MARTIN

✓20. Letter dated 9/25/81 from John J. Garner, San. Engr., to Ms. Charlie Smith, Ohio Coordinator, USEPA, re Rocky River WWTP Improvements 1970-1975.

✓21 Letter dated 11/13/81, from John J. Garner to Valdas V. Adamkus, Admr., USEPA, Region V, Chicago, Illinois

✓22. Letter dated 11/20/81, from John J. Garner to Ms. Charlie Smith, USEPA, Region V.

✓23. Letter dated 11/25/81, from Congressman Mottl to Val Adamkus, USEPA, Region V.

✓24. Letter dated 12/1/81, from John J. Garner to Richard Sullivan, Committee on Public Works & Transportation, Washington, D.C.

✓25. Letter dated 12/2/81 from Cong. Mottl to Richard Sullivan

✓26. Letter dated 12/14/81, from John J. Garner to Val Adamkus, Dir., USEPA Region V

✓27. Letter 12/10/81, from Congressman Mottl to James J. Howard, Chairman, Public Works & Transportation Committee

✓28. Letter dated 12/24/81, from John J. Garner to Congressman Mottl

✓29. Letter dated 2/2/82, from Congressman Mottl to John J. Garner, re testimony delivered before Appropriations Committee

✓30. Copy of Congressional Record dated 12/16/81

Cont'd.

31. Letter dated 2/3/82 from Lindy (Mrs. Hale) Boggs, M.C., to Congressman Mottl

32. Letter dated 2/3/82 from Bill Green, M.C., to Congressman Mottl

33. Letter dated 2/4/82 to Congressman Stokes from Commissioner Brown

34. Copy of Title 40-Protection of Environment

35. Letter dated 2/5/82 from John Garner to Congressman Mottl

36. Letter dated 3/15/82 from John Garner to Wm. Kitchell, Congressman Mottl's Office

37. Letter dated 3/26/82 to John Garner from John W. Hernandez, Jr., Deputy Admr., USEPA

38. Letter dated 10/18/82 to Richard Sullivan, Committee on Public Works & Transportation, from John Garner

We will be happy to discuss this voluminous material with you at your earliest convenience.

We appreciate the Congressman's and your interest in this matter. It continues to appear that if we are not successful in obtaining this additional federal grant reimbursement, the four (4) municipalities will continue to pursue their litigation against the County in this matter. Although I am confident that the County will prevail in the litigation, all of us can agree it is best to utilize our best efforts to prevent the litigation from proceeding.

Thanks again.

Very truly yours,

JOHN J. GARNER, P.E.
Sanitary Engineer

JJG:jmf

Enclosures

Rocky River Wastewater Treatment Plant Chronology
1910 - 1/9/78

1910 First sewage treatment plant built in Rocky River.

Nov. 16, 37 - Board of County Commissioners of Cuyahoga County entered into an agreement with the Cities of Rocky River, Fairview Park, and Bay Village for the construction, operation and maintenance of the so called Rocky River Wastewater Plant.

1938-39 - New plant constructed by the county with financial aid of Rocky River, Fairview Park and Bay Village. However, the Federal government made the largest contribution through the W.P.A.

Feb. 6, 50 - Rocky River city council requesting the County Commissioners to prepare plans for the improvement of expansion of the Rocky River plant.

Oct. 7, 57 - 16 mgd. Primary Treatment.

Oct. 7, 57 - Board of County Commissioners entered into a new agreement relating to the reconstruction, enlargement, maintenance and operation of the Rocky River sewage treatment plant and outfall sewer and provided for termination of the agreement of 11-16-37

Oct. 21, 57 - The Council of the City of Rocky River authorized the Mayor and Auditor to execute and deliver to the B.O.C.C. of Cuyahoga County an easement for an outfall sewer from the proposed enlarged sewage treatment plant to the waters of Lake Erie.

Mar. 27, 58 - Resolution approving a Supplemental Agreement by and against the City of Rocky River, the City of Fairview Park, the City of Bay Village and the Board of County Commissioners to provide for the testing of Legal Title to the sewage treatment plant and outfall sewer to be constructed.

Apr. 1, 58 - Yes to the County.

Apr. 1, 58 - Basic contract was supplemented in order to provide for the vesting of legal title to the sewage treatment plant and outfall sewer.

Jan. 2, 59 - Contract was supplemented for the second time to make provision for the assessment by the B.O.C.C. against benefited property in the City of Westlake of that portion of the cost of reconstructing and enlarging the sewage treatment plant originally assumed by Cuyahoga County pursuant to the Basic Contract to provide capacity for sewage from the City of Westlake.

Jan. 15, 59 - Board of Commissioners passing a resolution to provide for the preparation of Plans, Specifications and Estimates of costs for Reconstruction and Enlarging the Rocky River WWTP.

Jan. 15, 59 - The City of Westlake entered into an agreement with the B.O.C.C. of Cuyahoga County binding itself to the terms and conditions of the Basic Contract, the Supplemental Agreement and the Second Supplemental Agreement relating to the treatment of its waste at the Rocky River Wastewater Treatment Plant.

Jan. 29, 59 - Board Resolution approving agreement with Willard F. Schade for engineering services for the Rocky River WWTP.

June 1, 59 - Letter from Puzenski to mayors and Directors of the four communities sending them copies of preliminary plans, designs, specs and cost estimates.

June 2, 59 - To some properties.

Mar. 23, 60 - CCBC approved detailed Plans, Specs, Estimates of Cost and Tentative Assessments for the Construction of the Rocky River Plant Improvements.

Sept. 2, 60 - Public hearing for the plant's Improvements.

Sept. 29,60 - Baord resolution to proceed with the construction of the Rocky River Plant Improvement.

Dec. 15, 60 - Tabulation of proposal bids for the Rocky River Wastewater Treatment Plant. 5 Contracts. Enlargement and outfall sewer.

Dec. 15, 60 -	Contract I	Outfall	$342,340.00
	Contract II	Treatment Fac.	$2,836,009.05
	Contract III	Plumbing	$22,000.00
	Contract IV	Heating & Ventil.	$31,000.00
	Contract V	Electrical Works	$85,350.00

Jan. 9, 61 - Board Resolution authorizing the clerk to offer, at private sale $4,600,000 County Sewage Improvement No. 615 (Rocky River Plant) notes to serve the Rocky River sewer district.

Jan. 17, 61 - Board Resolution accepting offer of the Society National Bank of Cleveland, to purchase $4,600,000 County Sewage Improvement No. 615 notes.

Mar. 17, 61 - Ground Breaking ceremonies for the plant.

Jul. 24, 62 - Ordinance passed by the Rocky River city council which regulates the type and flow of sewage into the recently completed enlarged Rocky River Plant.

Apr. 20, 63 - Letter from Joseph M. Poe Rocky River Mayor to Puzenski requesting the content of the Dec. 4, 1962 letter stating the nauseating smell of the new Rocky River Plant.

Apr. 20, 63 - Reply from Puzenski to the mayors of the four communities informing them that the sludge drying and sludge incinerative equipment will be in operation soon. Subsequent letters show that odor problem persisted at least throughtout the 1973 year.

Oct. 65 - Letter from the Ohio Water Pollution Control Board ordering the County to submit a report and general plan for compliance with the conclusion and recommendations of the Lake Erie Conference concerning the means to maximize the reduction of biochemical oxygen demand, phosphates and coliform concentrations.

Aug. 18, 66 - B.O.C.C. resolution approving agreement between the Board and Schade, Willard F. Schade & Assoc. for engineering services for the reconstruction and enlargement of the Rocky River Sewage Treatment Plant.

Aug. 18, 66 - Not to my knowledge. No record found.

Jan. 19, 67 - Dept. of Health of the State of Ohio approved general plans.

Jan. 31, 67 - Plans were sent to mayors of the four communities for review and approval.

Feb. 27, 67 - Four mayors objected to the new construction for the secondary treatment facility to be easterly of the existing plant. Schade & Associates were therefore instructed to prepare new general plans for an alternative site for the location of the treatment facility.

Feb. 27, 67 - Plans I & II would encroach on private property. Land would have to be bought etc. Plan II would eliminate doing that.

Mar. 29, 67 - Schade & Assoc. completed general plans for the alternate sites and copies were sent to the four mayors.

May 10, 67 - A request was made by the mayors to the Schade & Assoc. to prepare alternative site general plans, cost $17,844.51.

June 28, 67 - John H. Puzenski letter to the four mayors submitting plans for the revised site plan for the required secondary treatment to the Rocky River Wastewater Treatment Plant.

June 28, 67 - Not to my knowledge. No record found.

June 28, 67 - Letters from Puzenski to the four mayors sending them copies of revised site plan for the repaired secondary treatment to the existing Rocky River WWTP.

Dec. 27, 67 - Letter from George H. Eagle - State of Ohio Dept. of Health to the U.S. Dept. of the Interior, Federal Water Pollution Control Administration. Content of letter: Cuyahoga County Sanitary Engineer applying for a Research and Development Grant for the purpose of installing secondary wastewater treatment facilitites Because of available space, convectional secondary treatment construction not possible, therefore the process of chemical clarification and grainular activated carbon filtration and absorption considered.

Feb. 9, 68 - Robert E. Schade and Rizzo (Calgon Corp.) papers on Secondary Treatment with Granulated activated Carbon. These papers list references of works done on carbon treatment of sewage wastes.

Jul. 22, 68 - Letter from Joe G. Moore Jr. from the Federal Water Pollution Control Administration to Puzenski informing him of the $741,350 Research and Development Grant offer.

Jul. 31, 68 - Letters from John H. Puzenski to mayors of the four communities informing them of the $741,350.00 grant from the Federal Water Pollution Control Administration.

Jul. 31, 68 - Yes, Mayors were informed of R&D Ramifications.

Aug. 14, 68 - Board resolution to accept a Federal Grant of $741,350.00 for research and development in connection with the Rocky River Wastewater Treatment Plant.

Dec. 5, 68 - Board of Commissioners resolution approving a supplement agreement with Willard F. Schade and Associates for modification of contract for engineering services for the Rocky River sewage treatment plant. $17,844.51 increase.

Mar. 24, 69 - Rules and Regulations for R&D and demonstrations Grants.

Jun. 27, 69 - Letter sent from Puzenski to Frank A. Kobbes, Westlake City Engineer, Plant basis of design for Secondary Treatment.

Jun. 30, 69 - Department of Health of the State of Ohio approved the detailed set of new plans.

Jul. 21, 69 - The City of Westlake bound itself to all of the terms and conditions of the Basic Contract, the Supplement Agreement, the Second Supplement Agreement and the Third Supplemental Agreement, thereby obtaining the right to connect its sanitary sewerage system for discharge into sewers which are connected with or tributary to the Rocky River sewage treatment plant and outfall sewer.

Jul. 21, 69 - Board resolution to enter into a third Supplemental Agreement with the four communities, the purpose being to facilitate the City of Westlake financing of a sanitary sewage collection system throught the issuance of mortgage revenue bonds.

Sept. 22, 69- Letter from A.N. Masse, Acting Chief Municipal Treatment Research Program Advanced Waste Treatment Research laboratory informing John H. Puzenski, Cuyahoga County Sanitary Engineer that the Federal Government would not guarantee carbon column lining unless rubber would be used as lining.

Nov. 11, 69 - A. N. Masse letter to Puzenski about the source of the problem encountered at the Ponona Wastewater Treatment Plant.

Jan. 22, 70 - Letter from Arthur N. Masse to Paul Beck informing him of the possibility of sulfide production in the carbon columns. In their letter Joe Rizzo of Calgon suggests that their problem may be avoided by utilizing air diffusers in the clairfier and having a high dissolved oxygen going to the carbon.

Jan. 29, 70 - Board resolution to proceed with the construction of the plant.

Feb. 26, 70 - Public Hearing on objectives in connection with improvement of the Rocky River Wastewater Plant.

Feb. 26, 70 - Yes, R&D funds were mentioned. No negative response from communities with regard to construction. Mayors Martin, Roman, and Mooney were present. They favored the project. Mr. Saddler City Engineer for Bay Village, present, also favored the project.

Apr. 6, 70 - Board second resolution to proceed with the construction of the plant.

Apr. 6, 70 - Board adopted a resolution determining to proceed with the construction of the improvement of the Rocky River wastewater treatment plant.

May 21, 70 - Board resolution directing the Clerk to advertise for bids for the construction of the plant.

Jun. 11, 70 - Tabulation of proposal bids for the Rocky River wastewater plant, 4 contractors.

Jun. 11, 70 - Proposal bids for the construction of the Rocky River plants received. Action deferred on account that the carbon specs may have favored Calgon.

Jul. 13, 70 - Letter from A. N. Masse USEPA authorizing Puzenski to proceed with the awards of contracts for all four projects.

Jul. 27, 70 - City of Fairview Park passed an Ordinance to enter into an agreement with the Board of County Commissioners relative to the construction and operation of the so called Rocky River Treatment Plant.

Aug. 3, 70 - The City of Bay Village passed.....

Aug. 10, 70 - The City of Rocky River passed.....

Aug. 13, 70 - The City of Westlake passed....

Aug. 17, 70 - Board of County Commissioners resolution to enter into an agreement with the Cities of Bay Village, Fairview Park, Westlake and Rocky River relative to the construction and operation of the so called Rocky River Sewage Treatment Plant.

Aug. 17, 70 - County of Cuyahoga awareded contracts to the Calgon Corp. for the building of the Rocky River wastewater treatment plant. All contract later voided by Court action. Court, in the Frank C. Gasper es. rel. U.S. Board of County Commissioners ruled all the contracts void because specs favored Calgon.

Aug. 17, 70 - Board resolution authorizing the Execution of an Agreement with the cities of Bay Village, Fairview Park, Rocky River and Westlake Relative to the construction and Operation of Sewage Treatment Facility at Rocky River.

Aug. 17, 70- Board resolution to award the Contract I to Calgon Corp. $2,702,108.87, Contract II to Garison Levelle Plumbing Co. $35,500.00, Contract III to Reliance Mechanical Const. Inc. $6,944.00, Contract IV to Hubert Electric Co. $145,697.00.

Nov. 25, 70- Common Please Court Case No. 886.544, (State of Ohio, ex rel. Frank C. Gasper US Board of County Commissioners of Cuyahoga County, et al). Judge Perry B. Jackson concluded that carbon specs did favor Calgon.

Mar., 71 - Legal notice, Information to Bidders etc., (second proposal) 5 contracts.

Mar. 3, 71 - Letter from EPA advising Puzenski that application dated August 5, 1970 for supplemental funding of the construction grant has been approved in the amount of $250,000 or 38.52% of the revised total eligible costs of $2,573,810, whichever is less.

Mar. 3, 71 - USEPA by letter offered the County a development and research grant subject to terms and conditions.

Apr. 9, 71 - Letter from George H. Eagle to CCBC notifying them that specs and places for the proposed Rocky River WWTP have been approved.

Apr. 22-23,71-Advanced waste Treatment Seminar Cleveland Engineering Center. Explains in details why the carbon column treatment process was chosen.

Apr. 27, 71- Letter from Puzenski to George H. Eagle, Chief Engineer, Ohio Dept. of Health, acknowledging receipt of Eagle's letter approving revised detailed Plans of Proposed Secondary WWTP for the Rocky River service areas.

May 20, 71 - Letter from Mayor Martin to Puzenski informing him of numerous complaints about the offensive odor emitted by the sewage plant.

May 26, 71 - Letter from William Schade to Puzenski asking for specs revision so that rebidding can reoccur. Their is a result of the Frank C. Gasper - US - CCBOC law suit.

Aug. 2, 71 - Rescinding the resolution adopted April 6, 1970 to proceed with the construction of the secondary sewage treatment facilities at the County's sewage treatment plant in the City of Rocky River.

Aug. 6, 71 - Revised estimated costs $4,879,630.00 - Specs change.

Aug. 9, 71 - Board of Commissioners approved revised detailed plans, specifications and estimates of cost for the improvement of the Rocky River Wastewater Treatment Plant

Aug. 9, 71 - Board resolution approving detailed plans, specs and estimates for the plant construction.

Sep. 9, 71 - Board resolution informing the mayors, city engineers, councilmen and consulting engineer of the result of the Public Hearing. After discussion, the Board informed all present that objections of the proposed improvment be made in writing within five days after this hearing.

Sep. 9, 71 - Board Resolution authorizing public hearing for the plant construction works.

Sep. 16,71 - Board request to the Cuyahoga County Sanitary Engineer to proceed with the advertisement for bids for the construction of such improvement.

Sep. 16, 71- Board resolution ratifying revised plans, specs, character and terminal for the conty sewer (WWTP) improvement.

Oct. 7, 71 - Letters from J.H. Puzenski to mayors sending their Volume One (Legal Notice, Information to Bidders, Proposals and Contract) and Volume Two (General Conditions and Detailed Specifications) of specifications for Cuyahoga County Sewage Improvement No. 615A, Rocky River Wasterwater Treatment Plant.

Oct. 18, 72 -Law was amended to provide additional funds for planning and construction grants to communities, sewer districts etc.

Oct. 26, 72 -Letter from Puzenski to the four mayors sending them copies of letters from Water Pollution Control Federation offering the county $741,350 grant (July 22, 68) and the supplement grant of $250,000 (March 3, 71).

Oct. 26, 72- $250,00 required to offset a portion of the additional cost for construction modifications and to provide additional operation and maintanence funds during the course of the project.

Oct. 26, 72- Letters from John H. Puzenski to mayors informing them of the supplement grant of $250,000.00 from the United States Government for the Rocky River Treatment Plant.

Oct. 31, 72- Informal Hearing on alleged violation of the Ohio Water Quality Standards Supplementation Plan for Lake Erie by the County of Cuyahoga, Ohio at sewer District #6 (Rocky River) Treatment Plant

Nov., 72 - Break ground for the construction.

Jan. 31, 73- U.S.E.P.A. recommended by letter certain major change in the plans and specifications necessary to meet the recently adopted State of Ohio Air Quality Standards.

Feb. 12, 73- Board resolution to provide for the redesign of the carbon adsorption system for the Rocky River wastewater plant in order to increase the operating pressure from 30 psi to 50 psi as recommended by the USEPA. Estimated cost $250,000.00

Feb. 12, 73- Yes.

Feb. 16, 73- Letter from Mayor Martin to Puzenski advising him to file an application construction grants.

Feb. 16, 73- Letter from Puzenski to Ned E. Williams USEPA requesting Williams to forward the forms necessary for the County of Cuyahoga to make applications for a construction grant for the Rocky River WWTP.

Feb. 27, 73- Letter from Mayor Martin to Puzenski advising him to the fact that working in the application for reimbursement be changed from "research grant" to "construction grant".

Feb. 28, 73- Letter from Mayor Martin to Puzenski summerizing the Provisions of the Federal Water Pollution Control Act of 1972. Public Law 92-500 in relation to funds reimbursement.

Mar. 20, 73- Letter from John L. Dowling, Assistant Prosecuting Attorney to William S. Gaskil County Administrator concerning the responsibility of the residential engineer.

May 10, 73 - Board resolution approving County Sanitary Engineer request for authority to prepare the necessary change orders to design and install a Two-Stage Scrubber for the Regeneration Furnace at the Rocky River Wastewater Treatment Plant. Estimate costs is about $50,000.00 plus engineering costs.

May 24, 73 - The B.O.C.C. approved the funding of $19,500.00 to be paid to Schade & Assoc. for engineering services (Supplemental Agreement No. II) (Actual cost $24,414.38).

Jun. 30, 73- Letter from Frank C. Dunbar Jr. to A.M. Braun, Assistant Prosecuting Attorney explaining why Calgon bid should be rejected.

Jul. 5, 73 - Letter to Puzenski from Mayor Martin of Rocky River informing him that they (presumably the four mayors) are working on the question whether the Rocky River WWTP in eligible for a reimbursement grant under Public Law 92-500.

Aug. 8, 73 - Letter from William H. Moss to Schade & Associates staff with copies sent to the Sanitary Engineers' staff and to Irwin Kugelman (EPA) request that a letter backdated July 30, 73 be sent to Federal EPA requesting a extension of time, because of litigations which occurred during the bidding process. Federal Grant expiration date was July 31, 1973.

Oct. 9, 73 - Letter from Carboline representative indicating that coal tear based epoxy materials failed in lab work performed at the Taft Center, they recommend flake glass polyester linings and elastormeric linings for the carbon columns.

Oct. 10, 73- Robert E. Schade to John H. Puzenski recommending that Calgon Corp be hired for a duration of approximately fifty man days to include carbon supplier consultant service following start-up and during the first year operation.

Oct. 12, 73- Application from Puzenski to the Federal Water Pollution Board requesting Reimbursement Grant (Letter shows how the figure $1,432,520 was derived).

Oct. 15, 73 -Board resolution instructing and authorizing John H. Puzenski, to make application for reimbursement Grant as provided for in the Federal Water Pollution Act Amendments of 1972, for the Rocky River Wastewater Plant, in the amount of $1,432,520.00.

Oct. 15, 73- Total project cost approximately $ 4,879,630.00
% of 4,879,630.00 = 2,439,815.00
Total Grant prev. received = 991,350.00
Approximately = $ 1,448,465.00
This figure is close to mayor Martin's $1,432,520.00

Oct. 15, 73- House Bill No. 9650.

Oct. 25-26,73-Letters from William S. Gaskill to Mayors Roman, Martin, Reese and Mooney indicating that the board filed application with the Federal EPA requesting reimbursement of the costs of improvements to the Rocky River WWTP.

Jan. 17, 74 -Resolution authorizing Puzenski to sign in behalf of the Board of County Commissioners of Cuyahoga County the form entitled "Grant Amendment" extending the period of Grant no. 11010 DAB-01-2 (R D grant) from 8-16-68 to 7-13-73 to 8-16-68 to 6-30-76.

Jan. 28, 74 -EPA approval of grant extension from 8-16-68 - 7-31-73 to 8-16-68 - 6-30-76.

Feb. 28, 74 -The Board of County Commissioners approved a resolution for modification of contract for engineering services $3,250.00 (Supplemental Agreement III) Schade est. $7,469.00.

Feb. 28, 74- The B.O.C.C. approved a resolution for construction and post construction periods for engineering services required for the sewage treatment plant. $30,000.00 increase (Supplementary Agreement IV, actual cost $53,605.33).

Dec. 23, 74 -Resolution from the Rocky River city council authorizing Mayor Martin to enter into an agreement with the BOCC, Bay Village, Fairview Park and Westlake, to file an application for a federal grant to assist in the cost of studying and evaluating the I&I into the sewer system of the four communities.

Dec. 23, 74 -Rocky River passed a resolution for I&I works in Westlake.

Jan. 16, 75 -Letter from Bill Moss (William F. Schade & Assoc.) to William Gaskill (County Administrator) explaining the cost allocations for the $991,350 R&D monies from the Federal EPA.

Apr. 7, 75 - Bay Village passed a resolution for I&I works in Westlake.

Apr. 17, 75 -Westlake passed a resolution for I&I works in Westlake.

Jun. 2, 75 - Fairview Park passed a resolution for I&I works in Fairview Park.

Oct. 1, 75 - Plant was started on a full time basis.

Nov. 10, 75 -Resolution by Commissioner approving an agreement between Michael Benza & Associates and Cuyahoga County Sanitary Engineers for the preparation of a Step I application for the Rocky River S.D. (Bay Village, Fairview Park, Westlake and Rocky River).

Nov. 10, 75 -Agreement made among the cities of Bay Village, Fairview Park Westlake and Rocky River and the Board of Commissioners of Cuyahoga County for the preparation of the Step I application for the Rocky River sewer district.

Nov. 10, 75 -CCBC passed a resolution authorizing I&I works for the Rocky River sewer district.

Dec. 19, 75 -Plant dedication.

Jan., 1976 - Plan of Study for the Rocky River Planning area prepated by Michael Benza & Associates. Plan of Study revised by Sanitary Engineering office and sent to EPA within a couple of months.

Mar. 15, 76 -Board resolution authorizing Steve Sebesta to sign a Federal Step I Grant Application for the preparation of a Facilities Plan for the Rocky River Wastewater Treatment Plant.

May 6, 76 - Application for Step I funds completed.

May 13, 76 - Resolution of agreement between board of Commissioners and Michael Benza for the preparation of a facility plan for the Rocky River sewer district.

May 25, 76 - Letter from Robert B. Schaffer USEPA advising Steve Sebeste that no more funds are committed from research and development funds. Schaffer says that it is not possible to obtain additional funds through the Construction Grants Program to contribute to the cost of facilities already in place.

Jun. 3, 76 - Board resolution directing the Sanitary Engineer to file an application with the EPA seeking a reimbursement grant for construction costs of the Rocky River Wastewater Plant.

July, 1976 - One carbon column rubber lining failed.

Jul. 19, 76- Agreement between the Board of Commissioners and Metcalf & Eddy Engineers for engineering services in the preparation of reports, consultation and advice, review mayor mechanical systems, and provide contract administration assistance for the Rocky River Wastewater Treatment Facility. $25,000.00.

Jul. 23, 76- Step II application for the Rocky River planning area.

Jan. 18, 77-Board resolution of Supplemental Agreement No. 1 with Metcalf & Eddy Engineers for further work in the assistance and reassistance of the Rocky River Wastewater Plant. Additional funds not to exceed $20,000.00.

Apr. 4. 77 -Board resolution approving Supplement Agreement No. 1 to the contract No. 17369 with Michael Benza & Associates, Inc., calling for modification of contract for engineering services in connection with the preparation of the Rocky River sewer district facilities plan.

Apr. 15, 77-Letter from Metcalf & Eddy Inc. to Steve Sebesta, suggesting absolving the contractor with complete responsibility of the Rocky River Plant failure and relieve the contractor of any responsibility for the failure.

Oct. 21, 77-Payment to Metcalf & Eddy Engineers $21,275.12.

Oct. 31, 77-Resolution authorizing the Sanitary Engineer of Cuyahoga Co. to sign in behalf of BOCC the form entitled "Grant Amendment" extending the period of Grant No. 11010 DAB-7 from 8-16-68 to 12-31-76 to 8-16-68 to 1-31-78.

Jan. 9, 78 -Board resolution to pay $145,000.00 to Spohn Corporation to terminate all the litigation over the construction of the Rocky River Wastewater Plant.

(2)

COUNTY OF CUYAHOGA
SANITARY ENGINEERING DEPARTMENT

JOHN H. PUZENSKI
OUNTY SANITARY ENGINEER

November 8, 1967

U. S. Department of the Interior
Federal Water Pollution Control Administration
633 Indiana Avenue, N. W.
Washington, D. C. 20242

Re: Cuyahoga County Sewer
District Improvement No. 613
Rocky River Waste Water
Treatment Plant

Gentlemen:

Enclosed herewith for your review and approval is the form entitled "Application for Research and Development Grant" for grants under Title II, Section 6(a) of the Federal Water Pollution Control Act as amended by the Clean Water Restoration Act of 1966, in the amount of $1,370,000, in connection with the Waste Water Treatment Plant in the City of Rocky River, Ohio, also known as County Sewer District Improvement No. 613.

A copy of this application is also being sent to the Ohio State Department of Health, Water Pollution Control Board.

Very truly yours,

John H. Puzenski
Sanitary Engineer of
Cuyahoga County, Ohio

JHP:bma
Enclosures

CC: E. B. Ransom
Ohio State Department of Health

(3)

JUL 22 1968

Dear Mr. Puzenski:

We are pleased to offer you a Research and Development Grant for the project "Chemical Clarification and Carbon Filtration and Adsorption as Secondary Treatment for Rocky River Wastewater Treatment Plant, Cuyahoga County, Ohio, Sewer District Improvement No. 015," as described in your application dated November 1, 1967, and which is to include "Revision to Include Phosphate Removal."

The grant offer is $741,350 or 50% of the eligible project costs, whichever is less, subject to the conditions and assurances set forth in the enclosed Section I of the Offer and Acceptance document (and attachments).

Acceptance of this Offer must be made by completing Section II of the Offer and Acceptance document and returning one copy of both Sections I and II (and attachments) within the next thirty (30) days.

We are hopeful that this project will contribute significantly to the advancement of the Administration's and your County's water pollution control programs. The importance of this and similar projects in serving as useful demonstrations having wide application cannot be overemphasized.

Should you have questions concerning this grant offer, please contact us.

Sincerely yours,

Joe G. Moore, Jr.
Commissioner

Mr. John H. Puzenski
Sanitary Engineer of Cuyahoga County
1219 Ontario Street
Cleveland, Ohio 44113

4

INSTRUCTIONS FOR COMPLETING APPLICATIONS FOR RESEARCH, DEVELOPMENT, AND DEMONSTRATION GRANTS

Office of Research and Development
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

March, 1966

INSTRUCTIONS FOR COMPLETING APPLICATIONS

RESEARCH, DEVELOPMENT, AND DEMONSTRATION GRANTS

General Information

Review the following information contained in the Research, Development, and Demonstration Grant application kit before preparing an application:

a. Rules and Regulations for Research, Development, and Demonstration Grants.
b. Patents and Inventions Article.
c. Clean Water Fact Sheets.

Submission of Application 8

Submit an original and 7 copies of each application and one acknowledgement card to:

Project Coordination
Office of Research and Development
Federal Water Pollution Control Administration
U. S. Department of the Interior
Washington, D. C. 20240

Acknowledgement by FWPCA

The applicant shall complete the acknowledgement card and attach the card to the original grant application. The card showing the date of receipt will be returned to the applicant.

PART I, SECTION A, REQUEST AND CERTIFICATION

1. Type of Grant

Class I. Those projects intended to establish, discover, develop, elucidate, or confirm information on the causes, control, and prevention of water pollution.

Class II. Those projects intended to demonstrate the applicability and utility of research findings on the causes, control, and prevention of water pollution.

Class III. Those projects which will assist in the development of, and/or will demonstrate, a new or improved method of controlling the discharge into any waters of untreated or inadequately treated sewage or other wastes from sewers which carry storm water or both storm water and sewage or other wastes.

Class IV. Those projects which will assist in the development of and/or will demonstrate advanced waste treatment and water purification methods (including the temporary use of new or improved chemical additives which provide substantial or immediate improvement to existing treatment processes) or new or improved methods of joint treatment systems for municipal and industrial wastes.

Class V. Those projects intended to prevent pollution of waters by industry, including, but not limited to, treatment of industrial wastes.

2, 3, and 4. Self-explanatory.

5. Grant Director

The Grant Director is the person who has been assigned responsibility for overall direction and management of the project for the applying organization. He must be an officer or employee of the applying organization.

6. Project Director

The Project Director is the person who has been assigned responsibility for the technical supervision of the project. The Project Director and Grant Director responsibilities may be assigned to one person if desired.

7. Self-explanatory.

8. Type of Application

New - A project not previously supported by an FWPCA grant.
Revision - An existing grant project requiring additional funds or other changes for completion within the grant period.
Continuation* - An existing grant project requiring additional time and funds or other changes for completion.

Where the application is for a revision or a continuation, insert the original FWPCA Grant Number.

9. Project Financing

a. For Total Project:
Total Project Period - estimated beginning and ending dates for entire project.

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* Grants for Class I and Class II projects are normally made for a maximum grant period of 12 months. Continuation grants for additional grant periods of up to 12-months each are subject to avail[illegible] appropriated funds [illegible] successful development of the [illegible] Class III, IV, and V [illegible]

9. Project Financing (Continued)

a. For Total Project: (Continued)

Total Project Cost - estimated total cost for entire project.

b. For This Request*:

Grant Period - estimated beginning and ending dates of activity to be financed by requested grant.
Applicant's share - project costs to be paid by applicant during grant period.
Grant Requested - self explanatory.
Total - applicant's share plus grant requested.

10. Terms and Conditions

The signature must be in ink. If applicant is a governmental body, a copy of the official council, board, or other action authorizing the signer of the application to apply for a grant must accompany the application.

PART I, SECTION B, SUMMARY DESCRIPTION OF PROJECT

Self-explanatory

PART I, SECTION C, APPROVAL BY STATE WATER POLLUTION CONTROL AGENCY

Not required

The Act requires that Class III (Storm and Combined Sewer) and Class IV (Advanced Waste Treatment) grant applications be approved by the appropriate State water pollution control agency. Prior to submission to FWPCA, submit the completed application to the water pollution control agency of the State (s) in which the project will be conducted as identified in Part I, Section A-4.

ATTACH LETTER OF APPROVAL

PART I, SECTION D-1, FINANCIAL SUMMARY

1. Estimated Project Costs During Grant Period

A. thru J. - The amounts shown for each Budget Category are to be taken from Part I, Section D-2, FINANCIAL DETAIL. The first column should indicate the total funds required for each budget category during the

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* Grants for Class I and Class II projects are normally made for a maximum grant period of 12 months. Continuation grants for additional grant periods of up to 12-months each are subject to availability of appropriated funds and successful development of the project. Grants for Class III, IV, and V rojects are normally made for the total project period.

grant period. The second column should indicate the grant funds being requested for each item. Show the totals of items A. thru I. in the appropriate space.

J. Indirect Costs - Indirect costs, as described in Bureau of the Budget Circular No. A-21 (Revised), are those costs which, because of their nature, are normally not identified with specific or individual projects. A grantee's general and administrative costs such as personnel management, accounting, purchasing, and normal maintenance and protection of the grantee's facilities are examples of indirect costs and shall not be charged as direct costs unless, because of special circumstances, an exception is specifically approved by the FWPCA in advance.

Indirect cost rates are established in one of the following ways: (1) by a previous Government agency audit, (2) by the applicant's own cost accounting practices, or (3) by special computation for the grant project. The latter two methods will require approval based upon Government audit, but a provisional rate may be used until an audit is performed. In these cases, provide a detailed computation on a separate sheet to show how the proposed provisional rate is determined. In no instance may indirect cost rates be applied to contract expenditures for consultant, equipment, other contracts, or construction. Enter cost in the appropriate space.

K. thru S. (if applicable) - The amounts shown for each Budget Category are to be taken from Part I, Section D-2, FINANCIAL DETAIL. The first column should indicate the total funds required for each budget category during the grant period. The second column should indicate the grant funds being requested for each item. Show the totals of items K. thru S. in the appropriate space and the total project costs (A. thru S.) where indicated.

2. Proposed Funding

A. Applicant's Share - Cost sharing is required for all grant projects. The minimum share of the total project cost to be borne by the applicant is:

Classes I & II	5 percent of total project costs
Classes III & IV	25 percent of total project costs
Class V	40 percent of total project costs

One factor which will be considered in the evaluation of a proposed project is the share of project costs which the Applicant proposes to bear above the minimum share required.

Note: The statutory limitation for Federal support on a Class V grant is $1,000,000.

B. Self-explanatory

C. Total - The sum shall be equal to the total R/D/D Studies (A. thru J.) or total Project Costs (A. thru S.)

3. Support to be Used for the Project

Identify the support by source and date available. If an election is required for issue of bonds or levy of taxes, etc., state results and date if held, or plans and proposed date if not yet held.

PART I, SECTION D-2, FINANCIAL DETAIL - RESEARCH/DEVELOPMENT, DEMONSTRATION STUDIES

The estimate of funds required shall be as accurate as circumstances permit. Where the project is incorporated with and only a portion of a larger project, such as a public works project, only the costs relating to the smaller project shall be listed. Where requested information is not applicable, insert N.A. in the space provided.

A. Salaries and Wages - Name principal personnel to be engaged on the project and other personnel (by number of employees). Where applicable provisions of Bureau of the Budget Circular A-21 (Revised), Section [illegible], Stipulated Salary Support, shall be included relating to professional staff support.

B. Fringe Benefits - Name principal personnel and number of other personnel to be engaged on the project; and opposite each, list the types, basis of computation, and amount of fringe benefit costs for this project. This section is to be utilized only if the applicant's established policies treat fringe benefits as direct costs.

C. Self-explanatory.

D. Equipment - Cost of equipment to be used on the project shall be detailed here. Indicate whether the equipment will be purchased, rented, or furnished by the applicant. If furnished by the applicant, give details on computation of use allowance requested on separate sheets. Documented justification for purchase of equipment must be available for audit purposes.

E. thru G. Self-explanatory.

H. Other - Identify the nature, purpose, and estimated costs of all items not identified in other categories.

I. thru J. Self-explanatory.

PART I, SECTION D-2, FINANCIAL DETAIL - FACILITIES

K. Construction - Engineering Plans - Provide an estimate of the cost of preparation of plans and specifications.

L. Construction - Supervision - Provide an estimate of the cost of supervision of construction.

M. Construction - Contracts - List anticipated and known contracts (including site construction and identifying numbers) for construction, alterations and renovations and describe the purpose and estimated costs for each.

If construction is to be phased or otherwise divided, list funds required for the later contracts and describe the purpose and estimated cost of each. Provide a total of estimated costs for this category.

N. Construction - Materials - Cost of materials and equipment to be used in the construction portion of the project and to be furnished by the applicant shall be detailed here. Indicate whether the equipment will be purchased, rented, or furnished by the applicant. If furnished by the applicant, give details on computation of use allowance requested on separate sheet. If construction work, or a portion thereof, will be performed by the applicant's personnel, include "Force Account" in this category and give details (number of persons, time or effort, payroll costs). Provide a total of estimated costs for this category. Documented justification for purchase of equipment related to this project must be available for audit purposes.

O. thru S. Self-explanatory. These items refer to the technical services and operation and maintenance activities associated with the construction facilities phase of the project.

PART I, SECTION E, PROJECT SCHEDULE

1. Data on Contracts

If any contracts have been let which will involve project funds, so indicate. This includes construction, engineering services, etc.; the listing should include the purposes of the contract, name of contractor, and date of contract. A copy of any contract(s) already let should be submitted with the application.

2. Schedule

Self-explanatory. Not applicable to Class I Grants. In the case of Class I Grants, project phasing should be included in the Project Plan, PART II, SECTION A, item 3., Plan of Operation.

PART II, DETAILED PROJECT DESCRIPTION

PART II of the application shall provide a detailed description of the project plan, supporting information and miscellaneous information. The description shall be prepared in accordance with the following outline to assist in the review of the application.

PART II, SECTION A, PROJECT PLAN

1. Project Objectives

2. Need for Project

   Explain how the anticipated results of the proposed project should contribute information and technology relating to the causes, control, or prevention of water pollution and why the results will be of importance.

3. Plan of Operation

   Show how the plan will fulfill each of the project objectives. As much detail as possible should be included relating to: background information (e.g., waste stream characteristics, receiving water characteristics, waste stream sources, etc.); equipment and instrumentation; sampling procedures and analytical methods, types of data to be collected; flow sheets; construction design concepts; calculations; flow capacities; phasing of the project (including target dates for the phases); method of evaluating results; reporting schedules; etc. Applications relating to projects involving storm and/or combined sewers or other projects in which the collecting sewers affect the study or demonstration should include description of the portions of the system involved in the project, rainfall characteristics, discussion of points of overflow or by-pass and other factors critical to project design and performance.

4. Project Facilities

   Describe the laboratory, plant, or other facilities and major items of equipment (a) available and (b) needed for the project. Itemize and justify items of needed equipment costing over $2,500. Major items to be determined during the course of project engineering design and planning not yet accomplished need not be included.

PART II, SECTION B, SUPPORTING INFORMATION (To be provided on Blank Pages Titled, "PART II, SECTION B, SUPPORTING INFORMATION")

1. Project Personnel

   Provide brief biographical data for the Project Director and other principal personnel proposed for conducting the project. Describe

Designation - Name
Block
Remarks

experience that is particularly pertinent to the proposed project. Be sure to include the following items:

(a) Social Security Number
(b) Professional Title
(c) Education, degree, and year conferred (begin with baccalaureate training and include postdoctoral)
(d) Major research and/or professional interest

2. Other Project Activity

List all active research, development, and demonstration projects in which the Project Director is engaged. For each project, identify the following:

(a) Supporting agency or organization
(b) Grant or contract number
(c) Title of Project
(d) Time (hours) or effort (percent of total working time) of the Project Director
(e) Estimated project costs
(f) Project period with dates

Identify any other agencies or organizations to which this application has been submitted.

3. Publications and References

(a) Cite important publications or reports by the Project Director and other principal personnel which relate to this or similar work.

(b) Discuss important publications or reports by others which are significantly related to the proposed project.

PART II, SECTION C, MISCELLANEOUS INFORMATION (To be provided on blank pages titled, "PART II, SECTION C, MISCELLANEOUS INFORMATION")

1. For Class I and II continuation applications, Part II shall include a summary of expenses, by major budget categories, for the funded year in progress, as follows:

		Budget Categories		
Column (1) Current Budget	Column (2) Actual Expenditures Through_____	Column (3) Estimated Additional for Remainder of Current Grant Period	Column (4) Total Estimated (Col.2 plus Col. 3)	Column (5) Estimated Unexpended Balance (Subtract Col. 4 from Col. 1)

2. For Class I and II grants, if continuation support is desired, it is the responsibility of the grantee to submit the continuation application to FWPCA in sufficient time prior to the expiration of the present grant period so that review and decisions may be made. Continuation applications should be submitted at least twelve weeks prior to expiration of the grant period. A progress report (an original and 7 copies) is required and becomes part of the continuation application.

3. Costs for purchases or rental of land are generally not allowable as costs to be supported by Federal funds. Complete information must be provided to assure that the applicant has legal right for use of land involved at least for the duration of the project.

WPRD-186-01-68

APPLICATION FOR RESEARCH AND DEVELOPMENT GRANT
CUYAHOGA COUNTY SEWER DISTRICT IMPROVEMENT NO. 615
ROCKY RIVER WASTEWATER TREATMENT PLANT
DETAILED DESCRIPTION OF PROJECT
CHEMICAL CLARIFICATION AND CARBON FILTRATION-ADSORPTION
AS SECONDARY TREATMENT

REVISION OF PROJECT TO INCLUDE PHOSPHATE REMOVAL

INTRODUCTION

The original application for a research and development grant applied to a process of secondary treatment employing chemical clarification using polymer flocculants and carbon filtration and adsorption. The application is revised to incorporate investigation on a plant scale basis of the use of various coagulants and coagulant aids in the clarification phase of the process for the purpose of effecting phosphate removal.

The following statements are additions to the statements of original application, listed in conformance with the outline of the original application and section headings:

PROJECT PLAN

1. OBJECTIVES

The original objectives of the project remain - the practical application of the principles of clarification and carbon adsorption and filtration to provide an advanced method of secondary treatment. It is understood, however, that the secondary treatment objective includes also the removal of phosphate from the wastewater to the extent possible by the clarification and carbon processes and within the limits of capability of existing facilities to handle the resulting solids load (sludge thickening, digestion, vacuum filtration and incineration).

2. PLAN OF OPERATION

To the plan of operation the following is added:

3A) On a plant scale basis investigate a) the effect of the use of various coagulants (e.g., alum, lime, ferric sulfate) and coagulant aids (polymers) in the existing clarification phase of the process in the removal of phosphate and b) the amount of sludge produced in the use of coagulants as compared with normal operation and problems in handling such sludge as compared with normal sludge. It is proposed that this investigation be carried out as soon as practical and prior to the completion of construction of the proposed carbon process installation. So far as possible the investigation will be made using one of the four existing primary aerated clarifiers by split treatment in order to make comparisons with normal operations

Investigations during the trial operating period (post-construction) will include the following modification:

5) h) Based on the results obtained in the work under 3A investigate efficiency of phosphate removal by the clarification and carbon process employing selected coagulants and coagulant aids.

3. NEED FOR PROJECT

A further need for the project is to demonstrate the capabilities of the clarification process and carbon process in the removal of phosphate and to accumulate essential data thereon.

4. FACILITIES AVAILABLE

For the purpose of the initial investigation of phosphate removal by coagulation, the existing primary treatment installation includes facilities for polymer and chemical application and rapid mixing for the total waste flow and flocculation by diffused air and sludge recirculation by air lift in each settling tank. No means are now available for rapid mixing in the individual settling tanks, for direct measurement of sludge produced and for the separate handling (thickening and digestion) of the sludge. Separate rapid mixing, a probable requirement, can be provided by revamping the existing mix chamber or possibly by turbulence in the clarifier influent pipe. Polymer and chemical feeding can be adapted for application to a single tank. Provision can be made by piping change to separately thicken and vacuum filter raw sludge. Investigation of experimental digested sludge handling is not practical. It may be necessary to investigate the quantity of sludge and its characteristics on a laboratory scale.

SUPPLEMENTAL DATA

5. PROPOSED BUDGET DETAILS

Adjustments have been made to the preliminary estimates of construction cost based on more elaborate building, equipment and control system for the carbon process, provision for phosphate treatment as part of clarification, and changes in the miscellaneous plant improvements as now visioned.

The following then is a revised preliminary estimate of funds required for the proposed project, including construction cost for the clarification-carbon process installation for a 10 mgd plant and other plant improvements considered advisable and operation and research costs for the initial investigation of phosphate removal by coagulation in the existing primary clarification installation and of solids handling and similarly for the post-construction study and report.

	Grant Participation	Total Project
1. Construction		
a. Contract No. 1		
Settled Sewage and Wash Water Pumping		
Pumping Station building	$57,500	

		Grant Participation	Total Project
Pumps	39,500		
Piping and valves	23,000		
Electrical	10,000		
Contingency	13,000		
Total		$ 143,000	$ 143,000
Carbon Contactors and Regeneration			
Contactors	336,000		
Regeneration section	27,600		
Regeneration furnace	37,800		
Piping, valves and meters	196,600		
Instruments and electrical	20,000		
Building and foundations	282,600		
Granular carbon	243,000		
Contingency	104,000		
Total		1,249,600	1,249,600
Yard Piping		60,000	60,000
Site Development			
Road and Walks	18,000		
Fence	2,800		
Landscaping	3,200		
Total		24,000	24,000
Phosphate Treatment			
Revisions of feeding equipment	15,000	15,000	15,000
Digester Supernatant Treatment			
Aeration and chemical treatment of digester supernatant to reduce load on primary treatment		-0-	85,000
Miscellaneous Plant Improvements			
Scum pipe heating	4,000		
Scum burning equipment	45,000		
Sludge thickener pumps & piping	18,000		
Chlorination pumps and piping	3,000		
Digester gas utilization equipment	10,000		
Odor control equipment	10,000		
Miscellaneous items	10,000		
Total		-0-	100,000
Total Construction Cost - Sub total		1,491,600	1,676,600

			Grant Participation	Total Project
2.	Technical Services			
	a. Preliminary Studies and Report-previous		-0-	7,500
	Preliminary studies and report - Phosphate Removal (see detailed budget)		32,700	32,700
	b. Engineering Plans and Specifications-4.31%*		64,200	72,000
	c. Supervision of Construction-1.44%*		21,500	24,000
	Resident Engineer & Inspectors-4.0%*		59,700	67,000
	d. Post-Construction Studies & Reports -			
	One Year Research Director, full time, 1 year	10,000		
	Analyst, full time, 1 year	7,000		
	Consulting Engineer, ½ year	6,000		
	Carbon supplier consultant, ½ year	9,000		
	Lab Equipment - TOC analyser	7,000		
	Special off-site carbon analyses	1,000	40,000	40,000
	Total Technical Services Cost - sub total		218,100	243,200
	* Percent of construction cost			
3.	Operational and Maintenance Activities			
	Personnel - 3 full time operators	18,000		
	Power - 1,150,000 KWA @ 1.5¢	17,250		
	Carbon - 55,000 lb. @ 26¢	14,300		
	Polymer - 3,650 lb. @ 1.50	5,475		
	Gas - 5,720 MCF @ 70¢	4,000		
	Maintenance	3,000		
	Total annual Operation and Maintenance		62,000	62,000
	Note: The above does not include the present annual operating cost of existing primary treatment plant amounting to $206,000 or the cost of phosphate treatment or additional sludge handling.			
4.	Legal and Fiscal - 1% of construction cost		14,900	16,700
5.	Administrative - 1% of construction cost		14,900	16,700
6.	Contingency - 5% of construction cost		74,500	83,800
7.	Other Interest during construction		52,200	58,900
8.	Site		-0-	-0-
9.	Total		1,928,200	2,157,900

BUDGET FOR PHOSPHATE TREATMENT STUDY

A. PLANT PREPARATION

1.	Revamp existing rapid mix chamber to provide mixing of chemicals for a single aerated clarifier by partitioning tank and moving mixer	$ 1,200
2.	Revise thickened sludge piping to permit bypassing of digesters and vacuum filtration of raw thickened sludge	500
3.	Provide separate primary sludge line from one clarifier to one sludge thickener to permit separate handling of experimental sludge	3,200
4.	Provide lift truck for bag handling of chemicals	3,800
		$ 8,700

B. PURCHASE OF CHEMICALS

Average flow for one clarifier - 4 mgd
Three runs of 5 days each with each coagulant at different dosages

Lime at 300,400, & 500 ppm	15 days @ $160	$ 2,400
Alum at 100,200, & 300 ppm with lime	15 days @ $224	3,360
Ferric sulfate at 100,200 & 300 ppm with lime	15 days @ $240	3,600
Coagulant aid at 1 ppm	45 days @ $ 50	2,250
Other coagulants (ferrous chloride, aluminate, etc.)	15 days @ $200	3,000
		$ 14,610

C. OPERATIONAL LABOR AND PERSONNEL

Additional labor required for tests and report over and above normal labor.

Supervisor of operations	2 hr per day - 60 days 120 hr @ $7	$ 840
Superintendent	4 hr per day - 60 days 240 hr @ $5	1,200
Operator for chemical feed	16 hr per day - 60 days 960 hr @ $4	3,840
Operator for sludge filter	8 hr per day - 20 days 160 hr @ $4	640
Lab technician	4 hr per day - 30 days 120 hr @ $4	480
Mechanic & Misc. labor	8 hr per day - 15 days 120 hr @ $5	600
Report writing (supervision)	40 hr @ $7	280
Consulting Engineer	15 days @ $100	1,500
		$ 9,380

Revised WPRD-186-01-68

APPLICATION FOR RESEARCH AND DEVELOPMENT GRANT

Financial Information as of Date of Application

A. Funds Required for Project

	For Grant Participation	Total Project
1. Construction		
a. Contract Number 1	$ 1,491,600	$ 1,676,000
b. Later Contracts	$	$
c. Equipment and Materials	$	$
Sub-Total	$ 1,491,600	$ 1,676,000
2. Technical Services	$	$
a. Preliminary Studies and Reports ...	$ 32,700	$ 40,200
b. Engineering Plans and Specifications .	$ 64,200	$ 72,000
c. Supervision of Construction	$ 81,200	$ 91,000
d. Post-Construction Studies and Reports (Totals from D)	$ 40,000	$ 40,000
Sub-Total	$ 218,100	$ 243,200
3. Operation and Maintenance Activities (Totals from C)	$ 62,000	$ 62,000
4. Legal and Fiscal	$ 14,900	$ 16,700
5. Administrative	$ 14,900	$ 16,700
6. Contingency	$ 74,500	$ 83,800
7. Other (Specify) ..... Interest	$ 52,200	$ 58,900
8. Site	$ XXXXXXXX	$ -0-
Sub-Total	1,928,200	
9. Total 75% of 1,928,200	$ 1,446,100	$ 2,157,900

APPLICATION FOR RESEARCH AND DEVELOPMENT GRANT

Revised
5-9-PRD-186-01-68

. FUNDS TO BE USED FOR THE PROJECT

	Amount	Date Available
Cash	$	
General Obligation Bonds	$ 711,800	Prior to construction
Revenue Bonds or Certificates	$	
Anticipated Federal Grant	$ 1,446,100	XXXXXXXX
Other (Specify)	$	
TOTAL	$ 2,157,900	

C. SUMMARY OF ESTIMATED COSTS FOR OPERATION AND MAINTENANCE OF PROJECT

Operation and Maintenance Activities to be Covered: (Itemize amount per year for labor, chemicals, utilities, supplies)

Labor

Man Years 3

Cost $ 18,000

Electrical Power

Kilowatt-hours 1,150,000

Cost $ 17,250

Chemicals

Specify	Amount	Cost
Carbon	55,000 lb.	$ 14,300
Polymer	3,650 lb.	$ 5,475

Other

Specify	Amount	Cost
Fuel (gas)	5720 MCF	$ 4,000
Miscellaneous		$ 1,000

D. SUMMARY OF ESTIMATED COSTS FOR STUDIES OF METHOD BEING DEMONSTRATED
(Itemize amount for professional and support personnel equipment)
See attached budget for additional studies on phosphate treatment.

Personnel

Man Years 2½

Cost $ 32,000

Equipment

Type TOC analyser

Cost $ 6,000

Other

Specify	Amount	Cost
Miscellaneous lab equipment		1,000
Special carbon analyses		1,000

(6)

[illegible]
County Sanitary Engineer
Cuyahoga County Bldg. Annex
[illegible]
1279 West 3rd St.
Cleveland, Ohio 44113

Re: Rocky River
Wastewater Treatment Plant
R & D Grant No. 11010 DAB

Dear Sir:

We have reviewed the terms of the original federal grant and have revised the eligible costs based on bid prices for construction and adjusted cost of related activities including phosphate treatment, post-construction studies and first year operation and maintenance of the demonstration facilities. The bid prices are based on low bidders. In view of possible litigation on the low bidders the final cost may increase.

The original federal grant application was dated November 8, 1967 and revised on May 7, 1968 to include phosphate treatment. The increase in cost is due to the lack of reliable experience data on a totally new sanitary engineering process and inflationary cost increase during the past several years.

The federal agency in its grant offer excluded from eligible cost the cost of substructures and foundations for the settled sewage pumping station and carbon contactor facilities, and the superstructures. We are in agreement that the treatment facilities could be conceivable constructed and operated without superstructures. The pumping station and carbon facilities however, could not be constructed and operated without a wet well, dry well and foundations. We have therefore taken the liberty to add to the eligible cost these substructures and foundations. We have also approximately doubled the cost of the experimental phosphate treatment after further considering the practicality of our original conception.

The requested grant is $1,413,000 including research costs and [illegible] first year operation of the demonstration facilities. By comparison, [illegible] project were today eligible for a 30% federal grant or an Ohio Water [illegible] Grant Authority subsidy of 30% the grant would be approximately $1,125,000 (30% x $3,000,000 constructioncost + 25% overhead). If the eligible cost does not include the above mentioned substructures, etc. the grant will amount to $1,125,000 for construction according to our determination.

We believe that the data herewith attached is sufficient for your application for an increase in grant amount.

Very truly yours,

WILLARD F. SCHADE AND ASSOCIATES

BY Willard F. Schade
Willard F. Schade P.E.

WFS:rm

encl.

[illegible]

[illegible] 25, 1970

Eligible costs have been determined in accordance with the terms of the [illegible] grant offer dated July 22, 1966, page 2A. Construction costs have been taken from bids obtained on June 11, 1970 (see attach[illegible] breakdown). Cost of phosphate studies, post-construction studies and operation and maintenance are up-dated from those given in the revised application submitted to Cuyahoga County on May 7, 1968.

ELIGIBLE COSTS

1. Construction		$ 2,256,140
2. Technical Services		
A. Phosphate studies	$ 60,000	
B. Plans and specifications, 4.31%	97,260	
C. Supervision of construction, 1.44%	32,450	
D. Resident engineer and inspector, 4.0%	90,250	
E. Post-construction studies	65,000	
		$ 345,020
3. Operation and Maintenance		
A. Personnel, power, supplies	$ 70,000	
B. Phosphate treatment and additional sludge handling @ 4¢ per 1000 gal.	155,000	
		$ 225,000
4. Total Eligible Cost		$ 2,826,160
5. Federal Grant Offer (50%) or		$ 1,413,000

[illegible]

[illegible]	[illegible] piping, [illegible]	22[illegible] CY	10.3[illegible]	$ [illegible]
[illegible]	[illegible]	[illegible] CY	19.15	[illegible]
[illegible]	[illegible]	39% Ton	[illegible]	[illegible]
[illegible]	[illegible] supernatant treatment	110 CY	13[illegible]	[illegible]
[illegible]	[illegible] supernatant treatment	[illegible] CY	65.92	[illegible]
[illegible]	[illegible] cradle [illegible] seal for supernatant treatment	165 CY	65.92	[illegible]
[illegible]	[illegible]	6.3 Ton	517.06	[illegible]
[illegible]	[illegible] piping, tunnels, sewers, [illegible]	[illegible]		[illegible]
[illegible]	[illegible] from Pipes & Fittings	100		[illegible]
[illegible]	[illegible]	100		[illegible]
[illegible]	[illegible] Equipment	97.[illegible]	102,044	[illegible]
[illegible]	[illegible] & Control Equipment	100		[illegible]
[illegible]	[illegible] & Absorption, transfer & [illegible]-generation Equipment	100		[illegible]
[illegible]	[illegible] treatment Equip.	100		[illegible]
[illegible]	Miscellaneous Metal, etc.	100%		[illegible]
[illegible]	Painting	50%	X 41,475.00	[illegible]
23	Laboratory and Office Equip.	100%		[illegible]
24	Crane and Hoist Equipment	100%		[illegible]
25	Chemical Handling Equipment	100%		[illegible]
				$ 1,847,522.00

CONTRACT 2 - PLUMBING WORK

21	Water seal piping, motive water piping	24%	x 33,500	$ 8,040.00

[illegible] [illegible]

[illegible] Basic building electrical work, bar screen, effluent pump processing, degritting, and disintegrator

Total Bid	$ 145,697	
Less building electrical 11921 sq ft @ 1.50	-17,881	
Total HP - 947	127,816	
Less deleted HP - 53 or 6.1%	-7,796	$ 120,020.00
	Total	$ 1,975,982.00

The General grant offer has been interpreted to consider ineligible the substructures and foundations required to install the settled sewage pumps and the carbon contactors and regeneration, and the superstructure to house these facilities. The substructures and foundations of the settled sewage pumps and carbon contactors are an intrinsic part of these facilities, that is, the pumps and carbon contactors could not be installed without the substructures and foundations and these substructures and foundations have no value except as a part of the equipment facilities. Therefore the cost of the substructures and foundations is herewith added to the eligible cost of the equipment facilities as determined below.

COST OF SUBSTRUCTURE AND FOUNDATIONS

CONTRACT NO. 1 GENERAL CONSTRUCTION

Item 1	Excavation for Carbon Contactors	5350 CY @ $10.30	$ 55,[illegible]
	Excavation for Settled Sewage Pumps	1007 CY @ 10.30	11,[illegible]
4A	Concrete for Carbon Contactors	985 CY @ 145.90	[illegible]
	Concrete for Settled Sewage Pumps	205 CY @ 133.90	33,161
4B	Concrete for Carbon Contactor	8 CY @ 65.92	[illegible]
	Concrete for Settled Sewage Pumps	15 CY @ 65.92	[illegible]
5	Reinforcing Steel for Carbon Contactors	63 Tons @ 517.06	[illegible]
	Reinforcing Steel for Settled Sewage Pump	22.8Ton @ 517.06	11,789
		Total	$ 266,157
	TOTAL ELIGIBLE CONSTRUCTION COST		$2,250,139

BUDGET FOR SUBURBANITE TREATMENT STUDY

A. Plant Preparation

1. Revamp rapid mix chamber to provide mixing of chemicals for a single clarifier by partioning tank and installing new mixer or moving existing mixer $ 1,[illegible]
2. Provide separate primary sludge line from one clarifier to one sludge thickener to permit separate sludge handling 4,800

5. Miscellaneous work		400
		$ 7,000

4. [illegible] CHEMICALS

Average flow for one clarifier - 4 mgd
Three runs of 10 days each with each of 4 coagulants at 3 different dosages with 5 different coagulant aids (2 days with each aid)

Lime at 300, 400, 500 ppm	30 days @ $200	$ 6,000
Lime at 100,200, & 300 ppm with lime	30 days @ 270	8,100
Ferric sulfate at 100, 200, 300 ppm with lime	30 days @ 290	8,700
Ferric chloride at 100, 200, & 300 ppm with lime	30 days @ 270	8,100
Coagulant aids at 1 ppm	120 days @ 50	6,000
Other coagulants (aluminate, etc.)	15 days @ 220	3,300
		$ 40,200

5. [illegible] LABOR AND PERSONNEL

Additional labor required for tests and report, above normal labor.

Supervisor	2 hr per day, 120 days = 240 hrs. @ $9	$ 2,160
Superintendent	4 hr per day, 120 days = 240 hrs. @ $7	1,680
Clarifier Operator	16 hrs. per day, 120 days = 1920 hrs. @ $6	11,520
Filter Operator	8 hr per day, 20 days = 160 hrs. @ $6	960
Lab Technician	4 hr per day, 80 days = 320 hrs @ $5	1,600
Miscell. Labor	8 hr per day, 20 days = 160 hrs @ $5	800
Report writing	80 hrs @ $9	720
Consultant	20 days @ $120	2,400
		$ 21,840
	Grand Total	$ 69,040

[illegible] FOR POST-COAGULATION STUDIES

Research Director, full time, 1 yr.	$ 10,000
Analyst, full time, 1 yr.	10,000
Consulting engineer, 50 days	[illegible]
Carbon supplier consultant, 60 days	[illegible]
Lab equipment - TOC, turbidity, etc.	10,000
Carbon analyses	1,000
Miscellaneous	4,000
Total	$ 50,000

[illegible] OPERATIONAL AND [illegible] ACTIVITIES

Full time - 3 full time operators, 1 yr.		$ 30,000
Power	- 1,150,000 KWH @ 1.5¢	17,250
Carbon	- 55000 lb @ 26¢	14,300
Polymer	- 6300 lb. @ 1.50	9,450
Gas	- 5720 MCF @ 70¢	4,000
Maintenance		4,000
Total		$ 79,000

ENVIRONMENTAL PROTECTION AGENCY

WATER QUALITY OFFICE

(7)

14X1201
Appropriation

11010 DAB Supp.
Program (Project) Number

11014000/101
Allocance/PPB

R&D Account Number

CLASS IV

OFFER AND ACCEPTANCE OF FEDERAL GRANT FOR RESEARCH AND DEVELOPMENT
UNDER 33 U.S.C. 466 et seq.

The Environmental Protection Agency pursuant to the Federal Water Pollution Control Act, as amended, and the attached Rules and Regulations hereby offers to the Applicant named herein a grant to assist in the accomplishment of the project described in the application provided the Agency receives from the Applicant within thirty days; 1) the Patents and Inventions Article Agreement, 2) the Assurance of Compliance (Title VI, Civil Rights Act of 1964), and 3) the completed Offer and Acceptance Document. The Offer is as follows:

A. Location of Project (State, City) Ohio, Rocky River

B. Legal Name and Address of Grantee Board of County Commissioners
Cuyahoga County
1219 Ontario Street
Cleveland, Ohio 44113

C. Financing Under Terms of this Offer

Period of this Grant commencing August 16, 1968 and ending July 31, 1973

Eligible Grant Period Costs for EPA Participation . . . . . $2,573,810.*

EPA Grant Offered . . . . . $ 250,000.
or 38.52 %** of Eligible Grant Period Costs, whichever is less.

Future support will be subject to availability of funds and successful development of this project.

D. Progress, final, and other reports including the number of copies and the routing required are specified in the Special Offer Conditions. The grantee agrees to prepare an abstract of the final report for the Water Resources Scientific and Information Center, Department of the Interior. Forms and Guidelines will be supplied by Project Coordination, Office of Research and Development.

A completed Notice of Research Project for the Science Information Exchange is required for this project. Forms and instructions are enclosed.
X is not required for this project.

*Revised.

**Based on total award, including this supplement.

ENVIRONMENTAL PROTECTION ... OFFICE

11010 DAB Supp.
Program (Project) Number

E. Description of Project

Title: Chemical Clarification, Carbon Filtration and Adsorption, and Phosphate Removal as Secondary Treatment for Rocky River Wastewater Plant.

Project Objectives and Description of Work:

The Rocky River Plant will demonstrate physical-chemical treatment at 10 MGD in place of conventional biological activated sludge. Polymer flocculants will be used for chemical clarification; phosphate removal will be effected by use of various coagulants and coagulant aids. The primary clarified effluent will be padded through columns of activated carbon for filtration of suspended solids and adsorption of organic pollutants. Preliminary studies will be made to select polymers and coagulating chemicals for achieving the most effective treatment of the full-scale waste stream. The plant will include sludge disposal from the primary tanks by anaerobic digestion; digester solids will be incinerated; digester supernatant will be treated in a small activated sludge unit wh ch includes mineral addition. Operating procedures, design criteria and cost information will be developed during the demonstration phase.

Project Director

John H. Puzenski
Sanitary Engineer of Cuyahoga County
County Administration Bldg. Annex
1279 West 3rd Street
Cleveland, Ohio 44113

Financial Officer to Receive Funds

Board of County Commissioners
Cuyahoga County
1219 Ontario Street
Cleveland, Ohio 44113

F. Budget for this Grant Period. See Page 3 of the grant application which is included following this page. Columns headed "EPA Use Only" constitute the eligible costs and the respective EPA offer which shall be controlling as far as any payments by the Government under this grant.

JDGET FOR THIS GRANT PERIOD

Revised budget includes this supp ent. 11010 DA3 Supp

	ITEM	PROPOSED BY APPLICANT		Accepted By EPA	
		[illegible]	[illegible]	ELIGIBLE COSTS	EPA Offer
RESEARCH/DEVELOPMENT/DEMONSTRATION STUDIES	A. SALARIES AND WAGES	42,480	23,364	19,440	9,720
	B. FRINGE BENEFITS	0	0	0	0
	C. CONSULTANT SERVICES	17,400	9,570	2,400	1,200
	D. EQUIPMENT	10,500	5,775	7,000	3,500
	E. SUPPLIES	45,200	24,860	40,200	20,100
	F. TRAVEL	0	0	0	0
	G. PUBLICATION COSTS	2,500	1,375	0	0
	H. OTHER	7,000	3,850	0	0
	I. ~~OPERATIONS~~ Post Construction Studies	0	0	56,500	28,250
	TOTAL DIRECT COSTS (A thru I)	125,080	68,794	125,540	62,770
	J. INDIRECT COSTS	0	0	0	0
	TOTAL R D D STUDIES (A thru J)	125,080	68,794	125,540	62,770
FACILITIES	K. CONSTRUCTION ENGINEERING PLANS	126,738	47,693	87,700	43,850
	L. CONSTRUCTION - SUPERVISION	155,964	58,690	107,490	53,745
	M. CONSTRUCTION - CONTRACTS	3,032,649	1,086,790	1,975,980	692,435*
	N. CONSTRUCTION - MATERIALS	0	0	0	0
	TOTAL CONSTRUCTION (K thru N)	3,315,351	1,193,173	2,171,170	790,030
	O. OPERATION - SALARIES & WAGES	56,000	30,800	56,000	28,000
	P. OPERATION - FRINGE BENEFITS	0	0	0	0
	Q. OPERATION - SUPPLIES	173,920	95,656	169,900	84,950
	R. OPERATION - UTILITIES	39,200	21,560	39,200	19,600
	S. OPERATION - REPAIRS	8,000	4,400	12,000	6,000
	TOTAL OPERATION (O thru S)	277,120	152,416	277,100	138,550
	TOTAL FACILITIES (K thru S)	3,664,471	1,385,189	2,448,270	928,580
	TOTAL PROJECT COSTS (A thru S)	3,717,551	1,414,383	2,573,810	991,350

*Includes this $150,000 supplement.

11010 DAS Supp.
Program (Project) Number

G. Special Offer Conditions:

1. Reports:

Unless otherwise formally agreed upon or specified herein, the following reports shall be prepared by the Grantee and forwarded as follows:

a. Final Project Report - Four copies of the final manuscript shall be sent to the EPA Project Officer by registered mail, for final approval, within three months after completion of the project. After receiving final approval, the Grantee shall send the reproducible master manuscript (camera-ready) to Head, Projects Reports System, Office of Research and Development, EPA, Room 1108, Washington, D. C. 20242, by registered mail. Reproduction of the report will be accomplished in accordance with the current Government printing and Binding Regulations. Photo-offset printing methods will be used. Grantee will be provided with 50 copies of the report when reproduced. Preparation of the report shall be in accordance with the enclosed "Final Report Specifications for Grant, Contract, and In-House Projects, March 1970."

b. Annual Progress Report - Ten copies of an interim or annual progress report describing the progress made, including comments or any other significant information or problems, are to be submitted to the assigned EPA Project Officer.

c. Monthly Progress Report - Three copies of a monthly progress report are to be submitted for Class III, Class IV and Class V grants. Details on report content will be supplied by the assigned EPA Project Officer.

2. Name Change. Wherever Federal Water Pollution Control Administration, or FWPCA, and Federal Water Quality Administration, or FWQA, appears herein, it shall mean Environmental Protection Agency, or EPA, respectively.

3. In addition to the patent provisions attached to this Grant Offer, in the case of any grant calling for experimental or developmental research work or work intended to establish either the technical value or the economic feasibility, in connection with either waste treatment or water pollution control, of a process, machine, article of manufacture or composition of matter, rights to which are owned by a party other than the grant applicant and which has not been sold or offered for sale to the public in the commercial open market, or in the case of a process, has not

11010 DAB Supp.
Program (Project) Number

been made available in a manner such that its benefits are generally accessible to the public, the grant applicant shall:

(a) Obtain from the owner of such rights a written agreement that said owner will itself or through a licensee make the subject matter of such rights available in the commercial open market to all interested members of the public, or will license others to do so, on reasonable terms and reasonable royalties. The grant applicant shall submit a copy of such agreement to the Administration along with its grant application; and

(b) Obtain for the Government, with regard to information pertaining to a process, machine, article of manufacture, or composition of matter which is a vital part of a proposed research or demonstration project and is proprietary to a party other than the grant applicant, (1) sufficient functional, generic, and mechanical description relative thereto to enable an understanding of its subject matter relative to the project, and (2) permission for the Government to disseminate freely all data and information obtained as a result of such project, as well as the aforementioned functional, generic, and mechanical description.

4. Completion of PI Form 1350, Assurance of Compliance, Title VI of the Civil Rights Act of 1964 (P.L. 88-352) is required.

5. Progress payments will be made on a reimbursable basis and will be based on progress and expenditures reported in the periodic progress reports required in Item 1.

6. The applicant will act in accordance with the contents and conditions imposed by the following attached documents: Tentative Rules and Regulations, Research and Development Grants; FWPCA Patents and Inventions Article; and Section 6 of the Clean Water Restoration Act of 1966.

7. Grant funds in the amount of $10,000. will be withheld pending receipt of the final report and completion of the final audit.

8. This grant is not to be regarded as relieving you of responsibility for meeting any requirements imposed under Federal, State, or local authority for providing required treatment insofar as presently available technology permits.

9. Revocation of grants. After consultation with the Project Director(s) and the Grantee Institution, a grant may be revoked, in whole or in part, except that a revocation shall not affect any commitment of grant funds.

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Program (Project) Number

which in the judgment of the EPA and the Grantee, had become firm prior to the effective date of the revocation. Upon revocation, the Grantee shall reduce, insofar as is possible, the amount of outstanding commitments and repay by check identified by the appropriate grant number, the uncommitted balance of all funds paid the Grantee under this grant. The most common cause for revocation is expected to be the inability of the Grantee to carry out the research for which the grant is made, or to adhere to other conditions set forth in the grant instrument. As a general rule, the availability of the services of the Project Director(s) named in the grant instrument is one of the conditions of the grant. Consequently, EPA shall be informed immediately, whenever it appears that the Project Director(s) find it impossible to continue to direct the research.

10. Mr. Arthur N. Masse will continue as the assigned EPA Project Officer.

11. The project plan, project schedule and budget presented in your application (and "Revision of Project to Include Phosphate Removal") dated November 1, 1967, and in your supplemental application dated August 5, 1970, is the basis for this Offer and shall be adhered to unless modified by mutual agreement.

ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D. C. ~~20460~~ 20242

MAR 3 1971

REFER TO:
11010 DAB Supp.

Dear Mr. Puzenski:

Your application dated August 5, 1970, for supplemental funding of the above grant has been approved in the amount of $250,000 or 38.52% of the revised total eligible costs $2,573,810. This supplemental funding makes the Environmental Protection Agency support of the project total $991,350.

The grant offer is subject to the terms and conditions set forth in the enclosed Offer and Acceptance document and attachments. Acceptance of this offer must be made by completion of page 5 and returning one signed copy of the complete document within the next thirty (30) days. Retain a signed copy of this agreement for your records.

We wish to encourage you in this demonstration project and are looking forward to receiving the final report.

Sincerely yours,

Acting Commissioner
Water Quality

Mr. John H. Puzenski
Sanitary Engineer of Cuyahoga County
County Administration Building Annex
1279 West 3rd Street
Cleveland, Ohio 44113

Enclosures

cc: Board of County Commissioners
Cuyahoga County

1971
RECEIVED
SANITARY ENGINEERING

BI Form 1250
March 1965

Illustration No. 1

U.S. DEPARTMENT OF THE INTERIOR
ASSURANCE OF COMPLIANCE
(TITLE VI, CIVIL RIGHTS ACT OF 1964)

Board of County Commissioners
Cuyahoga County, Cleveland, Ohio
(Name of Applicant-Recipient) (hereinafter called "Applicant-Recipient")

HEREBY AGREES THAT IT will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and all requirements imposed by or pursuant to the Department of the Interior Regulation (43 C.F.R. 17) issued pursuant to that title, to the end that, in accordance with Title VI of that Act and the Regulation, no person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Applicant-Recipient receives financial assistance from LPA (Bureau or Office) and

Hereby Gives Assurance That It will immediately take any measures to effectuate this agreement.

If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Applicant-Recipient by LPA (Bureau or Office). This assurance obligates the Applicant-Recipient, or in the case of any transfer of such property, any transferee for the period during which the real property or structure is used for a purpose involving the provision of similar services or benefits. If any personal property is so provided, this assurance obligates the Applicant-Recipient for the period during which it retains ownership or possession of the property. In all other cases, this assurance obligates the Applicant-Recipient for the period during which the Federal financial assistance is extended to it by LPA (Bureau or Office).

THIS ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property discounts or other Federal financial assistance extended after the date hereof to the Applicant-Recipient by the bureau or office, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Applicant-Recipient recognizes and agrees that such Federal financial assistance will be extended in reliance on the representations and agreements made in this assurance, and that the United States shall reserve the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant-Recipient, its successors, transferees, and assignees, and the person or persons whose signature appear below are authorized to sign this assurance on behalf of the Applicant-Recipient.

March 30, 1971
DATED

Board of County Commissioners
of Cuyahoga County, Ohio
APPLICANT-RECIPIENT

By John T. Czyzewski
(President, Chairman of Board or a comparable authorized official)

Sanitary Engineer of Cuyahoga County, Ohio

1219 Ontario Street
Cleveland, Ohio 44113
APPLICANT-RECIPIENT'S MAILING ADDRESS

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

PATENTS AND INVENTIONS ARTICLE AGREEMENT

We the undersigned have read the Environmental Protection Agency's Patents and Inventions Article and agree to accept this grant award titled "Chemical Clarification, Carbon Filtration and Adsorption, and Phosphate Removal as Secondary Treatment for Rocky River Wastewater Plant" 11010 DAU Supp., subject to the provisions and requirements contained therein.

John H. Puzenski — March 30, 1971
Name of Official authorized to sign for grantee institution — Date

Sanitary Engineer of Cuyahoga County, Ohio
Title of Official

John H. Puzenski — March 30, 1971
Name of Principal Investigator or Project Director — Date

Sanitary Engineer of Cuyahoga County, Ohio
Title of Principal Investigator or Project Director

11010 DAB Supp.
Program (Project) Number

Signatures

For the United States of America, Environmental Protection Agency, Water Quality Office

MAR 3 1971
Date

Signature

David D. Dominick — Acting Commissioner
Name and Title

On behalf of Board of County Commissioners of Cuyahoga County, Ohio
Legal Name of Applicant

I, the undersigned, being duly authorized to take such action, do hereby accept this offer.

March 30, 1971
Date

Signature of Representative

John H. Puzenski, Sanitary Engineer of Cuyahoga County, Ohio
Name and Title of Representative--Type or Print

COUNTY OF CUYAHOGA
SANITARY ENGINEERING DEPARTMENT

JOHN H. PUZENSKI
COUNTY SANITARY ENGINEER

(8)

ADVANCED WASTE TREATMENT SEMINAR
CLEVELAND ENGINEERING CENTER
April 22 & 23, 1971

EXISTING ROCKY RIVER WASTEWATER TREATMENT PLANT

The purpose of this paper is to discuss the present plant with a brief description of the existing method of treatment and facilities provided to meet the treatment objectives.

The present plant was designed about 1960 using "Intermediate" treatment, basically consisting of chemical coagulation, settling and chlorination. This plant replaced the existing primary treatment plant of two million gallons per day capacity which was grossly overloaded.

By contractual agreement between the several cities to be served by the plant and the County acting as the fiscal and operating agency, the design capacity of the plant was set at 16 million gallons per day. The ultimate population figure of 116,700 persons was determined by the Cuyahoga County Real Property Inventory in 1956. At the time it was felt that the service area was determined for all time and that it would not be unreasonable to provide the ultimate expected capacity.

Four cities make up the service area and include the cities of Rocky River, Bay Village, Fairview Park and Westlake. The total area comprises about 29 square miles with the City of Westlake being equal to about half of the service area.

The City of Westlake is now constructing trunk, lateral and local sanitary sewers. The first flow of sanitary sewage to the Rocky River Wastewater Treatment Plant was received in December, 1970. The present flow of sanitary sewage from the City of Westlake is approximately 600,000 gallons per day.

Returning to the original design, the present plant capacity was set for a population equivalent of 116,700 persons contributing an average of 137 gallons per capita per day for a total design flow of

16 million gallons per day. Allowance was made hydraulically to pass 200% of the average daily flow, or 32 million gallons per day, through the plant with excess storm flow bypassed directly to the outfall sewer From the 1970 annual report wastewater strength was below normal and domestic with a suspended solids content of 179 mg/l and a BOD of 144 mg/l.

Features of the existing plant include a plant by-pass, trash racks, mechanical screening, flow measurement, aerated tanks for grit removal and washing, flash mixing, preaeration, chemical flocullation and settling in four circular tanks, chlorination and final discharge through an outfall sewer extending 1,500 feet into Lake Erie Sludge handling facilities consist of continuous sludge withdrawal from the settling tank to a pair of circular sludge thickeners, two primary anaerobic digestors and one secondary digestor. Digested sludge disposal is accomplished on two vacuum filters with the cake going to landfill or to a multiple hearth incinerator for final disposal. Supernatant from the digestors is returned to the plant influent.

During the period 1964 through 1966 the average daily flow to the plant increased from 4.3 million gallons per day to 5.6 million gallons per day with an average load of 173 mg/l suspended solids and 144 mg/l BOD. The 1970 average flow was 7.53 million gallons per day, BOD 144 mg/l, ss 179 mg/l.

The Board of County Commissioners of Cuyahoga County, Ohio employed Willard F. Schade and Associates to make preliminary investigations, studies and to report on secondary treatment at the Rocky River plant to maximize reduction of BOD, phosphate and coliform concentration, including a general plan, approximate estimate of cost and an investigation of proximity of residences to the treatment plant. Late in 1966 a report was prepared with the recommendation that secondary treatment facilities utilizing the activated sludge process and variation thereof be constructed to treat a flow of 9.33 mgd and population of 90,000 persons with provision to expand the plant to 16 million gallons per day by adding additional final clarifiers at some date after 1980. This first stage of construction would include six aeration tanks, two final clarifiers and two aerobic digestion tanks for waste activated sludge. A future second stage of construction would include conversion of the aerobic digestion tanks to aeration tanks and adding two additional final clarifiers. To accomplish this plan it was further recommended that the County acquire 2.6 acres of privately owned land immediately east of the present plant to accommodate the proposed secondary facilities. A general plan of the layout is shown on Figure . The secondary treatment was based on present day standards of design for activated sludge.

The preliminary report and general plan were approved by the State of Ohio, Department of Health. However, it was deemed necessary to secure

the approval of the general plan from the four municipalities that were party to the agreement providing for the construction and operation of the expanded facility.

Objections to the proposed improvement were raised by residents whose property was required for the proposed secondary treatment construction. The objections were strong and the objectors influential so that it appeared that approval by the City of Rocky River would not be received.

Several alternate arrangements and locations of the secondary treatment facilities were made in an attempt to fit the proposed plant within the area available to the County.

The original plan had envisioned an activated sludge plant using standard air diffusion equipment and circular final clarifiers suitably arranged to permit maximum flexibility of operation. It would have been possible to use the standard system, step aeration, or contact stabilization, and during the first stage, aerobic digestion of waste activated sludge.

Two alternate plans were then developed to meet the requirements of an extremely limited area. The first alternate plan was developed around the idea of a "complete mix" activated sludge at an aeration tank loading rate of 125 lbs BOD_5 per 1,000 cubic feet of aeration tank and a 700 gallon per square foot per day overflow rate for the final tanks. Under this plan the aeration tank loading was almost 4 times the 32 lb rate used in the original plan. It was possible to fit this complete mix plant on the limited site available. The second alternate plan developed was even more daring -- secondary treatment using granular activated carbon. Preliminary evaluation of this second plan showed that area requirements would be the minimum as shown on Figure 1 and pilot plant study indicated the system would work.

The following is a comparison of the area requirements for the original plan and the two alternates.

Standard Activated Sludge	66,000 square feet
Complete Mix	14,000 square feet
Granular Carbon	15,000 square feet

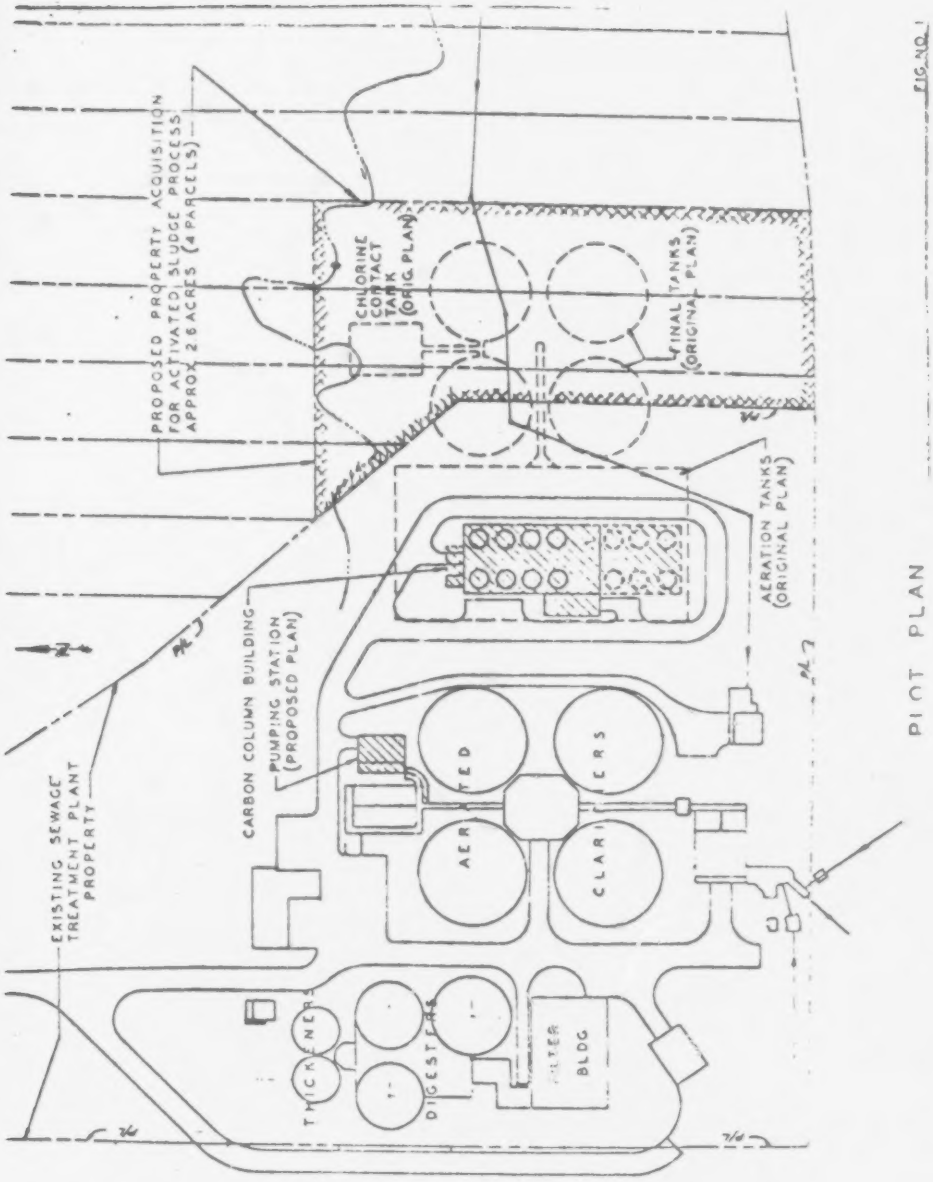
Actually the standard activated sludge plant would require 90,000 square feet, the 66,000 square feet figure representing only the surface area of the tanks. Based on volume the standard activated sludge plant required about 700,000 cf of tankage. The carbon system required on the other hand 360,000 cf of building volume to completely house the facilities

Further study was made of the granular activated carbon system mainly in the realm of published papers and reports of pilot plant study by our County staff under the direction of Mr. Paul Beck, Supervisor of Treatment Plants. Actually the carbon system has been in general use for color and turbidity removal in water supply, tertiary treatment of secondary treatment effluent, clarification of sugar syrups, treatment of pharmacueticals, and removal of tar and nicotine in cigarette smoke. But research did not reveal the use of the carbon system as a secondary treatment of wastewater.

Faced with the problem of land acquisition and esthetic considerations the decision to move ahead with the design of the granular activated carbon system was made based on the following points:

1. The carbon system could be placed well within the space available.

2. The entire secondary treatment system could be completely housed and would be a closed system.



PLOT PLAN

FIG. NO. 1

(9)

April 27, 1971

Mr. John H. Puzenski
Sanitary Engineer of Cuyahoga County
1279 West Third Street, Room 402
Cleveland, Ohio 44113

Dear Mr. Puzenski:

Mr. Willard Schade and I met in Cleveland on April 22 to discuss the plans and specifications for the Rocky River plant. The plans and specifications as revised by Mr. Schade's letters of April 2, April 7 and April 16 to me and by our discussion in Cleveland are hereby approved.

Sincerely yours,

A. N. Messe

Arthur N. Messe, Chief
Municipal Treatment Research Program
Advanced Waste Treatment Research
Laboratory

(10)

BOARD OF
COUNTY COMMISSIONERS
HUGH A. CORRIGAN
FRANK R. POKORNY
SETH C. TAFT

County of Cuyahoga

Cleveland, Ohio

OFFICE OF
JOHN H. PUZENSKI
COUNTY SANITARY ENGINEER
1279 WEST 3rd STREET
CLEVELAND, OHIO 44113
241-2700

August 6, 1971

Board of County Commissioners
County of Cuyahoga
County Administration Building
Cleveland, Ohio

Gentlemen:

Submitted below are the Revised Estimated Costs for the construction of County Sewer District Improvement No. 615(A), said improvement consisting of secondary sewage treatment facilities at the County sewage treatment plant in the City of Rocky River serving Sewer Districts 6, 10 and 12 of Cuyahoga County.

1.	Labor and Material	
	Contract No. 1	
	General Construction	$ 3,078,040
	Contract No. 2	
	Plumbing	80,000
	Contract No. 3	
	Ventilating	7,500
	Contract No. 4	
	Electrical Work	157,350
	Contract No. 5	
	Granular Activated Carbon	196,740
	Total Labor and Material	$ 3,519,630
2.	Engineering, Legal and Contingencies	580,000
3.	Maintenance and Operation	200,000
4.	Interest on Notes	580,000
		$ 4,879,630

CONTRACT AWARDED

On Motion of Commissioner Pokorny, seconded by Commissioner Taft, the following contract was awarded this day as follows:

CONSTRUCTION OF COUNTY SEWER IMPROVEMENT NO. 615A, WASTE-WATER TREATMENT PLANT IN THE CITY OF ROCKY RIVER, OHIO, CONTRACT NO. 4, ELECTRICAL WORK, TO SERVE COUNTY SEWER DISTRICTS NO. 6, 10 AND 12.

Hoffman Electric Construction Company $147,300.00

Ayes: Pokorny, Taft, Corrigan

Nays: None

Resolution Adopted.

Louise M Mulock
Clerk of the Board

Journal 159, Page
January 27, 1972

CONTRACT AWARDED

On Motion of Commissioner Pokorny, seconded by Commissioner Taft, the following contract was awarded this day as follows:

CONSTRUCTION OF COUNTY SEWER IMPROVEMENT NO. 615A, WASTE-WATER TREATMENT PLANT IN THE CITY OF ROCKY RIVER, OHIO, CONTRACT NO. 3, VENTILATING WORK, TO SERVE COUNTY SEWER DISTRICTS NO. 6, 10 AND 12.

The Mannes & Roth Company $7,239.00

Ayes: Pokorny, Taft, Corrigan

Nays: None

Resolution Adopted.

Louise M Maloek
Clerk of the Board

Journal 159, Page
January 27, 1972

CONTRACT AWARDED

On Motion of Commissioner Pokorny, seconded by Commissioner Taft, the following contract was awarded this day as follows:

CONSTRUCTION OF COUNTY SEWER IMPROVEMENT NO. 615A WASTE-WATER TREATMENT PLANT IN THE CITY OF ROCKY RIVER, OHIO, CONTRACT NO. 2, PLUMBING WORK, TO SERVE COUNTY SEWER DISTRICTS NO. 6, 10 AND 12.

Gorman Lavelle Plumbing Company	$35,990.00

Ayes: Pokorny, Taft, Corrigan

Nays: None

Resolution Adopted.

Louise M. Mulock
Clerk of the Board

Journal 156, Page
January 27, 1972

CONTRACT AWARDED

On Motion of Commissioner Pokorny, seconded by Commissioner Taft, the following contract was awarded this day as follows:

CONSTRUCTION OF COUNTY SEWER IMPROVEMENT NO. 6-15A, WASTE-WATER TREATMENT PLANT IN THE CITY OF ROCKY RIVER, OHIO, CONTRACT NO. 5, GRANULAR ACTIVATED CARBON, TO SERVE COUNTY SEWER DISTRICTS NO. 6, 10 AND 12.

Calgon Corporation $198,990.00

Ayes: Pokorny, Taft, Corrigan

Nays: None

Resolution Adopted.

Louise M Mulock
Clerk of the Board

Journal 139, Page
January 27, 1972

CONTRACT AWARDED

s of Commissioner Taft , seconded by Commissioner , the following contract was awarded this day as follows:

ITRUCTION OF COUNTY SEWER IMPROVEMENT NO. 615A, WASTE-WATER TREATMENT PLANT IN THE CITY OF ROCKY RIVER, OHIO, CONTRACT NO. 1, GENERAL CONSTRUCTION OF WASTE-WATER TREATMENT PLANT, TO SERVE COUNTY SEWER DISTRICTS NO. 6, 10 AND 12.

The Spohn Corporation $2,743,925.90

Ayes: Taft, Pokorny, Corrigan.

Nays: None.

Motion Adopted.

Louise M. Malock
Clerk of the Board

Journal 161, Page
October 2, 1972

[redacted]

(11)

BOARD OF
COUNTY COMMISSIONERS
HUGH A. CORRIGAN
FRANK R. POKORNY
SETH C. TAFT

County of Cuyahoga

Cleveland, Ohio

OFFICE OF
JOHN H. PUZENSKI
COUNTY SANITARY ENGINEER
1219 WEST 3rd STREET
CLEVELAND, OHIO 44113
241-2700

February 8, 1973

The Board of County Commissioners
Administration Building
1219 Ontario Street
Cleveland, Ohio 44113

Re: Rocky River Wastewater
Treatment Plant
Sewer District Improvement
No. 615-A

Gentlemen:

A letter dated January 31, 1973 from Dr. Irwin J. Kugelman, Project Officer at the Advanced Waste Treatment Research Laboratory, Cincinnati, Ohio, strongly recommends that the carbon adsorption system at the subject plant be redesigned to increase the operating pressure from 30 pounds per square inch to 50 pounds per square inch.

The above recommendation is based upon a study conducted by the Environmental Protection Agency in a pilot plant simulating the design and operation of the plant being constructed at Rocky River. The total additional cost of the recommended work is now estimated to be $250,000.00.

Authority is hereby requested for the Sanitary Engineer to prepare the necessary Change Orders to effectuate the recommendations of the Environmental Protection Agency.

Very truly yours,

John H. Puzenski

John H. Puzenski
County Sanitary Engineer

jhp//mj

prepare the necessary [illegible] the redesign of the carbon adsorption system at the Rocky River Wastewater Treatment Plant, in order to increase the operating pressure from 30 pounds per square inch to 50 pounds per square inch, as recommended by the Environmental Protection Agency, estimate cost of the recommended work being $250,000.00.

WHEREAS, John H. Puzenski, Sanitary Engineer, under date of February 8, 1973, presented to the Board of County Commissioners, for its approval, a request for authority to prepare the necessary Change Orders to provide for the redesign of the carbon adsorption system at the Rocky River Wastewater Treatment Plant, in order to increase the operating pressure from 30 pounds per square inch to 50 pounds per square inch, as recommended by the Environmental Protection Agency, estimated cost of the recommended work being $250,000.00; and

WHEREAS, Commissioner Hugh A. Corrigan, voted against the request made by Mr. Puzenski; and

WHEREAS, John L. Dowling, Assistant Prosecuting Attorney, directed the Board's attention to Section 305.23 of the Revised Code of Ohio, that where a proposition involves an expenditure of one thousand dollars or more, it shall not be agreed to by the Board unless twenty days have elapsed since the introduction of the proposition, unless unanimous consent of all the members of the Board present has been had; and

WHEREAS, in view of the above, Commissioner Taft and Commissioner Pokorny, by resolution adopted February 8, 1973, deferred action and approval of the request made by Mr. Puzenski for a period of twenty days; and

WHEREAS, Commissioner Corrigan is now of the opinion that the preparation of the above-mentioned Change Orders should be authorized; and

WHEREAS, an oral opinion of the Prosecuting Attorney was requested by Commissioner Corrigan relative to the provision of Section 305.23 of the Revised Code of Ohio as indicated above; and

WHEREAS, John L. Dowling Assistant Prosecuting Attorney expressed his opinion that any time within the twenty day period provided for in Section 305.23 R.C., a dissenting Commissioner may bring up the matter for consideration and upon unanimous consent of the Board of County Commissioners the proposition may be agreed to; and

WHEREAS, Commissioner Taft and Commissioner Pokorny adhered to their original position in favor of the preparation of said Change Orders.

NOW, THEREFORE, Be It Resolved by the Board of County Commissioners of Cuyahoga County, Ohio, the John H. Puzenski, Sanitary Engineer, be, and he is, hereby authorized to prepare the necessary Change Orders to provide for the redesign of the carbon adsorption system at the Rocky River Wastewater Treatment Plant, in order to increase the operating pressure from 30 pounds per square inch to 50 pounds per square inch, as recommended by the Environmental Protection Agency, estimated cost of the recommended work being $250,000.00

BE IT FURTHER RESOLVED that the Clerk of the Board be, and she is, hereby instructed to transmit a copy of this resolution to John H. Puzenski, Sanitary Engineer and John L. Dowling, Assistant Prosecuting Attorney.

On Motion of Commissioner Corrigan, seconded by Commissioner Taft, the foregoing resolution was duly adopted.

Journal 142, Page ___ Ayes: Taft, Corrigan, Pokorny. Nays: None. Resolution Adopted.
February 12, 1973.

Louise M. Bulock

COUNTY OF CUYAHOGA, OHIO

Application for Reimbursement Grant

Federal Water Pollution Control Act Amendments of 1972

Project No. 11010 DAB

October 12, 1973

(12)

1. Brief Description of Project

Chemical clarification and carbon filtration and adsorption as secondary treatment for Rocky River Wastewater Treatment Plant, County Sewer District Improvement No. 615-A.

2. Total Eligible Project Cost

Contract No. 1, General Construction	3,200,000.00
Contract No. 2, Plumbing Work	56,000.00
Contract No. 3, Ventilating Work	8,000.00
Contract No. 4, Electrical Work	148,000.00
Contract No. 5, Activated Carbon	199,000.00
Total Construction Cost	3,611,000.00
Engineering, legal, fiscal, contingencies, etc.	430,000.00
Total Eligible	4,041,000.00

3. Total Amount of Federal Assistance Received to Date

No federal assistance received to date.
Grant offer made of $991,330.00, of which only $790,030.00 can be used for construction.

4. Additional Financial Assistance Requested

55% x 4,041,000 - 790,030 = 1,432,320.00

5. Construction Dates

Initiation of Construction	October 31, 1972
Completion of Construction	Estimated October, 1974

6. Date of Approval by Ohio Department of Health

Letter dated June 30, 1969.

Approved John W. Puszeski
John W. Puszeski
County Sanitary Engineer

(13)

RESOLUTION

Instructing and Authorizing John H. Puzenski, County Sanitary Engineer, to make application for Reimbursement Grant as provided for in the Federal Water Pollution Act Amendments of 1972, for the Rocky River Wastewater Treatment Plant, in the amount of $1,432,520.00.

- -

BE IT RESOLVED by the Board of County Commissioners of Cuyahoga County, Ohio, that John H. Puzenski, County Sanitary Engineer, be, and he is, hereby instructed and authorized to make application for Reimbursement Grant as provided for in the Federal Water Pollution Act Amendments of 1972, in the amount of $1,432,520.00, for the Rocky River Wastewater Treatment Plant, County Sewer District Improvement No. 61[illegible], Project No. 11010 DAE.

On Motion of Commissioner Taft, seconded by Commissioner Corrigan, the foregoing resolution was duly adopted.

Ayes: Taft, Corrigan, Tolerny.

Nays: None.

Resolution Adopted.

LOUISE M. MULACK,
Clerk of the Board

Journal 164, Page _____.

October 15, 1973

(14)

U.S. ENVIRONMENTAL PROTECTION AGENCY

GRANT AMENDMENT

Page 1 of 2 Pages

GRANT NO. 11010 DAB

AMENDMENT NO. 4

OTE: The original Amendment with one copy must be executed and returned to the Grants Administration Division for Headquarters grant wards and to the Grants Administration Branches for State and local assistance awards within 3 weeks after receipt or within any extension of me as may be granted in writing by EPA. Except as may be otherwise provided, no costs as a result of the Amendment may be incurred prior the execution of the Grant Amendment by the parties thereto.

Receipt of a written refusal, or failure to receive the properly executed document within the prescribed time will result in the termination f consideration to the Grant Amendment by EPA

GENERAL INFORMATION

APPROPRIATION AND ACCOUNTING DATA

PROJECT NUMBER	ACCOUNT NUMBER	OBJECT CLASS CODE
08X0100	1101 H000/101	41.45

SCRIPTION OF AMENDMENT: PURSUANT TO EPA GRANT REGULATION 40 CFR 30 900-1 "NOTICE OF PROJECT CHANGES" AND N 30 901 "GRANTS AMENDMENTS" GRANT AGREEMENT DATED 2/22/68 AND GRANT AMENDMENT(S) DATED #1 dated 4/2/71, #2 dated 12/19/73, and #3 dated 4/10/74.

This Amendment reflects rebudgeting of funds at no additional cost to EPA.

BUDGET	FROM ELIGIBLE COSTS	FROM EPA OFFER	TO ELIGIBLE COSTS	TO EPA OFFER
A. Salaries & Wages	19,440	9,720	11,520	5,760
B. Fringe Benefits	-0-	-0-	-0-	-0-
C. Consultant Services	2,400	1,200	-0-	-0-
D. Equipment	7,000	3,500	2,580	1,290
E. Supplies	40,200	20,100	40,000	20,000
F. Travel	-0-	-0-	-0-	-0-
G. Publication Costs	-0-	-0-	-0-	-0-
H. Other	-0-	-0-	-0-	-0-
I. Post. Const. Stud.	56,500	28,250	87,530	43,765
J. Indirect Costs	-0-	-0-	-0-	-0-
TOTAL RD & D STUDIES	125,540	62,770	141,630	70,815
K. Construction-Engineering Plans	87,700	43,850	87,700	43,850 *
L. Construction-Supervision	107,490	53,745	-0-	-0-
M. Construction-Contracts	1,975,980	692,435	2,083,470	746,180 *

AWARD APPROVAL OFFICE	ISSUING OFFICE
ORGANIZATION: National Environmental Research Center	ORGANIZATION: Grants Administration Division
ADDRESS: Environmental Protection Agency, Cincinnati, Ohio 45268	ADDRESS: Environmental Protection Agency, Washington, D. C. 20460

GRANTEE ORGANIZATION

NAME	ADDRESS
Board of County Commissioners, Cuyahoga County	1219 Ontario Street, Cleveland, Ohio 44113

Except as provided herein all terms and conditions of the basic grant agreement, including prior amendments, remain unchanged and in full force and effect.

THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY

NATURE OF AWARD OFFICIAL	TYPED NAME AND TITLE	DATE
Frederick L. Meadows	Frederick L. Meadows, Chief, Grants Operations Branch, PM216	

BY AND ON BEHALF OF THE DESIGNATED GRANTEE ORGANIZATION

NATURE	TYPED NAME AND TITLE	DATE
John H. Puzenski	John H. Puzenski, Sanitary Engineer of Cuyahoga County, Ohio	8 April 1975

Form 5700-21 (Rev. 10-73) PREVIOUS EDITION MAY BE USED

11010 DAB
Project Number

	BUDGET (Continued)	FROM ELIGIBLE COSTS	FROM EPA OFFER	TO ELIGIBLE COSTS	TO EPA OFFER
N.	Construction-Materials	-0-	-0-	-0-	-0-
	TOTAL CONSTRUCTION	2,171,170	790,030	2,171,170	790,030
O.	Salaries & Wages	56,000	28,000	98,540	36,450
P.	Fringe Benefits	-0-	-0-	-0-	-0-
Q.	Supplies	169,900	84,950	181,000	66,975
R.	Utilities	39,200	19,600	61,250	22,650
S.	Repairs	12,000	6,000	12,000	4,430
	TOTAL OPERATIONS	277,100	138,550	352,790	130,505
	TOTAL PROJECT COSTS	2,573,810	991,350	2,665,590	991,350

(15)

81:0651

ENVIRONMENTAL PROTECTION AGENCY PROGRAM REQUIREMENTS MEMORANDUM 75-11

April 17, 1974

SUBJECT: Approval of Reimbursement Projects Not Previously Serviced by EPA

FROM: John T. Rhett
Deputy Assistant Administrator for Water Operations (AW-446)

TO: Regional Administrators
ATTN: Air and Water Program Directors

This is in response to a need for more specific guidelines required to properly review and process applications for reimbursement under Section 206 which were not previously serviced by EPA. The Office of General Counsel has provided us with an opinion regarding the legal issues involved and the mandatory requirements which applicants must meet. It is attached for your information and should be reviewed before undertaking action on the "woodwork" projects.

So that the review can be conducted using itemized specific requirements, we are supplementing the legal opinion with a checklist of applicable provisions. These provisions represent minimum compliance requirements to be met by the previously unserviced projects prior to approval for award.

Initially it is necessary that certain actions on each of the projects be fulfilled by the *State*. They are as follows:

1. Provide a copy of the State Permit, or provide certification that the project was designed and built in accordance with regulations and requirements of the State Agency.

2. Certify that the facility, upon completion, was operated consistent with State requirements. (If the facility is not currently being operated, an explanation of the mitigating circumstances must be provided.)

3. Provide a statement to the effect that the project was constructed for benefit of public at large. The statement must address the public benefits derived by project construction; the relation of the ultimate cost of constructing and maintaining the works to the public interest; and the public necessity of the treatment works.

Upon receipt of the above, the remainder of the review will be based on information submitted by the applicant. Since it is likely that all of the needed items of data will not be on hand with the applicant's original application, it will be necessary to request them in writing. In that letter, it is important to remind the applicant of the fact that eligibility for reimbursement is limited solely to treatment works as defined in Section 8 of the Federal Water Pollution Control Act prior to the October 18, 1972 Amendments thereto (i.e., sewage treatment plants including additions, modifications, alterations, etc., and appurtenant intercepting and outfall sewers, force mains and pump stations. Collection sewers, etc., are not eligible for reimbursement grant consideration.

In addition to the fact that the municipality's application must have been on file in the regional office by January 31, 1974, with the elements of data required in the published regulations, the following items are also needed to determine its eligibility.

1. Certification that standard procurement procedures were followed—with all contracts awarded to the lowest responsive bidder(s); and that proof of advertising, bid tabs, etc., will be available upon audit. Certification that all costs applied for have been paid and that evidence of such payment will be available upon audit.

2. Certification that the contractors paid the same general level of wages to their employees as was paid to those similarly situated at the time.

3. A resolution from the applicant's governing body authorizing a representative, by name and title, to execute and file all documents regarding the project.

4. Evidence that the project was approved by the appropriate planning agency. (Applicable to projects applying for the 10% planning bonus.)

5. A true copy of each executed contract document.

6. One copy each of the approved final construction estimate and bills submitted to the municipality for engineering services rendered. Requests for grant assistance for legal costs, bond costs, administrative costs, etc., should be discouraged. However, where applicant desires such grant support, bills pertaining to such costs must be furnished. If the construction estimate does not include signatures of the consulting engineer, the contractor, and the municipality, appropriate documentation substantiating the concurrence of the three parties should accompany the construction estimate.

7. Compliance Report Form (158 R0034), EPA Form No. 4700-4—to indicate nondiscrimination.

8. In addition, the grantee must be notified that, should his project be otherwise approved for reimbursement, in accepting the grant he must also accept the condition to acquire and maintain *flood insurance* where applicable and available.

9. If project is still under construction, it will be necessary to assure compliance with the additional requirements of the General Counsel memorandum.

A. Relocation Assistance
b. E.O. 11246 (equal employment opportunity)
c. Copeland Act; for contracts and subcontracts awarded subsequent to the date of the reimbursement grant award.

This memorandum has been concurred in by the EPA Office of Audit.

Attachment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

March 28, 1974

SUBJECT: Federal Requirements Applicable to the Award of Grant Assistance under Sec. 206 of the 1972 FWPCA Amendments (33 U.S.C. 1286).

FROM: Joseph M. Zore
Assistant General Counsel, Grants
(EG-334)

TO: John T. Rhett
Deputy Assistant Administrator for
Water Program Operations (AW-446)

Section 206(a) of the 1972 FWPCA Amendments (33 U.S.C. 1286), as amended on December 28, 1973 by Public Law 93-207 (87 Stat. 906) authorizes reimbursement grants for what may be analyzed as two categories of projects. In the first category are projects previously awarded grant assistance under the former FWPCA, and thereby received previously-required Federal approval, and projects which, while not awarded grant assistance under the former FWPCA, nevertheless were submitted for Federal approval, in order to assure compliance with applicable Federal requirements and to better assure future eligibility for Federal reimbursement; in both cases, projects were reviewed to determine compliance with then-applicable Federal requirements. In the second category are projects which have received no grant assistance under the former FWPCA and were not submitted for review with respect to Federal requirements prior to application for assistance under Sec. 206 of the 1972 FWPCA Amendments.

You have requested us to advise you as to the Federal statutory requirements applicable to the award of assistance to these projects, particularly with reference to the second category mentioned above and the requirement of Sec. 206 that the project must be determined to meet "the requirements of section 8 of this Act in effect at the time of the initiation of construction." We are herewith furnishing our analysis of what we believe to be the applicable Federal requirements as follows: (1) the requirements of Section 8 of the former FWPCA; (2) other requirements of the 1972 FWPCA Amendments; and (3) other Federal requirements.

(A) *Requirements of Section 8*

Section 206(a) authorizes reimbursement assistance for each project

> ". . . on which construction was initiated after June 30, 1966, but before July 1, 1972, which was approved by the appropriate State water pollution control agency and which the Administrator finds meets the requirements of section 8 of this Act in effect at the time of the initiation of construction . . . ."

For your convenient reference, there is reproduced as an attachment to this memorandum, those statutory provisions which were in effect after June 30, 1966, and before July 1, 1972, except for the several technical amendments which extended the authorization provision of section 8(d) beyond June 30, 1971, pending enactment of the 1972 FWPCA Amendments (P.L. 92-500).

In summary, we have found that there are no differences during this period in the substantive provisions of Section 8 which are relevant to Sec. 206 project review. These requirements are discussed in some detail below.

We have also noted, at p. 33 of the Senate Report which accompanied S. 2770 (S. Rep. 92-414, 92d Cong., 1st Sess.) the statement of intent that EPA must determine that each project for which assistance is requested under Sec. 206 ". . . was designed and constructed in accordance with the requirements of the Act, *and regulations thereunder*, in effect at the time that construction was initiated." (emphasis added). We believe that the prior regulations are applicable, to the extent that they reflect an interpretation of statutory requirements which are otherwise applicable for the purposes of Sec. 206 review. We do not believe that additional administrative requirements set forth in prior regulations must be made applicable-- for example, the industrial cost recovery requirement that related to the non Federal share of project costs, which was published at 35 F.R. 10757 on July 2, 1970, and codified at 18 CFR Sec. 601.34 (January 1, 1971 ed.). Inasmuch as the Section 8 regulations published on June 9, 1972, at 37 F.R. 11650, and codified at 40 CFR Secs. 35.800 *et seq.* (July 1, 1973 ed.) constituted principally a recodification of the Sec. 8 regulations occasioned by the transfer of the regulations from Title 18 to Title 40 of the Code of Federal Regulations, we would suggest that these regulations be utilized to the extent relevant for Sec. 206 project review.

1. *Section 8(b)(1)(first phrase)*: requires that the project must have been approved by the appropriate State water pollution control agency. This provision must be met for all reimbursement grants. We suggest that this requirement be met through certification by the state agency if a copy of the state agency approval cannot be furnished by the applicant. The requirement for prior Federal approval is overriden by Sec. 206, which authorizes reimbursement for projects for which prior Federal approval of assistance has not been obtained.

2. *Section 8(b)(1)(second phrase)*: requires the project to be included in any "comprehensive program" developed pursuant to Section 3(a) of the Act. This does

not refer to "comprehensive plans" under Section 3(c) (support for this can be found not only in the semantics of Section 8, but by reference to Sections 2 and 6(b)(2) of P.L. 660, July 9, 1956, which set forth the identical requirement before Section 3(c) was added by amendment). Similarly, the provision does *not* refer to State programs developed pursuant to Section 7 of the Act, which are addressed in Section 8(b)(1)(5), discussed below. Very little of the planning contemplated by the subject provision was completed. Compliance with this requirement can be effected by relatively simple intra-agency review to determine whether the project is consistent with Sec. 3(a) program requirements, if any, in effect at the time of project initiation.

3. *Section 8(b)(1)(2)*: sets forth the former basic 30% Federal participation limitation. This has no bearing on Sec. 206 project review of reimbursement grant applications, since Sec. 206 authorizes a higher level of Federal assistance (50/55%).

4. *Section 8(b)(1)(3)*: requires each grantee to agree to pay the non-Federal share of the project. We suggest that this requirement can be met either by a statement from the applicant, or other adequate evidence of payment of project costs, in cases where construction has been completed. If construction has not been completed, payment may not be made for the incomplete work pursuant to Sec. 206, and the grantee need only demonstrate that it has made adequate provision to pay its remaining costs.

5. *Section 8(b)(1)(4)*: requires that the grantee make ". . . provision satisfactory to the [Administrator, EPA] for assuring proper and efficient operation and maintenance of the treatment works . . ." after its completion. For both completed and uncompleted projects, the Agency must assure provision by the grantee of proper operation and maintenance. One means of accomplishing this would be by means of State assurance that it has found appropriate provision has been made for O&M by the grantee.

6. *Section 8(b)(1)(5)*: requires that the project be "in conformity with" the State water pollution control program submitted pursuant to Section 7 of the former FWPCA, and also requires that the project be ". . . certified by the appropriate State water pollution control agency as entitled to priority over other eligible projects . . . ." The former limitation may be met by a State assurance that the project was, at time of initiation of construction, not inconsistent with the State's Section 7 program. As regards the latter limitation, certification of priority for reimbursement projects would be meaningless and, in fact, violative of the intent of P.L. 93-207; therefore, EPA review need not consider this element.

7. *Section 8(b)(1)(6)*: sets forth the basis of increase in Federal participation to 40% of costs, and has no bearing on Sec. 206 project review of reimbursement grant applications, since Sec. 206 authorizes a higher level of Federal assistance (50/55%).

8. *Section 8(b)(1)(7)*: 50% eligibility (see 3 and 7 above). Note that the State's "agreement to pay" is not required for reimbursement under Section 206.

9. *Section 8(c)* (first sentence): requires the Administrator to determine for each project the public benefits to be derived therefrom; the propriety of Federal aid to the project; the cost-benefit factor; and the adequacy of provisions made by the grant applicant for proper and efficient post-construction operation and maintenance. Assurance from the State agency would provide a sufficient basis for compliance with this requirement (see also 5 above).

10. *Section 8(c)* (remainder): concerns allotment formulae, reallotment procedures, and reimbursement under Section 8. This provision has no bearing on project review of reimbursement grant applications under Sec. 206.

11. *Section 8(d)*: an authorization of appropriations, having no bearing on project review.

12. *Section 8(e)*: this provision contains a definition of construction which has been carried forward verbatim into 40 CFR 35.860. This definition of construction is applicable to all reimbursement projects under Section 206(a). We are aware that Section 212(1) of the Amendments contains a much broader definition of construction which, according to that section, is for application to all Title II. This provision was so interpreted in floor comments of former Congresswoman Bella Abzug (see *A Legislative History of the Water Pollution Control Act Amendments of 1972*, 93d Cong., 1st Sess., No. 93-1, p. 372 (hereinafter "Legislative History"). Nevertheless, we believe that the definition of construction contained in Section 8 is controlling. In principles of statutory construction, the specific provision takes preference over the general; Section 206(a) specifically directs one to Section 8 of the Act. Section 212(1) clearly was designed for different purposes, namely, for correlation with the "segmented" construction approach Congress promoted (see *Legislative History*, p. 294). Legislative history of the Act indicates that Section 206 was intended to be remedial in nature, to correct the inequality which was found between projects funded on different bases. All projects during the period in question—6/30/66-7/1/72 - were guided by the definition of construction in Section 8, and a gross broadening of the scope of reimbursement projects—which would result from adopting the new definition of construction—would appear to be markedly preferential rather than remedial. Neither the statute nor its legislative history indicates that Congress intended for reimbursement projects to suddenly obtain such status. In summary, we believe that the broader definition of construction in the 1972 FWPCA Amendments applies solely to new construction funded under Sec. 201 of the Act, and that the former definition set forth in 40 CFR 35.860 and Section 8(e) of the prior FWPCA is applicable to Sec. 206 assistance.

13. *Section 8(f)*: sets forth the requirements for an increased grant for urban planning. Section 206(a) provides for reimbursement up to 55% of project costs ". . . where the Administrator also determines that such treatment works was constructed in conformity with a comprehensive metropolitan treatment plan as described in Section 8(f) . . . as in effect immediately prior to the date of enactment of the [Amendments] . . . ." As we understand it, arrangements presently exist (including cooperative arrangements with HUD) which will facilitate review for this increased benefit. The same procedures should be observed as have been followed under Section 8.

14. *Section 8(g)*: Davis-Bacon Act requirements. Provides that the Administrator shall ". . . take such action as may be necessary to insure that all laborers and mechanics employed by contractors or subcontractors on projects for which grants are made under this section . . ." shall be paid at least prevailing wage rates. The Secretary of Labor establishes the rates, pursuant to 40 USC 276a *et seq.*, the so-called Davis-Bacon Act. We are informed that the Department of Labor has advised the Agency informally that it will not be feasible to determine prevailing wage rates on "old" work. It appears clear that contracts (or subcontracts) awarded after the date of reimbursement grant award must conform to the requirements of the law. For earlier awards, the agency will generally be unable to determine the prevailing rate; even if the rate was determined, enforcing compliance with the rate would be difficult. We do not believe that this very practical inability to determine retrospective compliance with Section 8(g) should be permitted to slow the reimbursement program; neither do we believe that Congress intended such a result. A distinction may be drawn between the fundamental *purpose* of the Davis-Bacon Act—which case law holds to be protection of employees from substandard wages—and the *method* of achieving that purpose, which was to direct the Secretary of Labor to determine minimum wages for a project based on prevailing rates in the locality. It will generally be impossible to implement the Act's purpose by the Congressionally-selected method; we do not, however, believe this gives the agency authority to dismiss any attempt at achieving the purpose of the Act. We believe that wherever possible, the agency should seek to obtain available evidence regarding whether the grantee's contractors paid the same general level of wages to their employees as was paid to those similarly situated at the time. A written affirmation to that effect, obtained from the grantee and accompanying the grant application, would generally be sufficient to meet the purpose of the Act, given the unusual circumstances.

(B) *Other Requirements of the 1972 FWPCA Amendments*

There are several requirements in the 1972 FWPCA Amendments, as amended, which are applicable. We note, initially, however, that the requirements of Sec. 201(g) for the application of best practicable waste treatment technology, for the study of alternative waste management techniques, for the application of technology for the reclaiming or recycling of water or otherwise eliminate the discharge of pollutants, and for infiltration analysis, while applicable to assistance under Sec. 201, are not applicable to Sec. 206 grant assistance. The requirements of Section 204 are similarly inapplicable.

1. *Section 501(a)*: issuance of regulations. The regulations promulgated on January 29, 1974 (39 F.R. 3677) provide, at 40 CFR Sec. 35.865(b) that "The applicant must furnish such other information as may be required for determination of entitlement or quantum under this Subpart. This affords the basis for obtaining documentation or information required to be furnished.

2. *Section 501(c)*: grantee records. Pursuant to this provision, the grantee is obligated to maintain and furnish records adequate to establish eligibility and prove quantum with respect to a Sec. 206 claim for reimbursement. As an alternative to requiring copies of relevant documents (the construction contract, for example), it would be sufficient to require that the grantee make such records available upon audit; see 4. below.

3. *Section 501(d)*: maintenance of records for audit and examination by EPA or GAO. This pertains to the period of claims processing, and three years after final payment; see Article 2 of the EPA General Grant Conditions, Appendix A to Subchapter B of Title 40 of the Code of Federal Regulations.

4. *Section 3 of PL 93-207*: audit before final payment. This statutory provision permits interim payments to be made on Sec. 206 claims, but also requires, in conjunction with the Sec. 206 payment mechanism, that an audit be accomplished for each project prior to the final Sec. 206 payment.

5. *Section 2 of PL 93-207*: statutory limitations date for presentation of Sec. 206 claims. The grant file must contain or refer to adequate evidence of receipt of the Sec. 206 claim on or before January 31, 1974.

(C) *Other Federal Requirements*

In addition to the requirements of Section 8 and of the 1972 FWPCA Amendments, there are other requirements applicable to all grant awards, by virtue of other legislation and collateral requirements, such as Executive Orders. We have noted that Section 206(a) itself states only that the requirements of Section 8 must be met. However, neither this statement nor the legislative history of the Act provides any basis for construing Section 206(a) as waiving those other requirements which are applicable to Federal grant awards generally (such as the award authority under Section 201(g) or Section 208).

1. *NEPA*. Section 102 of NEPA (42 U.S.C. 4332) requires an environmental impact study of all ". . . major Federal actions significantly affecting the quality of the human environment . . ." However, Sec. 511(c)(1) of the 1972 FWPCA Amendments provides that "Except for the provision of Federal financial assistance for the purpose of assisting the construction of publicly owned treatment works as authorized by section 201 of this Act, . . . no action of the Administrator taken pursuant to this Act shall be deemed a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969 . . ." Accordingly, NEPA review is not required for reimbursement grants, which are awarded under the separate grant award authorization of Sec. 206 of the Act. We note that NEPA review, if it were required, would be impractical, since there generally are no alternative approaches which are feasible in the case of reimbursement projects the construction of which is either completed or substantially completed. Also, NEPA was enacted *after* initiation of construction of many of the Sec. 206 projects.

2. *Relocation Assistance*. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of

1970 (42 U.S.C. 4621 *et seq.*) prohibits approval of any Federal assistance to any project until the Administrator determines that the policies of the Act will be met (see 40 CFR Part 4 for EPA regulations implementing the Act). The Act requires that certain benefits be made available to businesses and persons displaced by a project *after January 1, 1971*. Thus, even though a project may have begun in 1967, if persons or businesses were relocated after January 1, 1971, the benefits of the Act must be made available (if, on the other hand, dislocation occurred prior to January 1, 1971 on a project which is not yet complete, no benefits would be available). Implementation of the Act during the remaining periods of uncompleted projects should be accomplished by means of procedures presently used for relocations under construction grants. Implementation of the Act for relocations which occurred after January 1, 1971 without compliance with the Relocation Act, however, may prove troublesome. Reimbursement grantees must be notified of the requirements of the Act, and informed that compliance with the Act is a condition of the grant. One means of obtaining such compliance, where required, could be by requiring the grantee to take all reasonable steps to locate and inform potential relocation assistance recipients, including, where necessary, advertisement in newspapers of wide circulation in the area.

3. *The Civil Rights Act of 1964.* Title VI of the Civil Rights Act provides that no person shall, on the basis of race, color, or national origin ". . . be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." (Section 601, 42 USC 2000d). To effect this provision, all reimbursement project applications should be accompanied by the Compliance Report form (EPA Form No. 4700-4) developed by EPA's office of civil rights. This will generally be done quite routinely for ongoing projects; for completed projects, the form will develop information on discrimination in service area scope, which is the primary matter of concern. If discrimination is discovered, this office should be consulted as well as the Office of Civil Rights and Urban Affairs, prior to the taking of any action.

4. *E.O. 11246 (equal employment opportunity).* Section 301 of E.O. 11246 states in pertinent part as follows:

> "Each executive department and agency which administers a program involving Federal financial assistance shall require as a condition for the approval of any grant . . . which may involve a construction contract, that the applicant for Federal assistance undertake and agree to incorporate, or cause to be incorporated, into all construction contracts paid for in whole or in part with funds obtained from the Federal Government . . . or undertaken pursuant to any Federal program involving such grant . . . the provisions prescribed for Government contracts by Section 202 of this Order . . ."

The provisions of E.O. 11246 depend for their efficacy upon contractual implementation. The Order must be implemented for all contracts awarded after the date of award of a reimbursement grant (see EPA's regulations implementing the Order, 40 CFR Part 8). However, the agency need not require revision or modification of contracts which have been awarded prior to the date of grant award. The language of Section 301 of the Order clearly is susceptible of an interpretation which countenances prospective application only (as are the implementing regulations of the Department of Labor; see, e.g., 41 CFR 60-1.4(b)). We are informed by EPA's office of Civil Rights and Urban Affairs that this interpretation is concurred in by the Office of Federal Contract Compliance. In the event additional problems arise with regard to particular contracts under reimbursement grants, it should be noted that the Labor Department's regulations authorize the Director of the Office of Federal Contract Compliance to ". . . exempt any agency . . . from requiring the inclusion of any or all of the equal opportunity clause . . . when he deems that special circumstances in the national interest so require." 41 CFR 60-1.5(b).

5. *Historic preservation.* The National Historic Preservation Act of 1966 (16 USC 470 *et seq*) requires the agency, prior to grant award, to "take into account" the impact of the Federal assisted activity on historical sites and objects included in a National Register developed by the Department of the Interior. In addition, the agency must also afford the Advisory Council on Historic Preservation an opportunity to comment on the action. We believe that State review can provide information necessary for review of any situation in which uncompleted construction or site acquisition may affect an historical site. No useful purpose would be served by reviews of historical dislocations which have occurred prior to grant award.

6. *Clearinghouse review.* Section 204 of the Demonstration Cities and Metropolitan Development Act of 1966 (42 U.S.C. 3334) and the Intergovernmental Cooperation Act of 1968 (42 U.S.C. 4201 *et seq*), as implemented by OMB Circular A-95, require submission of Federal applications for grants for treatment works construction assistance to certain clearinghouses for review. The purpose of the review is to assure coordination of local, State and Federal planning, and as such the impact is totally prospective. Where construction of a project has already been initiated (as must be the case in order for a project to be eligible for a reimbursement grant) clearinghouse review would serve no useful purpose. It is our opinion, accordingly, that clearinghouse review is not required in the case of Sec. 206 grant awards, except in those cases where such review is required pursuant to State or local law.

7. *Flood insurance.* Section 102 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) (FDPA) prohibits the approval after March 1, 1974 of any federal financial assistance for acquisition or construction in any flood hazard area in which flood insurance is then available unless the building or personal property to which such assistance relates is covered by flood insurance for its entire useful life, in an amount at least equal to its cost or the maximum limit of coverage available, whichever is less. "Financial assistance for acquisition or construction for acquisition or construction purposes" is defined in Sec. 3(a)(4) of this Act to include "any form of financial assistance which is in whole or in part for the acquisition, construction, . . . of any . . . building . . . and for any [personal property] . . . contained or to be contained therein . . . ." "[F]inancial assistance" is also defined to include any form of grant, payment or rebate. Sec. 3(a)(3). Accordingly, reimbursement under sec. 206 of

the 1972 FWPCA is included in the definition of financial assistance under the Flood Disaster Protection Act. Since the federal financial assistance is in the form of reimbursement of expenditures for acquisition and construction purposes, the FDPA is applicable.

Therefore, the following grant condition must be included in any grant awarded under Sec. 206:

> The grantee agrees to acquire and maintain any flood insurance made available to it under the National Flood Insurance Act of 1968, as amended, in an amount at least equal to the total eligible project costs or to the maximum limit of coverage made available under the National Flood Insurance Act of 1968, as amended, whichever is less for the entire useful life of the project. Provided that this condition shall not be applicable if, on the date of grant award, flood insurance was not available pursuant to the Flood Insurance Act of 1968, as amended, for property in the project location or if the property is covered under State policy of self-insurance approved under such Act.

If Sec. 206 grant agreements have already been approved (after March 1, 1974) without this condition, no further grant payment may be made until such condition is incorporated by grant amendment or amendment of the Sec. 206 regulations, or both. Determination of compliance with this condition may be accomplished in conjunction with the Sec. 206 audit.

8. *Copeland Act.* A portion of the Copeland Act relates to "kickbacks" from public works employees, the inducement of which can have criminal consequences, 18 U.S.C. 874. The remaining provisions of the Act require contractors and subcontractors to submit weekly statements of wages paid to employees, 40 U.S.C. 276c. The statute, and its implementing regulations (29 CFR 3.1 *et seq.*) are designed to aid in enforcement of the minimum wage provisions of the Davis-Bacon (see discussion under A-14 above). Generally, 40 U.S.C. 276c will be implementable only for contracts and subcontracts awarded after the date of reimbursement grant award.

CONCLUSION

The foregoing requirements constitute all of the Federal requirements which are applicable, in our opinion, to the award and administration of the Sec. 206 reimbursement grant awards in the second category first mentioned in this memorandum. You should note that the requirements mentioned in Parts (B) and (C), above, are also applicable to the first category of grants, i.e., those where there has been a prior grant award or Federal approval. For example, if a Sec. 8 grant was awarded in 1968 for a project, the Relocation Act procedures would not then have been applicable, since that statute had not yet been enacted; however, the award of Sec. 206 assistance at this time constitutes a Federal action which has the effect of making the Relocation Act applicable to relocations effected after January 1, 1971, even though the Relocation Act had not previously applied to the project. The procedures discussed above would be applicable, but we would expect that such instances would be infrequent.

We would call to your attention, with respect to Sec. 206 award and payment procedures, the following provisions of Sec. 3 of Public Law 93-207 (emphasis added):

> "• • • Notwithstanding the provisions of subsection (d) of such section 206, (1) the Administrator is authorized to make interim *payments* to each such project for which an application has been approved on the basis of estimates of maximum pro rata entitlement of all applicants under section 206(a) . . . . *Upon completion* by the Administrator of his audit and approval of *all* projects for which an application has been filed under subsection (a) of such Section 206, the administrator shall, within the limits of appropriated funds, allocate to each such qualified project the amount remaining, if any, of its total entitlement.
>
> • • • In no event, however, shall any payments exceed the Federal share of the cost of construction incurred to the date of the voucher covering such payment plus the Federal share of the value of the materials which have been stockpiled in the vicinity of such construction in conformity to plans and specifications for the project."

In the accompanying November 29, 1973 House Report (No. 93-680), there is the following additional comment (emphasis added):

> • • • It has become evident that many eligible recipients would be forced to incur expenses and delays in new projects or risk failure to projects under construction if payments were made only after complete review and determination on all applications. The large number of applications for reimbursement *will require extensive processing* by the Environmental Protection Agency *before full payment* on each can be made. Section 3 of the legislation authorizes preliminary interim reimbursement of funds to projects *which can be easily approved on the basis of available documentation* pending final processing of all projects. This would include *nearly all projects for which there has been any Federal financial assistance in the past,* from the Environmental Protection Agency or other source. This will prevent undue disruption in community plans and also facilitate an orderly cash flow by the United States Government. It is expected that the Environmental Protection Agency will immediately implement the interim payment provisions of this section."

We are aware that EPA is under considerable pressure from Congress, state agencies, and eligible municipalities to expedite Sec. 206 payments. While the agency has no discretion concerning the applicability of Federal requirements discussed in this memorandum, it may be possible to ease the administrative burden of such requirements upon grantees and this agency. We will be pleased to assist in developing alternative procedures, if any are suggested, to facilitate compliance with applicable Federal requirements. In order to accomplish the purposes of Sec. 101(i) of the 1972 FWPCA Amendments, which emphasize a national policy of "drastic minimization of paperwork," we recommend that emphasis should be placed upon record retention by grantees and examination of grantee records upon audit, rather than requiring the submission of copies of docu-

ments (such as entire construction contracts), unless such submissions are absolutely required to determine eligibility or *quantum* questions. It may be necessary to defer payment upon projects in the second category until completion of an audit, unless entitlement and *quantum* are adequately demonstrated by the grantee.

(16)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 25 1976

OFFICE OF
RESEARCH AND DEVELOPMENT

Mr. Stephen J. Sebesta
Sanitary Engineer
County of Cuyahoga
1276 West 3rd Street
Cleveland, Ohio 44113

Dear Steve:

Thank you for your letter of May 3, 1976 following up on our discussions in St. Louis concerning the problem associated with the Rocky River Wastewater Treatment Plant Demonstration Project.

Examination of the extent of Federal participation in the project indicates that the original grant awarded in 1968 amounted to $746,360 [redacted] project. [redacted]

A [redacted] that vouchers have been submitted [redacted] Thus, [redacted] Of this [redacted] cost and [redacted] of the project.

I find that the Federal investment in the project constitutes one of the largest research and development demonstration projects ever awarded in our program and, in view of our current budget limitations and our substantial commitment in the past, we cannot make any further funding commitments from research and development funds.

In addition, our Municipal Environmental Research Laboratory in Cincinnati has investigated the possibility of construction grant participation to further assist this account. As you thought, it is not possible to obtain additional funding through the Construction Grants Program to contribute to the cost of facilities already in place. The County can, however, legitimately apply for a construction grant for improvement of the sludge facilities. The Regional Office informs

us that no application for such improvement is in hand. If I recall correctly, you indicated such an application was being prepared.

We are extremely interested in the success of this demonstration project and strongly desire that the information originally planned for be forthcoming from the studies now underway. We assure you that we wish to work closely with the County by providing technical assistance which will assist you in solving the operational and other technical problems associated with the project. Toward this end we will be pleased to meet with you at your convenience to determine a course of action. I recommend that you contact the Project Officer, Mr. James Westrick, and make arrangements for a meeting at an early date. His phone number is: Area Code 513 684-7652. Mr. Convery, Director, Wastewater Research Division, Municipal Environmental Research Laboratory, has assured me that assistance will be provided toward solving your operational problems.

Sincerely,

Robert W. Schaffer
Associate Deputy Assistant
Administrator for Air, Land & Water Use

17

RESOLUTION

Directing the County Administrator and the County Sanitary Engineer to file an application with the Federal Environmental Protection Agency seeking a reimbursement grant for construction costs of the Rocky River Wastewater Treatment Plant as soon as House Bill No. 9560 or any similar legislation is enacted by the Congress.

- -

BE IT RESOLVED by the Board of County Commissioners of Cuyahoga County, Ohio, that the County Administrator and the County Sanitary Engineer be, and they are, hereby directed to file an application with the Federal Environmental Protection Agency seeking a reimbursement grant for construction costs of the Rocky River Wastewater Treatment Plant as soon as House Bill No. 9560 or any similar legislation is enacted by the Congress, it being the intent of this Board that any such grant received shall be applied as then agreed upon between the Board of County Commissioners and the Cities of Bay Village, Rocky River, Fairview Park and Westlake, and in the absence of agreement shall be deposited in a sinking fund to reduce the costs to those cities of repaying the bonds which were issued in June, 1976, to cover the cost of construction of such plant.

BE IT FURTHER RESOLVED that the Clerk of the Board be, and she is, hereby instructed to transmit a copy of this resolution to the following persons:

William S. Gaskill, County Administrator
Stephen J. Sebesta, County Sanitary Engineer

Mayor Henry P. Reese
City of Bay Village
350 Dover Center Road
Bay Village, Ohio 44140

Mayor Earl Martin
City of Rocky River
21012 Hillard Road
Rocky River, Ohio 44116

Mayor Joseph M. Gall
City of Fairview Park
20777 Lorain Road
Fairview Park, Ohio 44126

Mayor Alexander Roman
City of Westlake
27216 Hilliard Boulevard
Westlake, Ohio 44145

On Motion of Commissioner Taft, seconded by Commissioner Sweeney, the foregoing resolution was duly adopted.

Ayes: Taft, Sweeney, Corrigan.

Nays: None.

Resolution Adopted.

Louise M. Mulock,
Clerk of the Board.

Journal 171, Page_____
June 3, 1976.

CONTRACT NO. 1

(18) Sheet 3 of 4

Project No. EPA-11010 DAB Contract No. 14407 Change Order No. 1

Impr. No. 615-A

REQUEST AND JUSTIFICATION FOR CHANGE

1. Necessity for change: NEW ITEMS NO. 1A THROUGH 1F, INCLUSIVE:

After approval of design, construction plans and specifications of this improvement, the U.S. Environmental Protection Agency, who is sponsor of research and development grant for this project, conducted a series of studies at its pilot plant at Pomona, California, simulating the design and operation of the Rocky River Plant. The test results indicated clogging of the Carbon Columns, development of anaerobic conditions in them, which produced sulfide in its effluent and other operational difficulties as well as excessive pollution caused by the Carbon Regeneration Furnace. To rectify these conditions, which were not known at the time of design, the U.S. Environmental Protection Agency required the installation of additional equipment and made other modifications, which are included in this Change Order.

OTHER ITEMS OF EXTRA WORK:

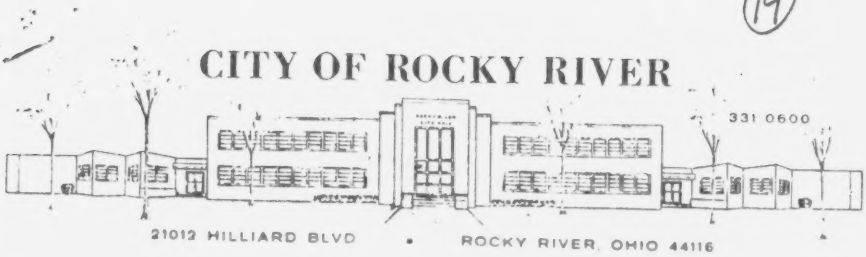
Provide for items of extra work not originally contemplated but made necessary in the performance of the work and were unforeseen.

During progress of work, several unforeseen and unacceptable conditions were encountered that have to be corrected in order to insure good construction of the project.

ADDITIONAL QUANTITIES OF CONTRACT ITEMS:

Field measurements indicate that the amounts of several unit price items, as provided for in the original contract, are low and have to be increased and are necessary in the performance of the work.

(19)



OFFICE OF THE MAYOR
EARL MARTIN, MAYOR

September 16, 1976

Honorable

Dear Sir:

This letter is being written in an effort to point out what we believe to be an injustice that was created in Public Law 92-500 and/or by the adoption of the EPA reimbursement grants eligibility requirements. The City of Rocky River, Fairview Park, Bay Village, and Westlake, Ohio, have entered into an agreement with commissioners of Cuyahoga County for the building and operation of primary and secondary waste water treatment plants. Our primary treatment plant was completed in the year 1960, and under requirements by Ohio Water Polution Control Board, we have now completed construction of an activated carbon pile secondary treatment system. This program originally began in 1966, as far as planning and design.

On August 17, 1970, the County of Cuyahoga awarded contracts to the Calgon Corporation for the building of said secondary treatment plant. This contract was subsequently voided by court action.

On January 27, 1972, Cuyahoga County again awarded a contract for the construction of a secondary water treatment plant. This contract was to the Spohn Corporation and this contract was also voided by court action.

On September 13, 1972, the U.S.-E.P.A. placed the County of Cuyahoga and the four cities which make up this sewer district on 180 days notice, to proceed with construction of said plant.

On October 2, 1972, the Spohn Corporation being the lowest and best bidder, was again awarded the construction contract.

And, on October 18, 1972, Public Law 92-500 was amended.

Inasmuch as the County, acting as agents for the cities involved, has only received a research and construction grant in the amount of $900,000 which is only 20% of the total project cost, and following the suggestion of the Federal E.P.A., the four cities have applied for reimbursement grants under Public Law 92-500. In Section 206 of Public Law 92-500, it reads as follows:

> Section 206.(a) Any public owned treatment works in a State on which construction was initiated after June 30, 1966, but before July 1, 1972, which was approved by the appropriate State water pollution control agency and which the Administrator finds, meets the requirements of Section 8 of this Act in effect, at the time of the initiation of construction shall be reimbursed a total amount of Federal financial assistance, if any received under such Section 8 for such project and 50 per centum of the cost of such project, or 55 per centum of the project cost where the Administration also determines that such treatment works was constructed in conformaty with a comprehensive metropolitan treatment plan as described in Section 8 (f) of the Federal Water Pollution Control Act as in effect immediately prior to the date of enactment of the Federal Water Pollution Control Act Amendments of 1972. Nothing in this subsection shall result in any such works receiving Federal Grants from all sources in excess of 80 per centum of the cost of such project.

Section 212, as used in this title describes the definition of the term construction as follows:

> Section 212. As used in this title -
> (1) The term 'construction' means any one or more of the following: Preliminary planning to determine the feasibility of treatment works, engineering, architectural, legal, fiscal, or economic investigation or studies, surveys, designs, plans, working drawings, specifications, procedures or other necessary actions, erection, building, acquisition, alteration, remodeling, improvement, or extention of treatment works, or the inspection or supervision of any of the foregoing items.

It would seem that under Public Law 92-500, we are clearly eligable for reimbursement grants, however, the EPA requirements define the word 'construction' in the phrase initiation of construction and in their definition 35.890:

> The phrase "initiation of construction" as used in this subpart, means the issuance to a construction contractor of a notice to proceed, or, if no such notice is required, the execution of a construction contract.

Our problem now seems to be that we are not eligable for either construction grants or reimbursement grants. All waste treatment plants whose initiation of construction took place between July 1, 1972 and October 18, 1972, seem to be ineligable for either reimbursement or construction grants. I can not believe that the Senate or the House of Representatives had intended this to be the situation, while some of our neighbors are receiving grants from 55 to 75%, we seem to be locked in with less than 20% research grant.

H. R. 9560 passed the House by a vote of 339 - 5 which included the reimbursement provisions of Section 8 intact. The Senate Bill S-2710 has no reimbursement provisions.

It is of the greatest importance to the Cities of Rocky River, Fairview Park, Bay Village and Westlake, Ohio, along with some other cities in the United States, that Section 8, as passed by the House, be included in the final Bill S-2710.

We have moved forward in good faith under order from the Federal Government and now our Citizens have been penalized through a complete injustice in the reimbursement provisions of Public Law 92-500.

After four years of trying to solve this problem, we are still seeking relief from what I believe was a legislative error in 1972.

Very truly yours,

Earl Martin, Mayor
City of Rocky River

EM:ee

cc: U.S. Senator John Glenn
U.S. Senator Robert Taft
U.S. Representative Ron M. Mottl
County Commissioner Seth Taft
County Commissioner Hugh Corrigan
County Commissioner Robert Sweeney
County Engineer Stephen Sebesta
Hon. Robert E. Jones
Hon. Ray Roberts
Hon. James C. Wright
Hon. Robert A. Roe
Hon. Harold T. Johnson
Hon. Glenn M. Anderson
Hon. John B. Breaux
Hon. William H. Harsha
Hon. Don H. Clausen
Hon. James C. Cleveland
Hon. Edmund S. Muskie
Hon. Gennings Randolph
Hon. Quentine Burdick
Hon. John C. Culver
Hon. Gary Hart
Hon. Howard H. Baker, Jr.
Hon. James L. Buckley
Hon. Robert T. Stafford

COUNTY OF CUYAHOGA

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

September 25, 1981

Ms. Charlie Smith
Ohio Coordinator
UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
230 South Dearborn
Chicago, Ill.

RE: Rocky River Wastewater Treatment
Plant Improvements 1970-1975

Dear Ms. Smith:

It was good to speak with you at the Ohio Municipal League meeting on August 20th of this year concerning matters of mutual interest particularly in the Cuyahoga County area.

You will recall that the County is presently involved in upgrading the Rocky River Wastewater Treatment Plant and has a Step III application being considered currently by the EPA. Further, the cities which comprise the drainage area to the plant have united in a law suit against the County, the Ohio and USEPA and the design engineer for recovery of five and a half million dollars resulting from the construction of secondary treatment facilities in the early 70's. This results in a real substantial financial exposure and needless to say, the County is exploring all avenues of relief and particularly the responsibilities of the parties to the arrangements which resulted in that construction.

In this connection I would like to outline in a brief synopsis some of the events which took place, particularly as to how they related to the grant situation.

A. October 1965 - The Ohio Water Pollution Control Board ordered the County to submit plans for improving the primary treatment plant.

B. August 18, 1966 - The Board of County Commissioners of Cuyahoga County approved an agreement with Willard E. Schade & Associates for engineering services for the enlargement and improvement of the Rocky River Wastewater Treatment Plant.

25 Public Square Cleveland Ohio 44113 216/623-7601

NTY OF
AHOGA

C. January 19, 1967 - The Department of Health of the State of Ohio approved the general plans for the plant improvements to be submitted to the Federal Water Pollution Control Administration.

D. December 27, 1967 - The Cuyahoga County Sanitary Engineer applied for a research development grant to the Federal Water Pollution Control Administration for the purpose of installing secondary wastewater treatment facilities utilizing a process of chemical clarification and granular activated carbon filtration and adsorption.

E. July 22, 1968 - Letter from the Federal Water Pollution Control Administration informed the County of the award of a $741,350.00 research and development grant based on estimated eligible project costs of $2,573,010 which was accepted by the Board of County Commissioners.

F. June 3, 1969 - The Department of Health of the State of Ohio approved the revised detailed plans for the activated carbon process.

G. September 22, 1969 - The County was in contact with A.M. Masse, Acting Chief of Municipal Treatment Research Program of the Advance Waste Treatment Research Laboratory in respect to the Federal Government not guaranteeing carbon column lining unless rubber was used. Further correspondence and recommendation was held with Mr. Masse in relation to the design of the air difusers and other items in the carbon columns.

H. January 29, 1970 - The Board of County Commissioners of Cuyahoga County resolved to proceed with the construction of the plant.

I. May 21, 1970 - The Clerk of the Board was directed to advertise for bids for the construction of the plant improvements.

J. June 11, 1970 - Bids received.

K. July 9, 1970 - EPA founded by Congress as an independent agency.

L. July 13, 1970 - A letter from A.M. Masse, USEPA authorizing the County to proceed with the awards of the contracts involved with the construction of the Plant Improvements.

M. August 11, 1970 - A single contract was awarded for the entire project which award was later voided by court action.

N. August 17, 1970 - The Board reopened the bids and awarded individual contracts to four different contractors which was voided by court action.

O. March 3, 1971 - The USEPA advised the County that an application for supplemental funding in the amount of $250,000.00 or 38.52 percent of the revised total eligible cost of $2,573,010.00 was approved of a total [illegible] cost of $[illegible] 777,447.00

NTY OF
AHOGA

P. August 6, 1971 - Total cost, both eligible and non-eligible of the project was revised upwardly to $4,879,630.00 resulting from the specs change.

Q. September 16, 1971 - The Board advertised for construction bids on the revised plans and specs.

R. November 4, 1971 - Bids received.

S. December 23, 1971 - The Board of County Commissioners recommended award of Contract I, II, III, IV and V.

T. January 20, 1972 - The USEPA approved the contracts as recommended by the Board.

U. January 22, 1972 - The Contract No 1 was awarded to Spohn Corporation which was later voided by court action on March 3, 1972.

V. January 27, 1972 - Contracts II, III, IV and V were awarded. Specs for Contract No I was readvertised and bids received Sept 14th.

W. Setember 18, 1972 - The USEPA placed the County of Cuyahoga and the four tributary cities on 180 days notice to proceed with the construction of the plant.

X. October 2, 1972 - Contract I was awarded to Spohn Corporation.

Y. October 18, 1972 - Public Law 92-500 was enacted.

Z. October 15, 1973 - The Board of County Commissioners of Cuyahoga County instructed the Sanitary Engineer to make application for reimbursement grant, as provided for in the Federal Water Pollution Act amendment of 1972 for the Rocky River Wastewater Treatment Plant in the amount of $1,432,520.00, which was 55% of eligible costs . No formal action was ever received on this grant application.

There are three main issues involved in the problems between the four tributary cities and the County relating to the construction of the carbon column treatment facilities.

The first issue relates to the fact that the carbon columns are inoperative and have not functioned in this particular circumstance. For this reason the cities are stating, that they should not be required to pay for something which was inoperative. As you will note from the brief synopsis, the Federal Government was actively involved in the R & D grant and in the actual design and selection of the carbon column process as secondary treatment. We feel that some responsibility attaches to the Federal Government because of its active involvement at the time the system was selected and designed prior to actual construction.

Secondly, you will note that the original R & D grant was obtained and the work commenced under the Water Pollution Control Act and apparently met the criteria of the R & D project fundable to the extent that money for the purpose

was available. The question which immediately arises is whether or not the existance of the R & D grant prior to the enactment of P.L. 92-500 will automatically preclude reimbursement under Section 201 of the Act.

The third issue is whether the construction date, as the word "construction" or "initiation of construction" as defined under EPA 40 CFR, Part 35 (Federal Register, Vol. 38, No. 122 Tuesday June 26, 1973) was within the time frame limitations required by the said regulations. The regulations state:

> "The proposed regulations would require that eligibility for reimbursement be limited to those State approved public sewage treatment works projects on which construction was initiated after June 30 1966 but before July 1, 1972 provided further that such projects are found to meet the requirements of Sect. 8 of P.L. 84-660 as amended. Application for reimbursement of eligible cost shall be made in writing and must be received by the appropriate Regional Administrator prior to October 18, 1973. the proposed regulations give priority for initial allocations from funds available under Public Law 92-399 to those projects which meet the time limitations noted above, and which (1) were certified or endorsed by appropriate State agencies, (2) were approved for reimbursement under Public Law 84-660, and (3) did not receive the full amount for which they were eligible under Public Law 84-660. Funds remaining after the first allocation will be made available to those State approved projects which received prior to Oct. 18, 1972, a qualifying State matching grant, retroactive from the federally approved effective date of State matching grant program. Should funds remain after the second allocation, a third allocation is provided for all other projects under construction during the 1966-72 period and receiving less than 50/55 percent Federal Grants. In terms of defining the word construction, Section 35.890 of EPA 40 CFR Part 35 defines the word "construction" as, "The phrase 'Initiation of construction', as used in this subpart, means the issuance to a construction contractor of a notice to proceed, or, if no such notice is required, the execution of a construction contract".

It appears that the County had awarded Contracts, that the design was completed, and that all of the administrative steps had been taken to proceed with the actual construction. Therefore, the requirements for initiation of construction had taken place.

Also, the reimbursement grant regulations were amended to extend the time for making such an application to the deadline date of October 18, 1973. The application was dated October 12, 1973 and was no doubt placed before the USEPA prior to the deadline date. As can be noted readily, the County did follow through with the construction contract as awarded and continued the project through to completion.

During the period following October 18, 1972, the amount of eligible funding increased immediately to 55% of the total project cost, with further increases to 75% and to 85% for innovative alternatives which accurately describes the Rocky River project.

NTY OF
AHOGA

[redacted] project [redacted].

[redacted].

Assuming a grant eligibility of a minimun of 55% of the project cost, the funding which should be available is $2,834,150. The balance remaining between the funding the County should have received and the amount actually received is $1,842,800.00. If the funding is found to be 75% which should be made available to the County then the amount in question is $2,873,465.00 in addition to the grant received.

In this regard we are requesting your assistance and support in rectifying this undeserved financial burden that has been placed on the County and the contributing cities. We would be glad to visit your office to review the matter in greater detail at your earliest convenience.

Yours very truly,

John J. Garner
Sanitary Engineer

HEW:JJG:cds

cc: Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan
Mayor Earl Martin
Mayor James C. Cowles
Mayor Richard Anter II
Mayor Theodore Busch

(21)

COUNTY OF CUYAHOGA

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

November 13, 1981

Valdas V. Adamkus, Administrator
U.S. EPA - Region V
230 South Dearborn
Chicago, Illinois 60604

Dear Mr. Adamkus:

First, I would like to congratulate you on your nomination as Region V Administrator. Your considerable experience in this Region should provide you with a successful tenure in office. I would also like to express my appreciation to your staff for the excellent cooperation we received in obtaining a Step III Construction Grant for the improvements to the Rocky River Wastewater Treatment Plant. Over the years I have found your staff to be very cooperative and understanding in my previous professional employments with Summit County, the City of Cleveland, Three Rivers Watershed District and Lake County. I would be very disappointed if these successful relationships would not continue here in Cuyahoga County.

Again, best wished and thank you.

Very truly yours,

John J. Garner

JOHN J. GARNER, P.E.
Sanitary Engineer

cc: Charles Suttin
Charles Poremba
Bruce Baker
Charlie Smith

(22)

COUNTY OF CUYAHOGA

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

November 20, 1981

Ms. Charlie Smith
U.S. Environmental Protection Agency
230 South Dearborn
Chicago, Illinois 60604

Dear Ms. Smith:

We appreciated the time that Messrs. Cayer, Poremba, Baker and Cull and you took from your very busy schedules to discuss with us the total Rocky River Wastewater Treatment Plant situation - past and present.

Although we do not pretend to be experts in the area of federal legislation and USEPA regulation development, construction and interpretation we respectfully offer for your favorable further consideration the following:

1. It would appear that the general intent of Congress in enacting P.L. 92-500 on October 18, 1972 and P.L. 95-217 on December 27, 1977 was to develop and implement a general 75% water pollution control construction program. In doing so Congress recognized that significant water pollution control construction had occurred prior to the enactment of P.L. 92-500.

   In order to compensate local governmental units for proceeding with such construction P.L. 92-500 Sec. 206 provided for reimbursement of 50 or 55% of project costs for..."publicly owned treatment works in a State on which construction was initiated after June 30, 1966, but before July 1, 1972...".

   The amount of reimbursement would be the difference between the amount received "<u>if any</u>" under Sec. 8 of the Act in effect and 50% or 55%. A maximum federal grant "<u>from all sources</u>" could not exceed 80%.

2. There does not appear to be any language in this section that would preclude a R/D grant project from receiving additional grant monies - to the contrary it would appear that Sec. 206 would encourage such reimbursement.

Cont'd.

COUNTY OF
CUYAHOGA

If it is felt that the Rocky River activated carbon process did not meet the requirements of Sec. 8 we would appreciate being advised of the requirements that were not met.

3. Sec. 212 of P.L. 92-500 does provide a broad definition of "construction" from preliminary planning through actual construction. The term "initiation of construction" is not specifically defined in Title II of P.L. 92-500.

   We respectfully suggest that the use of the word "initiation" in Sec. 206 therefore means starting of any of the activities ennumerated in the definition of "construction".

   The Rocky River activated carbon process therefore had initiated construction prior to July 1, 1972. In fact 4 of the 5 construction contracts had actually been successfully awarded.

4. Congress evidently recognized that the July 1, 1972 cut-off date in P.L. 92-500 still did not entirely provide adequate reimbursement. Perhaps this recognition involved the July 1, 1972 date vs. the actual enactment date of October 18, 1972. Perhaps Congress had thought that P.L. 92-500 was going to be enacted six months or so prior to the July 1, 1972 date so that there would be a reasonable time period for projects to qualify for reimbursement vs. becoming involved in the Sec. 201 construction grants program.

   In any case Congress enacted P.L. 95-217 on December 27, 1977. Sec. 29 of P.L. 95-217 amended Sec. 206 of the Federal Water Pollution Control Act by extending the July 1, 1972 date to July 1, 1973. This would appear to be the only substantive change affecting the Rocky River Plant situation.

   If there is some written Congressional Committee Report, for example, that would indicate our non-legal interpretation of P.L. 95-217 is in error we would appreciate receiving a copy of it.

5. Recognition should be made of the fact that local governmental units and their consultants placed great reliance on the technical expertise, recommendation and advice of the Federal Water Pollution Control Agency staff in the art of designing an activated carbon treatment process. Detailed knowledge on this process in the late 1960's and early 1970's was limited to federal research, pilot plant studies and whatever knowledge could be obtained from limited plant experiences such as Lake Tahoe.

   It is extremely doubtful if the Rocky River activated carbon process would have been implemented if the federal government had not strongly encouraged, endorsed and assured the County that the process, as designed, would be successful.

cont'd.

COUNTY OF
CUYAHOGA

Unfortunately the process was not successful.

Presumably the art of design of the activated carbon process was significantly advanced by this expensive failure.

However, the fact that the process did fail, despite the federal government's assurances to the contrary, and the fact that the taxpayers involved with the Rocky River Plant will have to pay for another, significantly more costly, secondary treatment plant should encourage the federal government to provide additional compensation, beyond the less than one million dollars R/D grant that had previously been extended on the approximate five million dollar project, including interest during construction.

6. Mayor Earl Martin of Rocky River strongly stated at the meeting the pragmatic question "What elected official (Mayor or County Commissioner) would have proceeded with a 20-50% R/D grant project when he knew a 75% construction grant program was imminent, unless he had been assured that the project would eventually be reimbursed the additional monies?"

   At the time an enforcement action meeting was held in the USEPA's Lake Erie Office, prior to the enactment of P.L. 92-500, Mayor Martin obviously feels that such reimbursement assurance was given to the local officials by the federal officials present.

   Although I was not privileged to be Cuyahoga County's Sanitary Engineer at that time, nor was I involved with that meeting, I do know some of the elected officials who were involved and I can only agree with Mayor Martin's thesis.

7. We ~~are sincerely very appreciative of the excellent~~ cooperation ~~that USEPA has showed in offering Cuyahoga County~~ and ~~the four municipalities involved (Bay Village,~~ Fairview Park, ~~Rocky River and Westlake) the 75% grant in the approximate amount of 27.4 million dollars for the present project.~~

   We also hope that USEPA, considering all of the aspects of the Rocky River Plant situation - including the very significant net energy savings of approximately 21% when compared to the non-innovative alternative, and of approximately 34% when compared to conventionally operated trickling filters, can see fit to also offer to the County the additional 10% grant (for a total of 85%) for the present project as provided for eligible I/A projects.

Again, we do appreciate the past interest and cooperation that has been extended to the Rocky River Treatment Plant and the courtesies that were extended to us at our discussion of November 4, 1981.

Cont'd.

COUNTY OF
CUYAHOGA

We hope that your discussion of the total Rocky River Plant situation with the Regional Administrator will result in the additional reimbursement and I/A grant consideration that we feel the unique history of the plant merits.

Thanks again.

Very truly yours,

John J. Garner

JOHN J. GARNER, P.E.
Sanitary Engineer

JJG:jmf

cc: Board of County Commissioners
William Plato

bcc: Tom Gill
Paul Alsenas
Hal Whitaker

DONALD M. MOTTL
COMMITTEE
VETERANS' AFFAIRS
SUBCOMMITTEE
CHAIRMAN
HOSPITALS AND HEALTH CARE
HOUSING AND MEMORIAL AFFAIRS
COMMITTEE
ENERGY AND COMMERCE
SUBCOMMITTEES
OVERSIGHT AND INVESTIGATIONS
TELECOMMUNICATIONS, CONSUMER
PROTECTION, AND FINANCE

Congress of the United States
House of Representatives
Washington, D.C. 20515

5152 FINAL ROAD
PARMA, OHIO 44129
TELEPHONE (216) 526-7400

23

November 23, 1981

Mr. Val Adamkus
U.S. EPA - Region V
230 South Dearborn
Chicago, Illinois 60604

Dear Mr. Adamkus:

As you are undoubtedly aware the Cuyahoga County Board of County Commissioners and the Mayors of Bay Village, Fairview Park, Rocky River and Westlake are again requesting reimbursement for the mid-1970 improvements constructed at the Rocky River Wastewater Treatment Plant.

In reviewing the history of this project and the history of pertinent Congressional Legislation, namely P.L. 92-500 enacted on October 18, 1972 and P.L. 95-217 enacted on December 27, 1977, I feel that their request for reconsideration of their previous reimbursement request is well-founded and should merit your favorable consideration.

If for some reason, this project did not qualify for reimbursement under P.L. 92-500's July 1, 1972 "initiation of construction" date, it should certainly qualify under P.L. 95-217's July 1, 1973 date. Four of the five construction contracts had been awarded on January 27, 1972, and the fifth construction contract had been awarded on October 2, 1972.

The intent of P.L. 92-500 and P.L. 95-217 in part, was to provide reimbursement for federally assisted projects such as this research and development project. Certainly it was not the Congressional intent to discriminate against such a project.

This project should have particularly merited such reimbursement because its activated carbon process was unsuccessful despite the federal government's assurances that the proposed process would work. Now these communities are forced to pay even more for a conventional biological secondary treatment plant at today's considerably higher costs, even with the assistance of a 75% construction grant.

It should be noted that the County and the four communities were unsuccessful in the mid-1970's in their attempts to recover additional operational costs, even though Congressional legislation was specifically intended to assist this project.

I earnestly urge your favorable consideration of this reimbursement request because of the project's unique history and its consistency with the general Congressional intent in enacting P.L. 92-500 and P.L. 95-217.

We would appreciate the opportunity to discuss this matter with you personally at your earliest convenience.

Sincerely,

DONALD M. MOTTL
Member of Congress

F:Mlcg

(24)

COUNTY OF CUYAHOGA

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

December 1, 1981

Mr. Richard Sullivan
Committee on Public Works
and Transportation
Room 2165, Rayburn Bldg.,
Washington, D.C. 20515

Re: Reimbursement for Rocky River

Dear Mr. Sullivan:

In accordance with your telephone conversation of November 30, 1981, with Congressman Ronald M. Mottl and myself, enclosed are [redacted] documents regarding Cuyahoga County's and the four communities' (Bay Village, Fairview Park, Rocky River and Westlake) attempt to receive reimbursement for the construction of improvements to the Rocky River Wastewater Treatment Plant that was initiated in 1972.

The enclosed documents include:

1. Section 206 of Public Law 92-500 - that provides for the reimbursement requested.

2. Section 212 of Public Law 92-500 that defines the term "construction". (It should be noted that Title II of P.L. 92-500 does not define the term "initiation of construction".)

3. Section 29 of Public Law 95-217 that extends the July 1, 1972 date of P.L. 92-500 to July 1, 1973.

4. Letter dated December 27, 1967 from George H. Eagle of the Ohio Department of Health to the U.S. Department of Interior.

5. Letter dated March 11, 1974 from Roger Strolow of U.S. EPA to U.S. Senator Robert Taft, Jr.

6. U.S. EPA internal memo dated March 28, 1974 from Joseph M. Zorc to John T. Rhett.

7. Letter dated September 16, 1976 from Rocky River Mayor Earl Martin that was sent to various members of Congress.

Cont'd.

COUNTY OF CUYAHOGA

8. Letter dated September 25, 1981 from the writer to Ms. Charlie Smith, U.S. EPA Region V. (This letter did not include consideration of P.L. 95-217.)

9. Letter dated November 20, 1981 from the writer to Ms. Charlie Smith of U.S. EPA.

10. Letter dated November 25, 1981 from Congressman Ronald M. Mottl to U.S. EPA Region V Administrator Val Adamkus.

U.S. EPA Region V's major present objection to granting the reimbursement requested is that a "Research and Development Grant" project does not meet the criteria of a "normal Section 8 construction grant" project because a R/D project involves new technology and a Section 8 project involves conventional technology.

In response I would suggest that the basic intent of a Section 8 project is to provide adequate treatment of a community's sanitary wastewater. The Rocky River WWTP activated carbon process was intended to provide secondary treatment of all of the sanitary sewage of the four communities served.

I seriously doubt that a Section 8 grant would have been denied to the activated carbon process if it had been applied for.

In the past U.S. EPA has also maintained that "initiation of construction" meant actually instructing a contractor to proceed with construction rather than initiating any of the activities provided in the definition of "construction" in Section 212 of P.L. 92-500.

We are requesting reimbursement for 55% of the normal eligible project costs of a project that had a total project cost of approximately five-million dollars. The R/D grant was slightly less than one-million dollars.

Your advice as to whether the "congressional intent" at the time of enactment of P.L. 92-500 and P.L. 95-217 was to exclude R/D grant projects from Section 206 (a) reimbursement would be appreciated.

Thank you for your consideration.

I will be very happy to discuss this with you at your earliest convenience.

Very truly yours,

John J. Garner

JOHN J. GARNER, P.E.
Sanitary Engineer

JJG:jmf

cc: Congressman Ronald M. Mottl
Commissioners Brown, Campanella and Feighan
Mayors Earl Martin, Theodore Busch, James Cowles & Richard Anter, II
William Plato, County Administrator

(25)

M. MOTTL
DISTRICT, OHIO
COMMITTEES
VETERANS' AFFAIRS
SUBCOMMITTEES
SPECIAL INVESTIGATIONS (CHAIRMAN)
MEDICAL FACILITIES AND BENEFITS
INTERSTATE AND FOREIGN COMMERCE
SUBCOMMITTEES:
OVERSIGHT AND INVESTIGATIONS
COMMUNICATIONS

Congress of the United States
House of Representatives
Washington, D.C. 20515

December 1, 1981

DISTRICT OFFICES:
4001 RIVERSIDE DRIVE BUILDING
CLEVELAND, OHIO 44199
TELEPHONE (216) 522-4182
14812 DETROIT AVENUE, R.O.2
LAKEWOOD, OHIO 44107
TELEPHONE (216) 522-7152
5393 PEARL ROAD
PARMA, OHIO 44129
TELEPHONE (216) 885-3638

Richard Sullivan, Special Counsel
Committee on Public Works and Transportation
2165 Rayburn Building
Washington, D. C. 20515

Dear Richard:

Enclosed is a letter and background from John J. Garner, our Sanitary Engineer for Cuyahoga County with regards to the matter we had talked to you about on Monday concerning the reimbursement to Cuyahoga County and four communities: Bay Village, Fairview Park, Rocky River and Westlake, all of which are in my congressional district. This reimbursement is for the construction of improvements to the Rocky River Wastewater Treatment Plant.

Mr. Garner and myself were very encouraged by our conversation with you. Anything you could do to help our cause would be extremely appreciated not only by myself but by all of the officials in the County and the above communities.

Would you be kind enough to get back to Mr. Garner and myself after you have had a chance to research this material and give us your thoughts on the legislative intent to bolster our argument that the County and four cities should be reimbursed.

Time is of the essence, so any and all help you could give is appreciated. Thank you in advance.

Sincerely,

RONALD M. MOTTL

lmb

(26)

COUNTY OF CUYAHOGA

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

December 14, 1981

Val Adamkus, Director
U.S. EPA - Region V
230 South Dearborn
Chicago, Illinois 60604

Dear Mr. Adamkus:

I appreciated the time you took from your very busy schedule on November 30, 1981, to discuss with Congressman Ronald M. Mottl and myself the possible additional reimbursement for the Rocky River Wastewater Treatment Plant activated carbon process that was constructed by Cuyahoga County in the mid-70's.

It is our understanding that your staff is in the process of further researching the congressional intent regarding such reimbursement that resulted in certain language in U.S. Legislation - P.L. 92-500 and P.L. 95-217. In their research your staff may find it very productive to contact Mr. Richard Sullivan, Chief Counsel for the U.S. House of Representatives' Committee for Public Works. Mr. Sullivan can be reached at Room 2165, Rayburn Bldg., Washington, D.C. 20515 and telephone number Area Code 202-225-4472.

In our conversations Mr. Sullivan has displayed a great deal of personal knowledge in the area of congressional intent pertaining to this subject.

Thank you very much for your continued cooperation and interest in this matter.

Very truly yours,

John J. Garner

JOHN J. GARNER, P.E.
Sanitary Engineer

JJG:jmf

cc: Hon. Ronald M. Mottl, M.C.
Richard Sullivan

RONALD M. MOTTL
22D DISTRICT, OHIO
COMMITTEES:
VETERANS' AFFAIRS
SUBCOMMITTEES:
CHAIRMAN,
HOSPITALS AND HEALTH CARE
HOUSING AND MEMORIAL AFFAIRS
ENERGY AND COMMERCE
SUBCOMMITTEES:
OVERSIGHT AND INVESTIGATIONS
TELECOMMUNICATIONS, CONSUMER
PROTECTION, AND FINANCE

SUBURBAN CAUCUS
FOUNDER AND CO-CHAIRMAN

Congress of the United States
House of Representatives
Washington, D.C. 20515

(27)

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December 10, 1981

The Honorable James J. Howard
Chairman
Public Works and Transportation Committee
2165 Rayburn House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

I would appreciate it if you would lend us a hand with obtaining reimbursement of about $2 million for Cuyahoga County (Cleveland, Ohio) and four communities in my congressional district, namely Bay Village, Fairview Park, Rocky River, and Westlake. The four suburbs have about 80,000 residents.

This reimbursement is for construction of improvements to the Rocky River Wastewater Treatment Plant. Richard Sullivan, your fine Special Counsel has background on this issue.

I will call you tomorrow to provide you with further information on this issue. Your assistance would be greatly appreciated.

Sincerely,

RONALD M. MOTTL
Member of Congress

RMM/wm

P.S. Please call me tomorrow morning
Thanks!

COUNTY OF CUYAHOGA

(28)

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

December 24, 1981

Hon. Ronald M. Mottl, M.C.
5393 Pearl Road
Parma, Ohio 44129

Dear Congressman Mottl:

On behalf of Cuyahoga County I would like to thank you for your outstanding assistance to us in our attempt to obtain reimbursement grant monies for the Rocky River Wastewater Treatment Plant's activated carbon process. Your success in clearly establishing the congressional intent of P.L. 92-500 and P.L. 92-217 regarding reimbursement for such research and development grant project on the floor of the House, as indicated in the Congressional Record, Vol. 127, No. 188, Part II, and our understanding of the content of the Conference Report on H.R. 4503, The Municipal Wastewater Treatment Construction Grant Amendments of 1981, is very much appreciated.

I would appreciate receiving a copy of the full Conference Report and a copy of the enacted legislation as those documents become available.

Also enclosed is a copy of a letter dated December 21, 1981 from the writer to the Ohio EPA Director, Wayne Nichols, pertaining to the referenced subject.

Your continued interest and cooperation in this reimbursement effort in our continuing relationship with the U.S. and Ohio EPA organizations will also be appreciated.

I have personally enjoyed very much working with you and your staff during the past few weeks in this successful effort.

Thanks again.

Very truly yours,

John J. Garner

JOHN J. GARNER, P.E.
Sanitary Engineer

HON. RONALD M. MOTTL
23d District, Ohio
COMMITTEES:
VETERANS' AFFAIRS
SUBCOMMITTEES:
CHAIRMAN,
HOSPITALS AND HEALTH CARE
HOUSING AND MEMORIAL AFFAIRS
ENERGY AND COMMERCE
SUBCOMMITTEES:
OVERSIGHT AND INVESTIGATIONS
TELECOMMUNICATIONS, CONSUMER PROTECTION, AND FINANCE

SUBURBAN CAUCUS
FOUNDER AND CO CHAIRMAN

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29

February 2, 1982

FEB 4 '82 PM

RECEIVED
CUYAHOGA COUNTY
SANITARY ENGINEER

Mr. John Carner
Sanitary Engineer
Cuyahoga County
1219 Ontario Street
Cleveland, Ohio 44113

Dear John:

Enclosed is a copy of my testimony delivered at 3:30 pm today before the Appropriations Committee (Subcommittee on HUD and Independent Agencies), seeking the two million reimbursement for the sewage plant.

Also enclosed is a fact sheet with some additional information. I will continue to keep you apprised as we closely monitor this matter.

Sincerely,

Ron Mottl

RONALD M. MOTTL
Member of Congress

RMM/km

Enclosures

STATEMENT OF REPRESENTATIVE RONALD M. MOTTL

BEFORE THE SUBCOMMITTEE ON HUD-INDEPENDENT AGENCIES

FEBRUARY 2, 1982

MR. CHAIRMAN, THANK YOU FOR THE OPPORTUNITY TO TESTIFY.

MY PURPOSE IN APPEARING BEFORE YOU TODAY IS TO EXPLAIN THE NEED FOR A GRANT TO THE ROCKY RIVER PROJECT IN CUYAHOGA COUNTY, OHIO, UNDER THE REIMBURSEMENT PROVISIONS OF THE FEDERAL WATER POLLUTION CONTROL ACT.

THE PROJECT AT ROCKY RIVER, WHICH ALSO SERVES THE COMMUNITIES OF BAY VILLAGE, WESTLAKE, AND FAIRVIEW PARK, WAS ORIGINALLY FUNDED IN 1968 UNDER THE RESEARCH AND DEVELOPMENT GRANT PROVISIONS OF THE FEDERAL WATER POLLUTION CONTROL ACT. THE PROJECT WAS TO USE AN ADVANCED SYSTEM OF CHEMICAL COAGULATION AND CARBON FILTRATION IN ORDER TO PROVIDE THE HIGH LEVEL OF TREATMENT REQUIRED FOR DISCHARGES INTO LAKE ERIE. CONSTRUCTION ON THE PLANT WAS INITIATED IN OCTOBER 1972.

AT THE TIME OF THE ORIGINAL GRANT AWARD, THE ACT PROVIDED FOR A 50% FEDERAL PARTICIPATION IN THE PROJECT COSTS OF SUCH DEMONSTRATION PROJECTS. IN FACT, THE GRANT, TOTALING $991,000, WAS ONLY 37% OF THE ELIGIBLE PROJECT COSTS, WHICH EXCEEDED $2.5 MILLION IN 1971.

IN 1972, CONGRESS AMENDED THE FEDERAL WATER POLLUTION CONTROL ACT. A SIGNIFICANT PART OF THOSE AMENDMENTS WAS TO INCREASE THE FEDERAL GRANT SHARE FOR PROJECTS TO 75%. AT THE SAME TIME, A REIMBURSEMENT PROVISION WAS ADDED WHICH ALLOWED FOR GRANTS

WHICH WERE TO BE USED TO INCREASE THE FEDERAL SHARE UP TO 50 OR 55% FOR THOSE PROJECTS THAT HAD RECEIVED LESS UNDER THE OLD LAW. IN 1977 THE REIMBURSEMENT SECTION WAS AMENDED TO EXTEND THE DEADLINE BY WHICH CONSTRUCTION MUST HAVE BEEN INITIATED FOR THE PROJECT SEEKING REIMBURSEMENT, TO JULY 1, 1972. CONSTRUCTION ON THE ROCKY RIVER PLANT WAS CLEARLY INITIATED WITHIN THAT DEADLINE.

MR. CHAIRMAN, I BELIEVE STRONGLY THAT THE ROCKY RIVER PROJECT SHOULD BE CONSIDERED FOR SUCH A GRANT. IT IS CLEAR TO ME THAT THE PURPOSE OF THE REIMBURSEMENT PROVISION WAS TO GIVE EQUITABLE TREATMENT TO PROJECTS WHICH WERE BEGUN UNDER THE OLD LAW BUT WHICH RECEIVED LESS EVEN THAN 50 OR 55% OF ELIGIBLE PROJECT COSTS. THIS IS PARTICULARLY TRUE IN VIEW OF THE FACT THAT THE FEDERAL SHARE WAS INCREASED TO 75% IN 1972. AND IT IS WORTH STRESSING THAT TODAY, INNOVATIVE PROJECTS, SUCH AS THE ORIGINAL ROCKY RIVER PLANT, ARE STRONGLY ENCOURAGED IN THE LAW AND ARE ELIGIBLE FOR FEDERAL GRANTS OF 85% OF ELIGIBLE COSTS.

THE COMMUNITIES SERVED BY THIS PROJECT HAVE BEEN SEEKING REIMBURSEMENT FOR MANY YEARS. THEY HAVE BEEN FRUSTRATED BECAUSE EPA CONTENDS THAT THE REIMBURSEMENT PROVISION SHOULD BE USED ONLY FOR "NORMAL" PROJECTS, NOT INNOVATIVE OR DEMONSTRATION PROJECTS. I BELIEVE THIS RUNS COUNTER TO THE STRONG CONGRESSIONAL AND STATUTORY PREFERENCE FOR INNOVATIVE PROJECTS. THIS PREFERENCE IS ESTABLISHED THROUGH A NUMBER OF PROVISIONS IN THE WATER ACT, INCLUDING THE CURRENT 85% FEDERAL SHARE FOR INNOVATIVE AND ALTERNATIVE PROJECTS. THIS PREFERENCE WAS RECENTLY REAFFIRMED AND STRENGTHENED BY THE 1981 AMENDMENTS TO THE CONSTRUCTION GRANTS PROGRAM, NOW PUBLIC LAW 97-117. AS CONGRESSMAN ROE SAID WHEN TAKING THE CONFERENCE REPORT ON THAT LEGISLATION TO THE FLOOR, THE ROCKY RIVER PROJECT "IS CERTAINLY THE TYPE OF PROJECT WHICH SHOULD BE ELIGIBLE UPON THE APPROPRIATION OF FUNDS." I URGE YOU TO CONSIDER ALLOWING FUNDS FOR REIMBURSEMENT OF THAT PROJECT IN THIS SUPPLEMENTAL APPROPRIATION FOR THE CONSTRUCTION GRANTS PROGRAM.

FACT SHEET
REIMBURSEMENT FOR ROCKY RIVER, OHIO
PROJECT UNDER SECTION 206(a) CLEAN WATER ACT

- Project at Rocky River, Ohio, also serves Bay Village, Westlake and Fairview Park:

- Project originally funded (1968) by a Research and Demonstration (R&D) grant under provisions of Section 6 Federal Water Pollution Control Act (FWPCA)

- Grant awarded to Board of County Commissioners, Cuyahoga Coungy on behalf of the four communities.

- Project includes chemical coagulation and carbon filtration due to high treatment required for discharge to Lake Erie.

- Original (R&D) funding level was $741,350 or 50 percent of estimated project cost.

- Cost subsequently increased to $2.5 million (March 1971). R&D grant could be increased to only $991,350 or 37 percent of estimated costs.

- Project cost probably now exceeds $2.5 million, but precise figure unavailable at this time. R&D grant remains at $991,350.

- Construction initiated in October 1972. PL 92-500 required construction to be initiated by June 30, 1972, to qualify for reimbursement under section 206(a).

- PL 95-217 (enacted 1977) extended period for reimbursement to June 30, 1973.

- Legislative history and regulations (40CFR 35.855-copy attached) limit reimbursement on projects initiated June 30, 1972-July 1, 1973 to those which received a grant under Section 8, FWPCA.

- See legal opinion prepared by Region V. (attached)

- Congressman Roe tells Congressman Mottl during floor debate on December 16, 1981, that Rocky River "is certainly the type of project which should be eligible upon appropriation of funds, and we shall certainly do all we can on behalf of the State of Ohio."

- EPA has agreed with Congressman Mottl to provide language for appropriation act that would allow reimbursement for Rocky River project.

- A PL 92-500 construction grant of $21.4 million was awarded September 1981, for modification and additions to this plant. These improvements retain essentially all of "R&D facilities" except carbon filters and building that houses them. (Carbon filters failed to perform adequately.)

February 1, 1982

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

ATE

ECT Eligibility of Rocky River for § 206(a) Reimbursement Grant

OM Dorothy Attermeyer
Assistant Regional Counsel

O: Valdas V. Adamkus
Regional Administrator

U: Barbara Sidler
Regional Counsel

Facts

On July 22, 1968, the Federal Water Pollution Control Administration (predecessor agency of the EPA) offered a "Research and Development" grant "under 33 U.S.C. § 466 et seq" to the Board of County Commissioners, Cuyahoga County, for construction of 'Chemical Clarification and Carbon Filtration and Adsorption as Secondary Treatment for Rocky River Wastewater Treatment Plant." The offer was made pursuant to Section 6 of the Federal Water Pollution Control Act (FWPCA), as amended, and required the grantee (hereinafter Rocky River) to act in accordance with the contents and conditions imposed by, inter alia, "Section 6 of the Clean Water Restoration Act of 1966." Pub. L. 89-753. It was accepted on or about August 16, 1968 by the County's Sanitary Engineer. The grant was described as the U.S. EPA Research Development and Demonstration Grant No. 11010 DAB after EPA was organized in 1970.

The grant offer in 1968 was $741,350 or 50% of eligible costs of the project. The grant amount was increased by a supplemental grant offer of $250,000 on March 3, 1971. Total eligible grant costs at that time were $2,573,610; therefore, EPA's award of a grant totalling $991,350 amounted to 37.2% of eligible costs.

Rocky River has requested EPA's advice as to its eligibility for reimbursement under Section 206(a) of the Clean Water Act (formerly FWPCA) for some of the costs which were not federally funded for this project. It previously sought reimbursement after passage of the 1972 amendments to the FWPCA (Pub. L. 92-500) and was advised that it was ineligible because it had initiated construction after the date specified in Pub. L. 92-500. [Rocky River's major construction contract was awarded on October 2, 1972 and Pub. L. 92-500 required that construction be initiated on or before July 1, 1972. In 1977, the FWPCA was amended and the date for initiation of construction in Section 206(a) was extended to July 1, 1973. (Pub. L. 95-217, Section 29). Thus, once again Rocky River asks EPA's advice as to whether it qualifies for a reimbursement grant under Section 206(a) as revised by the 1977 Amendments, Pub. L. 95-217.

Issue

Is Rocky River entitled to reimbursement under § 206(a) of the Clean Water Act for costs of construction in excess of those costs already paid from Federal grant funds?

Answer

No.

Discussion

Reimbursement under § 206(a) of the Clean Water Act, 33 U.S.C. § 1285(a), is available to grantees eligible for funding under §6 of the Federal Water Pollution Control Act Amendments of 1956 (Public Law 84-660, approved July 9, 1956). Section 6 provided federal funding for construction of sewage treatment plants in an amount not to exceed 50% of the "estimated reasonable cost thereof." (Section 6 was original with the Water Pollution Control Act of 1948, Pub. L. 80-845, and was redesignated Section 8 in 1956--see discussion below). It is the only provision for federal funding of sewage treatment plant construction in Pub. L. 84-660.

The Water Quality Act of 1965 (Pub. L. 89-234) introduced a new Section 6 to the existing water law and redesignated existing Section 6 to Section 8 of the water law. The new Section 6 provided for federal grants of up to 50% 1/ of the estimated reasonable cost of constructing a project which would

> serve as a useful demonstration of a new or improved method of controlling the discharge into any water of untreated or inadequately treated sewage or other waste from sewers . . . .

These grants became known as "research and demonstration grants" or simply "demonstration grants."

As to redesignated or old Section 6 (new Section 8), although Congress increased the appropriations in 1965, the law continued to provide for only 30% federal funding for construction of conventional or proven technology waste treatment plants under ordinary circumstances. Thus from 1966 to 1972, a grantee could get a larger federal share by constructing a demonstration plant (up to 75%) than it could for constructing a conventional plant (up to 30%). 2/

1/ The federal share was increased to a maximum of 75% by the 1966 Amendments. Clean Water Restoration Act of 1966, Pub. L. 89-753, § 201(a), 80 Stat. 1247.

2/ Pursuant to amendments in 1966, under special circumstances not relevant here, a grantee could receive a grant of up to 50% of construction costs. FWPCA, § 8(b)(5) and (7), Clean Water Restoration Act of 1966, Pub. L. 89-753, § 203(b)(6) and (7), 80 Stat. 1249.

In 1972, Congress rewrote all the existing federal water pollution control laws in the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500). 33 U.S.C. § 1251, et seq. Section 201 (similar to § 8 of the prior law) authorized federal grants for construction of sewage treatment plants and Section 202 provided that the federal share should be 75% of construction costs. 33 U.S.C. §§ 1291, 1292. In order to remove any discrimination against states or municipalities which had not received full federal aid or had proceeded with construction of sewage treatment facilities without any federal aid, 3/ Congress passed a reimbursement provision for projects begun after June 30, 1966 but before enactment of the 1972 law (July 1, 1972). Such projects would be eligible for up to 55% federal funding of costs on a reimbursement basis.

The legislative history of the 1972 Amendments indicates that Congress was concerned about sewage treatment plants built without federal assistance during the earlier stages of the federal construction grant program. The report accompanying the Senate bill discussed the intent of the reimbursement provision: it was to be applicable to communities which prefinanced a portion of the federal share of the eligible cost of constructing waste treatment facilities in reliance upon section 8(c) of the FWPCA. That section was intended to provide an incentive to States to accelerate their municipal water pollution control projects ahead of the availability of federal appropriations on the belief that "allotments for any fiscal year ending prior to July 1, 1971 shall also be available for ... reimbursement of State or local funds ... to the extent that assistance could have been provided under [Section 8(c)] if such project had been approved pursuant to this section and adequate funds had been available." FWPCA, Pub. L. 84-660, § 6(c), 70 Stat. 502.

In 1972, Congress recognized that appropriations had fallen far short of expenditures and felt a moral obligation to rectify the shortfall. The report noted that "many large cities failed to receive the full federal contribution of 30% because of individual project limitations ... [$250,000] and because of inadequate appropriations for the construction grant program." S. Report 92-414, October 28, 1971, 92nd Cong., 2nd Sess. ____, reprinted in (1972) U.S. Code Cong. & Ad News 3698-3700.

Conspicuous by its absence, perhaps, is any mention of construction grants received under any other provisions of the prior laws. The only grant provision referred to in either the law or the legislative history is Section 8 of the FWPCA.

Rocky River received a research and development grant from EPA's predecessor agency pursuant to § 6(a) of Pub. L. 89-234 as amended by Pub. L. 89-753. There is no mention of research and demonstration grants per se or § 6(a)

3/ S. Rep. No. 92-414, Conf. Rep. No. 92-1236, 92nd Cong., 2nd Sess. ____, reprinted in (1972) U. S. Code Cong. & Ad News 3700, 3791.

grants in either the 1972 law or its legislative history, perhaps because no promise of possible reimbursement appears in § 6(a). On the contrary, the Congress seemed more concerned with grantees who either received no federal funding at all or those who did not get "their full 30%"-- neither condition applies to Rocky River. Thus, it cannot be deduced with any degree of certainty that Congress in enacting § 206(a) of the 1977 Amendments was particularly concerned with reimbursing recipients of § 6(a) grants for any shortfalls they may have experienced between the maximum allowed under the law and the amount actually received.

For this reason, we do not believe Rocky River would be eligible for a § 206(a) reimbursement grant under the 1977 law.

Even if the absence of any reference to Section 6(a) grantees cannot be taken as conclusory in terms of what Congress intended in the 1972 legislation with respect to reimbursement grants, it is not clear that Rocky River would be eligible for a grant under § 206(a) because of the initiation of construction difficulty outlined on page one of this memorandum.

The 1977 Amendments extended the initiation of construction date to July 1, 1973 so that projects begun after July 1, 1972 would still be eligible for reimbursement under § 206(a). Thus, Rocky River's October 1, 1972, start of construction would no longer be an obstacle to eligibility of the project for a reimbursement grant; however, the legislative history of the 1977 amendments is patently clear as to whom Congress intended the extended July 1, 1973 date to apply, viz. grantees under Pub. L. 84-660.

As the Conference Report on this amendment explains:

> The purpose of this amendment is to give equitable treatment to Public Law 84-660 projects which received less than either their 50 percent or 55 percent eligible grants and which were unable to initiate construction by the June 30, 1972 cut off date to qualify for reimbursement under section 206(a). H.R. Conf. Rep. No. 95-830 95th Cong., 1st Sess. 67, reprinted in (1977) U.S. Code Cong. & Ad. News 4442.

The amendment in the 1977 law appears at Section 29. Paragraph (b) of Section 29 extends the date for applications for reimbursement but also references the type of grant which is eligible for reimbursement, to wit:

> publicly owned treatment works for which a grant was made under the Federal Water Pollution Control Act, as amended by the Water Pollution Control Act amendments of 1956 (Public Law 660, 84th Congress). Clean Water Act, Pub. L. 95-217, § 29(b) 91 Stat. 1576. (emphasis added)

Thus, the 1977 Amendments and the accompanying legislative history clarified Congress' intent that only projects which had already received federal aid pursuant to Pub. L. 84-660 would be eligible for reimbursement under § 206(a) as amended by the 1977 law. 4/

4/ See also EPA regulations at 40 C.F.R. § 35.855.

(30)

gram alone, our subcommittee has proposed a number of changes which have yet to be put forth in legislative form. They include:

Consideration of alternative sources of funding.

Additional measures to increase the responsibility of grantees, such as withholding of a grant until the applicant operates any existing facilities with maximum efficiency, and withholding 20 percent of grant funding until a new facility performs as intended.

A strengthened role for the Environmental Protection Agency's Office of Inspector General in rooting out waste, fraud, and abuse.

Clearer and tighter lines of responsibility and accountability in the performance of design engineers, through such approaches as turnkey projects and reduced Federal interference in the design of facilities.

As I said, many of our oversight recommendations have yet to be formally offered on the assumption that the entire act will be reviewed again next year. But the extent to which our findings parallel the position taken by the conferees on the issues we both addressed suggests that our remaining recommendations—and earlier ones arising from our examination of the regulation of toxic pollutants—should find a receptive audience.

Meanwhile, I urge adoption of the conference report.

Mr. HAMMERSCHMIDT. Mr. Speaker, I reserve the balance of my time.

Mr. ROE. Mr. Speaker, I yield such time as he may consume to the gentleman from Ohio (Mr. MOTTL).

Mr. MOTTL. Mr. Speaker, I certainly appreciate the distinguished subcommittee chairman yielding at this point.

Mr. Speaker, I would like to ask the distinguished chairman of the Subcommittee on Water Resources (Mr. ROE) a question with regard to the construction grants program.

In my district the four communities of Rocky River, Bay Village, Fairview Park, and Westlake built a sewage treatment plant with EPA guidance. However, when this "pilot program" [illegible] was completed, it turned out that it did not operate properly. The plant, which finally completed with [illegible] modifications will serve about [illegible] people. The attempts on the part of these communities to receive [illegible] from EPA go back [illegible]. They have been unsuc[illegible] of EPA's contention [illegible] project, since it involved [illegible] technology. Is [illegible] a [illegible] construction grant project. [illegible] opinion [illegible] project is questionable [illegible] the act.

Mr. [illegible] Speaker, in [illegible] use [illegible] requires [illegible] opinion [illegible] communities [illegible] Wa[illegible] [illegible] standard [illegible]

managers urging the appropriation of funds to implement section 206 which provides for reimbursement of local interests when they perform work with their own money in accordance with requirements of the act. The project which the gentleman mentions is certainly the type of project which should be eligible upon the appropriation of funds, and we shall certainly do all we can on behalf of the State of Ohio.

Mr. HAMMERSCHMIDT. Mr. Speaker, will the gentleman yield?

Mr. MOTTL. Yes, I yield to the distinguished gentleman.

Mr. HAMMERSCHMIDT. Mr. Speaker, I want to associate myself with the remarks of our distinguished chairman in support of his response to the question of the gentleman from Ohio.

Mr. MOTTL. I thank the distinguished subcommittee chairman, also the full committee chairman, the gentleman from New Jersey (Mr. HOWARD), also the gentleman from Arkansas (Mr. HAMMERSCHMIDT), and the gentleman from California (Mr. CLAUSEN) for their cooperation.

Mr. ROE. Mr. Speaker, I yield 2 minutes to the distinguished gentleman from California (Mr. ANDERSON), a member of the committee.

Mr. ANDERSON. Mr. Speaker, I rise in support of the conference report on H.R. 4503, the Municipal Wastewater Treatment Construction Grant Amendments of 1981. I also wish to commend subcommittee chairman ROBERT ROE and ranking member JOHN PAUL HAMMERSCHMIDT for a job well done.

One of the provisions in the conference report on H.R. 4503 is of particular interest to me. This is section 4 which provides that the Administrator of EPA shall make a grant, from any funds otherwise allotted to the State of California, to the city of San Diego in connection with that city's aquaculture sewage process.

Nearly 100 percent of San Diego's water is imported. The high cost of this water together with the diminishing supply of ground and river water led San Diego to the planning of a wastewater to potable water recycle system. This system which will use vascular plants and reverse osmosis technology will result in the production not only of treated sewage effluent but of potable water. The production of potable water will not only help meet the water supply needs of the region but will result in a more economical system.

This type of innovative and alternative technology is important not only to San Diego but to other communities throughout the Nation which are facing water supply problems. The encouragement of this type of project is [illegible] in the national interest. It [illegible] the type of innovative and [illegible] technology which must be [illegible] that we may truly achieve the optimum yield from our finite water resources.

Mr. ROE. Mr. Speaker, I yield 2 minutes to the distinguished gentleman from California (Mr. PANETTA).

(Mr. PANETTA asked and was given permission to revise and extend his remarks.)

Mr. PANETTA. Mr. Speaker, I, too, rise in support of this legislation. I think it is extremely important to maintain our commitments that have been made over the years in this area. With regard to that, I would like to speak to one particular project.

The agricultural irrigation demonstration project in Castroville, Calif., is unique. It is the only program in the United States utilizing secondary treated municipal waste water for commercial crop irrigation. The benefits of this program are two-fold. It reduces the demand on precious limited water resources and by reducing the overdraft of the local ground water supply helps to combat the increasing threat of salt water intrusion into the agricultural producing areas along Monterey Bay.

Earlier this year some questions were raised over the use of construction grant funds for the agricultural irrigation demonstration project. Clearly use of these funds for water reclamation and reuse purposes serves the objectives and intent of Congress in creating the construction grants program. To prohibit further assistance for this project would be a tragic step backward from our national commitment to the innovative and creative conservation of our precious water resources.

The agricultural irrigation demonstration project serves to demonstrate that a lesser level of treatment than that which may be provided by a Monterey regional wastewater treatment plant, provides acceptable public health protection. It also demonstrates to local farmers and local public health officials that reclamation does not adversely affect crops or soils in the project area. Finally, the program demonstrates that crops so irrigated are marketable and acceptable to the public.

I would like to briefly review for you the project's progress over the past few years. In March of 1978 a 2-year study was completed in which the concept of the demonstration project was examined, a work plan developed, a site selected, and conceptual designs and environmental assessments completed. Between 1978 and 1980 [illegible] and construction of [illegible] treatment plant and [illegible] and preparation of [illegible] and purchase of [illegible] was completed. [illegible] of the project [illegible] which treated water [illegible] used to irrigate crops [illegible] circumstances to [illegible] the effects. After [illegible] this highly successful [illegible]

LY (MRS. HALE) BOGGS, M.C.
2D DISTRICT, LOUISIANA
COMMITTEES:
APPROPRIATIONS

(31)

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WASHINGTON, D.C. 20515
H.G. KAYALIAN
ADMINISTRATIVE ASSISTAN

Congress of the United States
House of Representatives
Washington, D.C. 20515

February 3, 1982

The Honorable Ronald M. Mottl
2459 Rayburn Building
U.S. House of Representatives
Washington, D.C. 20515

Dear Ron:

I would like to thank you for having appeared before our HUD/Independent Agencies Subcommittee yesterday to present your case for reimbursement of the Rocky River Area Sewage Treatment Plant.

You will be pleased to know that your colleague, Louis Stokes, made a forceful presentation which served to amplify your earlier testimony.

I hope that some accommodation can be made for Rocky River, because it seems clear that your constituents deserve some recourse for their early efforts to achieve cleaner water.

With my best wishes and kindest regards,

Sincerely,

Lindy

Lindy (Mrs. Hale) Boggs, M.C.

LB:ph

BILL GREEN
18TH DISTRICT, NEW YORK

COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEES:
HUD-INDEPENDENT AGENCIES
DISTRICT OF COLUMBIA

(32)

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February 3, 1982

The Hon. Ron Mottl
2459 Rayburn HOB
U.S. House

Dear Ron:

Thank you for yesterday's letter to me and for taking the time to appear before the HUD Subcommittee. Your testimony was strong and persuasive.

As I am sure you know by now, the Subcommittee felt it was not able to comply with your request and did approve a funding resolution which prohibits appropriations for Section 206 of the reform legislation. The Subcommittee has a long tradition of resisting earmarking of funds for specific projects. I will say, however, that Lou Stokes made a very strong effort on your behalf during mark-up. Unfortunately, the other Members felt that, if we allowed funding for Section 206, we would also have to allow funding for Section 201(M), which affects three California cities, and other sections. In fact, in supporting the Subcommittee's decision to resist earmarking, I also had to accept the prohibition of funding of Section 205(K) which would have benefitted a convention center project in Manhattan.

I realize that this must be a disappointment for you, but I hope that you understand the concerns of the Members of the Subcommittee. I would be happy to discuss this further with you any time if you would like additional clarification of our actions.

Sincerely,

Bill

Bill Green
Member of Congress

BG:jc

THIS STATIONERY PRINTED ON PAPER MADE WITH RECYCLED FIBERS

33

COUNTY OF CUYAHOGA

FEB 1982 AM

RECEIVED
CUYAHOGA COUNTY
SANITARY ENGINEERING DEPT.

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

February 4, 1982

Hon. Louis Stokes, M.C.
House Office Bldg.
Washington, D.C. 20515

Re: Cuyahoga County's Rocky River Wastewater Treatment Plant Activated Carbon Process Reimbursement

Dear Lou:

During the 1970's the Cuyahoga County Board of County Commissioners and the Cities of Bay Village, Fairview Park, Rocky River and Westlake unsuccessfully attempted to obtain reimbursement by the U.S. EPA for the activated carbon treatment process at the Rocky River Wastewater Treatment Plant that was constructed in the mid 1970's. The basis for the reimbursement request was Section 206 (a) of the Clean Water Act Amendments of 1972 and 1977.

Recently Congressman Ronald M. Mottl, who represents those four communities, has attempted to clarify the congressional intent of the 1972 and 1977 legislation so that the U.S. EPA could provide the 55 percent reimbursement for this unsuccessful research and development grant project.

We have been advised by Congressman Mottl that the best solution to this reimbursement problem probably involves a specific appropriation of funds for such reimbursements.

The Cuyahoga County Board of County Commissioners and the Mayors and Councils of the four communities that are serviced by this plant feel very strongly that this activated carbon process is entitled to reimbursement in accordance with the 1972 and 1977 legislation.

We respectfully request your cooperation as a member of the Cuyahoga County Congressional Delegation and in your position as an influential member of the House Appropriations Committee to assist us in our attempts to obtain this reimbursement.

Your interest and cooperation in this matter is very much appreciated.

Sincerely yours,

VIRGIL E. BROWN, President
Board of County Commissioners

20-955 2261

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istrator may otherwise direct. Final payment will be made only after a final inspection by an EPA representative upon completion of the project.

Subpart D—Reimbursement Grants

AUTHORITY: Sec. 206, Federal Water Pollution Control Act Amendments of 1972, as amended by Pub. L. 93-207 and section 29 of Pub. L. 95-217.

SOURCE: 43 FR 7426, Feb. 23, 1978, unless otherwise noted.

§ 35.850 Purpose.

(a) This subpart governs funding under section 206(a) of the Federal Water Pollution Control Act, as amended, for publicly owned sewage treatment works on which construction was initiated after June 30, 1972, but before July 1, 1973, which was authorized by Pub. L. 95-217, December 27, 1977.

(b) Funding under section 206 for publicly owned sewage treatment works on which construction was initiated after June 30, 1956 but before July 1, 1972, and for which applications were due January 31, 1974, is governed by the applicable provisions of the previously promulgated Subpart D regulations (39 FR 3678, January 29, 1974 and 39 FR 49855, November 21, 1974).

§ 35.855 Project eligibility

Grants may be made for reimbursement of State or local funds used for public sewage treatment works projects on which construction was initiated after June 30, 1972, but before July 1, 1973, and for which a grant was awarded under section 8 of Pub. L. 84-660.

§ 35.860 Eligible and ineligible costs.

(a) Eligible costs of construction include costs of preliminary planning to determine the economic and engineering feasibility of treatment works; the engineering, architectural, legal, fiscal, and economic investigations and studies, surveys, designs, plans, working drawings, specifications, procedures, and other action necessary to the construction of treatment works; the erection, building, acquisition, alteration, remodeling, improvement, or extension of treatment works; and the inspection and supervision of the construction of treatment works.

(b) Ineligible costs include collector sewer lines and land acquisition.

§ 35.865 Applications.

(a) An application for a grant must be received by the appropriate Regional Administrator on or before March 27, 1978.

(b) An application for reimbursement shall be made in writing (if mailed, a return receipt should be requested) and shall contain the following information:

(1) Brief description of project.

(2) Total actual or estimated eligible cost of project as of March 27, 1978.

(3) Total amount of Pub. L. 84-660 funds and any other Federal assistance received to date.

(4) Amount of additional Federal financial assistance requested under section 206 of the Act.

(5) The dates (actual or estimated) of initiation and completion of construction.

(6) Evidence of approval by State agency.

(c) The applicant must furnish such other information as may be required for determination of eligibility for and amount of reimbursement under this subpart.

§ 35.870 Grant amount.

(a) For a project described in § 35.855, the grant amount shall not exceed a total amount equal to the difference between the amount of Federal financial assistance, if any, received under Pub. L. 84-660 (as amended) for the project, and 50 percent of the allowable costs of the project (or 55 percent of the costs where the Administrator determines that project construction was undertaken in conformity with a comprehensive metropolitan treatment plan). However, reimbursement for project costs from all Federal grant sources may not exceed 80 percent of the costs of the project.

(b) A reimbursement grant will be rounded to the nearest hundred dollars. Reimbursement grants will not be awarded to projects entitled to reimbursement of less than $1,000.

COUNTY OF CUYAHOGA

35

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

February 5, 1982

Hon. Ronald M. Mottl, M.C.
House Office Building
Washington, D.C. 20515

Dear Congressman Mottl:

We very much appreciate your continued efforts to obtain the U.S. EPA reimbursement of the activated carbon treatment construction at the Rocky River Wastewater Treatment Plant. In reviewing the materials you have kindly continued to send to me I continue to be very concerned about U.S. EPA's negative attitude towards the eligibility of this activated carbon process for reimbursement in accordance with Section 206 (a) of the Clean Water Act Amendments of 1972 and as amended in 1977.

I would appreciate some clarification as to why this research and development grant project did not meet the requirements of Section 8 of the original Water Pollution Control Act even though the grant was received under Section 6. Although the activated carbon process was an experimental process it was intended to satisfy the secondary treatment requirements for the total sewage flow received from Bay Village, Fairview Park, Rocky River and Westlake. It would seem that that objective would have satisfied the intention of projects funded under Section 8.

It would also seem that the last sentence of the Section 206(a) of the 1972 legislation would allow for such research and development projects to be reimbursed by the use of the words "....any such works receiving federal grants from all sources....". Those words would seem to indicate that projects eligible for reimbursement would not have been exclusive Section 8 grant projects.

Despite your excellent efforts to clarify this situation on the floor of Congress and your excellent efforts to have appropriation monies established for such reimbursement, I continue to have the feeling that U.S. EPA is continuing to take the position that research and development grant projects will not be eligible for such reimbursement.

Please advise us as to anything we can do to assist you in changing U.S. EPA's current position in this matter.

Thanks again for your excellent cooperation in this matter.

Very truly yours,

John J. Garner

JOHN J. GARNER, P.E.
Sanitary Engineer

COUNTY OF CUYAHOGA

(36)

John J. Garner, P.E.
Sanitary Engineer

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

March 15, 1982

Mr. William Kitchel
c/o Congressman Mottl's Office
House Office Bldg.
Washington, D.C. 20515

Dear Bill:

As we discussed, enclosed is a copy of the Sewage Treatment Construction Grants Manual, dated February 22, 1982.

Very truly yours,

Jack

JOHN J. GARNER, P.E.
Sanitary Engineer

JJG:jmf

Enclosure

75 Eighth Square Cleveland Ohio 44113

BNA

SEWAGE TREATMENT CONSTRUCTION GRANTS MANUAL

Volume 6, Number 4 THE BUREAU OF NATIONAL AFFAIRS, INC. February 22, 1982

Includes Filing Instructions, page 16.

NEWS AND DEVELOPMENTS

REAGAN'S PROPOSED FISCAL 1983 BUDGET WOULD PROVIDE EPA FUNDING OF $3.6 BILLION

President Reagan Feb. 8 submitted to Congress a fiscal 1983 budget request of $3.6 billion for the Environmental Protection Agency, including $961 million for the agency's operating budget and $2.4 billion for the sewage treatment construction grants program.

The $961 million operating budget represents a 12 percent decrease from the fiscal 1982 appropriations of $1.086 billion and a 29 percent reduction from the fiscal 1981 appropriations of $1.35 billion.

Construction Grants Program

The Administration requested an emergency supplemental appropriation of $2.4 billion for the sewage treatment construction grants program in fiscal 1982, following enactment of authorizing legislation in December (News and Developments, Jan. 25, p. 9). Legislation enabling appropriation of the full amount is being considered in Congress (See related story, p. 14). If a full appropriation is approved, obligations are estimated to total $3.4 billion for 642 new Step 3 construction awards for sewage treatment projects.

The Administration also requested $2.4 billion for fiscal 1983. The funds would be used to finance 664 new Step 3 awards, according to EPA. Program resources also would be used for preparing a new survey of sewage treatment needs in the United States, for maintaining a detailed review process for funding decisions on advanced treatment projects, and for continuing the multi-year interagency agreement with the Army Corps of Engineers to reduce the backlog of projects and to inspect ongoing ones.

During fiscal 1982, EPA said, it would concentrate on closing out projects, so that by the end of fiscal 1983, 1,250 projects would be completed.

In view of the fiscal 1981 program rescission of $1.7 billion requested by Reagan and approved by Congress last summer, outlay will decrease by $700 million in fiscal 1983, representing the first major reduction in federal expenditures for the program, according to EPA.

By the end of fiscal 1983, EPA said, 46 states will have accepted delegation of project management responsibilities, so that the agency can reduce its resources and shift to a role of "overall program manager."

New Federalism Proposal

Earlier in his Jan. 26 State of the Union address, Reagan called for a new federalism initiative that involved turning over to the states by 1988 40 federal grant programs, including the Clean Water Act's sewage treatment construction grants program.

The President said the shift was necessary to control the growth of federal grants in aid programs. He also said he intended to cut more non-essential government spending, end more government waste, and continue efforts to reduce the number of federal employees.

During Phase I, states could fund the grant programs through a new $28 billion annual federal trust fund, which would be reduced by 25 percent a year during Phase II, according to Reagan.

Under the new federalism initiative, more than 40 categorical and block grant programs, including the sewage treatment construction grants program, would be turned back to states on a voluntary basis in Phase I (fiscal 1984 to 1987) and on a permanent basis in Phase II (fiscal 1988 to 1991). Rural water/sewer and facilities grants were among others included in the proposal.

Reactions to Federalism Proposal

Andrew Elliott, manager of public affairs for the Water Pollution Control Federation, said the group is generally supportive of the President's idea but is waiting for details. He said the federalism proposal appears to be consistent with the 1981 Clean Water Act amendments to the sewage treatment construction grants program and consistent with the federation's tentative proposal for phasing out the construction grants program.

Elliott said, however, that if states are unable to assume the program fully when envisioned by the President, there should still be a federal role in supporting wastewater plant construction, perhaps through a trust fund, a low interest loan program, or some other federal funding source.

Larry Silverman, of the Clean Water Action Project and executive director of the American Clean Water Association, said the federalism proposal and President Reagan's commitment to approximately $48 billion over the next 10 years for sewage treatment construction under the 1981 Water Act amendments are generally compatible.

The 1981 amendments to the Act are the first step in a smooth transition of transferring the program to states, Silverman said. "If states can't clean up their own pollution, they can't be trusted with much of anything else," he commented.

A staff member of the National Governors' Association, however, said that to enact Reagan's proposal Congress would have to go back and amend the Clean Water Act, and "right now the chances of that are virtually nil, because Congress just completed action on it.

"Too many people fought too hard for a whole year to get the reforms we now have, and I don't think people are amenable to changing them anytime in the near future," the staff member said, adding that the group will have to look more closely at Reagan's proposal before commenting on transfer of the sewage treatment program to states.

An NGA spokesman said that, because so little is known about the details of Reagan's proposal, much depends on how the Administration, Congress, and the state and local partners answer the questions of whether the states have the necessary capacity to [illegible]

face of enormous budget cuts and whether a plan with an equalizing formula will be developed.

And a congressional staff member added that the President's federalism proposal "certainly does not appear compatible with the recently passed sewage treatment legislation, which contemplates a continuing federal role through the next four years."

EPA SCHEDULE FOR REGULATORY CHANGE SET TO COINCIDE WITH FISCAL 1982 FUNDING

The Environmental Protection Agency's Office of Water Program Operations recently established a regulatory and guidance schedule for the sewage treatment construction grants program that office officials hope will dovetail with the enactment of a fiscal 1982 appropriation for the program (See related story, p. 14).

The schedule calls for *Federal Register* publication in April of both the regulatory revisions launched last August by EPA Deputy Administrator John Hernandez and the regulatory changes mandated by 1981 Clean Water Act amendments (PL 97-117). The changes would take the form of interim final regulations and would set the requirements under which grants using fiscal 1982 money could be awarded.

Program officials told BNA Jan. 15 no opposition has emerged to full funding of the program at $2.4 billion in fiscal 1982, and they expect Congress to complete action on an appropriations bill by April.

In addition to the interim final regulations, the office also plans in April to publish a new guidance document on financial capability and revised guidance documents on facilities planning and municipal construction to accommodate changes resulting from the new amendments.

The office's schedule called for publication of the regulations in draft form by the end of January, incorporating the changes proposed last August (News and Developments, Sept. 28, 1981, p. 41) and those required by PL 97-117; public comment during February, and opportunity for review and approval by top agency officials and the Office of Management and Budget during March.

Under the schedule, the comment period on the interim final regulations would occur during April and May, and the rules would be published in final form in June. EPA hopes to have this process completed in time to meet the July 1 deadline for having the final rule included in this year's update of the Code of Federal Regulations.

Completion of a new user charge handbook and utility management manual supplement is also set for July.

Also in July, review and possible revisions are scheduled for completion on three other sets of regulations that affect the construction grants program, water quality management, procurement, and ocean discharge.

The office schedule noted that regulatory revisions regarding pretreatment, public participation, and the National Environmental Policy Act are "being developed," but gave no date for their completion.

Mandated Regulatory Changes

A Jan. 12 memorandum from Harvey Pippen, director of EPA's Grants Administration Division, to regional administrators outlined these five regulatory changes that PL 97-117 requires immediately:

- Section 3 of the Act prohibits the agency from awarding Step 1 (planning) or Step 2 (design) grants. Instead, EPA now will "make allowance" in Step 3 (construction) grants for funds spent during the facility planning and advanced engineering and design phase "at the prevailing federal share and based on a percentage of total project cost."

Pippen's memorandum said EPA "will determine the percentage based on our general experience with prior projects and issue necessary data by April 1982."

- Section 8 reinstates the innovative and alternative program and establishes a mandatory I/A reserve for fiscal 1982 through fiscal 1984 of 4 percent, but permits state governors to reserve up to 7.5 percent.

Because I/A authorizing legislation expired Sept. 30, 1981, EPA had allowed states to release unobligated fiscal 1981 I/A reserves for other projects, with the understanding that they would be required to re-establish the fiscal 1981 reserves if Congress reauthorized the program.

Since Congress did so in PL 97-117, states that reduced the fiscal 1981 reserve will now be required to reinstate it based on their fiscal 1981 allotment, according to EPA. If a state's fiscal 1981 reserve is not obligated for increases on I/A projects by Sept. 30, it will be subject to reallotment.

- Section 9 increases the cost limit on combined Step 2 and 3 grants from $4 million to $8 million. The regulations therefore will be revised to permit small grantees with projects that have total Step 3 costs of $8 million or less to apply for combined Steps 2 and 3 grants, according to EPA.

However, since, under Section 3 of the Act, EPA no longer awards Step 2 grants, the new regulations "will take into account the new allowance authority for Step 1 and 2 work and the states' new authority to advance funds to small communities for Step 1 and 2 work," Pippen's memorandum explained.

In the meantime, it said, EPA will continue to reimburse Step 2 costs as it has in the past, for combined Step 2 and 3 grants awarded after Dec. 29, 1981, the day President Reagan signed PL 97-117.

- Section 11 allows grantees' plans and specifications to cite only one brand name of equipment or its equal. Previously, grantees were required to cite two brand names. The new regulations will reflect this change, according to EPA.

- Section 14 permits states to increase their state management assistance grant reserve from 2 percent of its allotment after Sept. 30, 1981, to 4 percent, based on the amount authorized. This change in the law is also to be reflected in the new regulations.

The regulatory class deviation outlined in Pippen's memorandum was published in the *Federal Register* Jan. 28 (47 FR 4066). It goes into effect immediately.

CONSTRUCTION GRANTS FUNDING BILL FOR FISCAL 1982 MOVING THROUGH CONGRESS

A supplemental appropriations bill (HJ Res. 390) providing $2.4 billion in fiscal 1982 for the sewage treatment construc-

Sewage Treatment Construction Grants Manual • published monthly by The Bureau of National Affairs, Inc., 1231 Twenty-fifth St., N.W., Washington, D.C. 20037. Telephone (202) 452-4200. Subscription $250 a year, renewal $225 a year. Second class postage paid at Washington, D.C., and at additional mailing offices. William A. Roltz, Editor in Chief; Stanley E. Hogan, Executive Editor; Patricia R. Westlen, Associate Editor. Sewage Treatment Construction Grants Manual Board of Editors: Valerie L. Brennan, Managing Editor; Jean Clarke Gomez, Budget Hunter; Patricia S. Spencer, Shirley Gilbert, Senior Legal Editor; Index Specialist L. Joseph Chief Editor; Wayne Thomas. Copyright © 1982 by The Bureau of National Affairs, Inc. All rights reserved by the copyright owner. The code at the bottom of some pages of this report indicates that copies of the pages for use beyond that permitted by Sections 107 and 108 of the new U.S. Copyright Act may be made upon payment of a 50 cent per page copy fee to the Copyright Clearance Center, Inc., 21 Congress St., Salem, Mass. 01970, or directly to The Bureau of National Affairs, Inc. ISSN 0149-5875. Printed in U.S.A.

tion grants program under the Clean Water Act is progressing rapidly through Congress.

The Senate Appropriations Subcommittee on HUD-Independent Agencies scheduled a hearing for Feb. 10 on the bill (HJ Res 390).

The House was expected to pass the measure Feb. 10. The House Appropriations Committee reported the bill Feb. 4.

The committee acted after agreeing not to fund specific projects earmarked for funding in the Municipal Wastewater Treatment Construction Grant Amendments of 1981 (PL 97-117) (News and Developments, January 25, p. 9). The amendments revised and extended the construction grants program (Title II) of the Act and are included in the supplement to this issue.

The House panel also agreed to a request by Committee Chairman Jamie L. Whitten (D-Miss) that the report on HJ Res 390 include language directing the Environmental Protection Agency not to approve large projects in small communities that are unable to finance their operation and maintenance.

HJ Res. 390 would prohibit funding for Section 206 (reimbursement and advanced construction), Section 208 (areawide waste treatment management), Section 209 (basin planning), and several specific projects named in PL 97-117.

The projects denied funding would include a sewer line connecting the New York City Convention Center with a treatment plant on Long Island, a greenhouse at a San Francisco treatment plant, facilities to purify water at a San Diego plant, a 139-acre tract at a Eureka, Calif., plant, and construction of the Rocky River, Ohio, plant.

EPA DEFERS FOUR PRETREATMENT RULES, PUTS OTHERS INTO EFFECT; COMMENTS CITED

The effective date of four general pretreatment regulations was postponed indefinitely, "pending continued analysis," and others were put into effect as of Jan. 31, under a final rule issued by the Environmental Protection Agency Feb. 1 (47 FR 4518).

The provisions deferred were the definitions of "interference" and "pass through," the combined wastestream formula, and the removal credits provision.

Regulations put into effect include those pertaining to general pretreatment prohibitions, those governing local and state pretreatment programs, and certain of those governing the implementation of the categorical pretreatment standards, including the provisions for monitoring, fundamentally different factors variances, net/gross calculations, and upsets.

As a result of the postponements, EPA said the existing definition of "interference" and the present removal credits section of the current pretreatment regulations will remain in effect.

The agency noted that the rules involved in its Feb. 1 action are part of amendments to the original general pretreatment regulations promulgated June 26, 1978, under the Clean Water Act.

The amendments resulted from a settlement agreement entered into by EPA and several environmental and industrial groups that challenged the 1978 regulations in federal court, the agency explained (*NRDC, Inc. v. EPA*, 8 ERC 2120).

Combined Wastestream Formula

An EPA official told BNA Feb. 8 the four items are being postponed largely as a result of industry complaints that they are too stringent.

He said, for example, that some industries want to be allowed under the combined wastestream formula to dilute their discharge with sanitary waste and cooling water to help meet the numerical limits of their categorical pretreatment standards. Such dilution would not have been permitted under the postponed regulation, he added.

Industry claims it will be forced to install pollution control equipment for each manufacturing process within a large plant instead of a single pollution control facility at the end of all processes in order to meet its toxic discharge limits, unless dilution is allowed, the EPA official said.

The agency originally disagreed with this view and concluded that if dilution were allowed a plant could discharge excessive amounts of toxics into a publicly owned treatment works (POTW), yet still be in compliance with its categorical pretreatment standards, the agency official noted. He indicated that industry objections to EPA and the White House led the agency to reconsider its position.

As long as the formula is delayed, POTWs are protected from toxic discharges that exceed the categorical limits only by general pretreatment provisions and local laws, most of which are weak and ineffective, the official said.

Regulatory Impact Analysis Ordered

The amendments originally were scheduled to take effect March 13, 1981, but they were postponed pending completion of a regulatory impact analysis requested under Executive Order 12291 issued by President Reagan.

Its Feb. 1 action, EPA explained, stemmed from a rule-making the agency initiated Oct. 13, 1981, to determine whether all or portions of the amendments should continue to be deferred.

The combined wastestream formula that is being postponed, EPA said, "has proved to be a highly controversial provision." Comments submitted to the agency charged that the formula "forces segregation of wastestreams and, ultimately, more costly and inefficient treatment," EPA said.

The removal credits provision, the agency said, "remains controversial," and the definitions of "interference" and "pass through" have been criticized as being too vague and as subjecting the industrial user to excessive liability.

EPA noted that many public comments labeled the proposed removal credit provision as "too burdensome and complex" and predicted it would discourage POTWs from applying for authorizations to grant the credits.

Many comments said the new definitions of "interference" and "pass through" were overbroad "because an industrial user could be held liable for a POTW violation of its national pollutant discharge elimination system permit even though the user was in compliance with applicable federal, state, or local standards," EPA added.

OMB REVIEW OF EPA FORMS INCLUDES CONSTRUCTION GRANTS CHANGE ORDER SURVEY

The Office of Management and Budget Jan. 18 sought comment on the Environmental Protection Agency's questionnaire on the effect of change orders on construction grants.

The questionnaire is being reviewed by OMB as part of an ongoing evaluation of paperwork the federal government requires the public to do. The reviews are authorized under the Federal Reports Act and the Paperwork Reduction Act of 1980.

Comments may be sent to Edward H. Clarke, Office of Information and Regulatory Affairs, OMB, 726 Jefferson Pl. N.W., Washington, D.C. 20503.

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EPA SEEKS COMMENTS ON DRAFT PAPER ON CONSTRUCTION GRANTS RULE CHANGES

A draft paper recommending revisions to the sewage treatment construction grants program under the Clean Water Act is available for public comment, the Environmental Protection Agency announced Feb. 2 (47 FR 4704).

The paper includes the proposed revision of the full regulation published Nov. 6, 1981, and amendments needed to carry out the Municipal Wastewater Treatment Construction Grant Amendments of 1981 (PL 97-117). (See related story, p. 14)

Comments on the draft may be submitted until Feb. 28 to the Director, Office of Water Program Operations (WH 546), EPA, 401 M St., S.W., Washington, D.C. Copies of the draft may be obtained from the director's office.

For further information, telephone Jane Magee of EPA at (202) 755-8253.

EPA said the Feb. 28 deadline for comments "is essential" if the agency is to have interim final regulations in place to authorize grant making in the event of an appropriation for the 1982 fiscal year.

EPA AMENDS CONSOLIDATED PERMIT RULES FOR STORAGE CONTAINER AREAS, WASTE PILES

Amendments to the consolidated permit regulations will exempt owners and operators of hazardous waste facilities who apply for a permit to manage solids in containers and waste piles from containment system requirements if they can demonstrate that the waste does not contain free liquids.

Moreover, the amendments, adopted by the Environmental Protection Agency November 6, 1981, and included in the supplement to this issue, affect section 122.25, which establishes the information required to be included in Part B of the permit application. The amendments also waive the containment system requirements for all container storage areas holding only solids, provided that the containers are protected from contact with accumulated liquid such as precipitation that could corrode and deteriorate metal containers, as well as containers holding solids from the calculation of 10 percent containment system capacity.

SUPPLEMENT 54 FILING INSTRUCTIONS

NOTE: The instructions below should be followed carefully. The boldface headings on the left correspond to the yellow tab sections in the Sewage Treatment Construction Grants Manual binders. Obsolete pages in your service are listed in the column headed "Take Out Pages." New and replacement pages in this supplement are listed in the column headed "Put In Pages." It is important to follow instructions in both columns.

Retain this issue of News and Developments behind Tab Section 11 in Reference Binder 1 immediately behind the previous month's News and Developments. Check the issue number at the top of this issue against the previous issue to be certain your service is complete.

	Take Out Pages	Put In Pages
REFERENCE BINDER — 1		
61 — STATUTES		
Federal Water Pollution Control Act, As Amended By The Clean Water Act of 1977		
(Amends citation)	61-1001, 61-1002	61-1001, 61-1002
(Revises Sec. 201(g)(1), amends (k), adds (l) — (o), amends 202(a)(1), (3), (4), adds editor's note, amends (203(a), 204(a)(3), (6), adds (c) and (d), designates 205(c)(1), adds (2), amends (c), (g)(1), (4), adds (j), (k), amends 207, adds editor's note, amends 211(c), 212(1), adds 218, 219, repeals 401(b)(2)(B), amends (h), (b)(7), deletes (8), amends (i), revises (g)(1)(A), adds editor's note to 404(c), adds 404(d)(1))	61-1013, 61-1014	61-1013, 61-1014.1
(Amends 511(b)(1), (2)(A), (3), (4)(B))	61-1041, 61-1042	61-1041, 61-1042
(Adds editor's note to 516(b), adds Sec. 26 of PL 97-117)	61-1067, 61-1074	61-1067, 61-1074
71 — REGULATIONS		
Tab Section Contents (Revision)	71-0001, 71-0002	71-0001, 71-0002
EPA Consolidated Permit Program Regulations (40 C.F.R. 122)		
(Amend citation, authority, etc.)	71-0801, 71-0802	71-0801, 71-0802
(Adds new 122.25(b)(1)(ii) and redesignates former (ii) and (iii) as (iii) and (iv), revises 122.25(b)(4))	71-0821, 71-0824	71-0821, 71-0824.1
11 — NEWS AND DEVELOPMENTS		
File this issue of News and Development behind Tab Section 11 in Reference Binder 1 immediately behind the previous month's issue.		

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

(37)

MAR 26 1982

Mr. John J. Garner, P.E.
Sanitary Engineer
County of Cuyahoga
75 Public Square
Cleveland, Ohio 44113

Dear Mr. Garner:

Congressman Mottl has asked that I respond directly to your letter to him dated February 5, 1982, concerning this Agency's position that the Rocky River Wastewater Treatment Plant, originally funded as a research and demonstration project, is ineligible for funding under the "reimbursable provisions" of section 206(a) of the Clean Water Act.

The present position that the Rocky River Plant is ineligible for reimbursement is based on two issues: the fact that construction of the project was initiated in October 1972 and the Agency's legal interpretation of section 206(a). That interpretation, based on the legislative history of the Clean Water Act of 1977 which amended section 206(a), is that a project on which construction was initiated between July 1, 1972, and July 1, 1973, must have received a grant under section 8 of the Federal Water Pollution Control Act as amended by Public Law 84-660 in order to be considered eligible for reimbursement.

Even if construction of the Rocky River project had been initiated prior to July 1, 1972, it could not have qualified for reimbursement because the legislative history of the Federal Water Pollution Control Act Amendments of 1972 indicates that the intent of section 206(a) was to reimburse those communities which had prefinanced a portion of the Federal share of the eligible cost of constructing waste treatment facilities in reliance upon section 8(c) of the Federal Water Pollution Control Act. Rocky River, as you know, received its assistance under section 6.

Initiation of construction as used in this letter means the issuance to a construction contractor of a notice to proceed, or if no such notice is required, the execution of a construction contract.

Our position on the reimbursement status of this project has nothing to do with the technology employed by the Rocky River project or whether the project did, or did not, meet the general conditions of Section 8. The position is based solely on what we believe to be the restraints placed on us by the present legislation. The matter is further complicated by the fact that Congress has specifically forbidden the use of any funds for reimbursement unless specifically appropriated for that purpose.

It is our understanding that Congressman Mottl is continuing to work on resolving this matter and we are ready to assist him in any way we can.

Sincerely yours,

John W. Hernandez, Jr.
Deputy Administrator

(38)

COUNTY OF CUYAHOGA

Commissioners
Virgil E. Brown
Vincent C. Campanella
Edward F. Feighan

John J. Garner, P.E.
Sanitary Engineer

October 18, 1982

Mr. Richard Sullivan
Committee on Public Works
and Transportation
Rm. 2165, Rayburn Bldg.
Washington, D.C. 20515

Re: Reimbursement for Unsuccessful Activated Carbon Process Construction for the Rocky River Wastewater Treatment Plant

Dear Mr. Sullivan:

As you probably know, Cuyahoga County, despite the excellent efforts of Congressmen Ronald Mottl and Louis Stokes, has been unable to obtain the referenced reimbursement. We had hoped that the dialogue between Congressman Mottl and Congressmen Roe and Hammerschmidt, as contained in the attached House Congressional Record of December 16, 1981, Page H 9829, would have clarified Congress' original intent in this matter. Unfortunately, as indicated by the attached copy of my letter to Congressman Mottl on February 5, 1982, and the attached copy of USEPA Deputy Administrator John W. Hernandez, Jr.'s letter to me, dated March 26, 1982, the USEPA is still taking the position that a project receiving a research grant under Section 6 does not qualify for the additional 50 or 55 percent reimbursement that we feel we are justified in obtaining.

The crux of the matter continues to appear to be "congressional intent" at the time P.L. 92-500 was enacted in 1972. We would appreciate very much if you could clarify from the congressional staff perspective, with copies of any documents that would be applicable, that such Section 6 projects were not intended to be excluded from such reimbursement.

The attached documents are in addition to the documents I transmitted to you by letter dated December 1, 1981, on this subject.

I would be very happy to send you any documents, or to meet with you at your convenience, regarding this matter.

Thank you for your continued interest and cooperation in this matter.

Very truly yours,

John J. Garner

JOHN J. GARNER, P.E.
Sanitary Engineer

grant, alone, our subcommittee has proposed a number of changes which have yet to be put forth in legislative form. They include:

Consideration of alternative sources of funding.

Additional measures to increase the responsibility of grantees, such as withholding of a grant until the applicant operates any existing facilities with maximum efficiency, and withholding 20 percent of grant funding until a new facility performs as intended.

A strengthened role for the Environmental Protection Agency's Office of Inspector General in rooting out waste, fraud, and abuse.

Clearer and tighter lines of responsibility and accountability in the performance of design engineers, through such approaches as turnkey projects and reduced Federal interference in the design of facilities.

As I said, many of our oversight recommendations have yet to be formally offered on the assumption that the entire act will be reviewed again next year. But the extent to which our findings parallel the position taken by the conferees on the issues we both addressed suggests that our remaining recommendations—and earlier ones arising from our examination of the regulation of toxic pollutants—should find a receptive audience.

Meanwhile, I urge adoption of the conference report.

Mr. HAMMERSCHMIDT. Mr. Speaker, I reserve the balance of my time.

Mr. ROE. Mr. Speaker, I yield such time as he may consume to the gentleman from Ohio (Mr. MOTTL).

Mr. MOTTL. Mr. Speaker, I certainly appreciate the distinguished subcommittee chairman yielding at this point.

Mr. Speaker, I would like to ask the distinguished chairman of the Subcommittee on Water Resources (Mr. ROE) a question with regard to the construction grants program.

In my district the four communities of Rocky River, Bay Village, Fairview Park, and Westlake built a sewage treatment plant with EPA guidance. However, when this "pilot program" plant was completed, it turned out that it did not operate properly. The plant, when finally completed with design modifications will serve about 80,000 residents. The attempts on the part of local communities to receive reimbursement from EPA go back many years. They have been unsuccessful because of EPA's contention that the project, since it involved experimental technology, is not a normal construction grant project. I ask the gentleman's opinion as to whether or not this project is qualified for reimbursement under the act.

Mr. ROE. Mr. Speaker, in response to the gentleman's inquiry, in my opinion the four communities are eligible for reimbursement. We have in [illegible] the statement of managers urging the appropriation of funds to implement section 206 which provides for reimbursement of local interests when they perform work with their own money in accordance with requirements of the act. The project which the gentleman mentions is certainly the type of project which should be eligible upon the appropriation of funds, and we shall certainly do all we can on behalf of the State of Ohio.

Mr. HAMMERSCHMIDT. Mr. Speaker, will the gentleman yield?

Mr. MOTTL. Yes, I yield to the distinguished gentleman.

Mr. HAMMERSCHMIDT. Mr. Speaker, I want to associate myself with the remarks of our distinguished chairman in support of his response to the question of the gentleman from Ohio.

Mr. MOTTL. I, thank the distinguished subcommittee chairman, also the full committee chairman, the gentleman from New Jersey (Mr. HOWARD), also the gentleman from Arkansas (Mr. HAMMERSCHMIDT), and the gentleman from California (Mr. CLAUSEN) for their cooperation.

Mr. ROE. Mr. Speaker, I yield 3 minutes to the distinguished gentleman from California (Mr. ANDERSON), a member of the committee.

Mr. ANDERSON. Mr. Speaker, I rise in support of the conference report on H.R. 4503, the Municipal Wastewater Treatment Construction Grant Amendments of 1981. I also wish to commend subcommittee chairman ROBERT ROE and ranking member JOHN PAUL HAMMERSCHMIDT for a job well done.

One of the provisions in the conference report on H.R. 4503 is of particular interest to me. This is section 4 which provides that the Administrator of EPA shall make a grant, from any funds otherwise allotted to the State of California, to the city of San Diego in connection with that city's aquaculture sewage process.

Nearly 100 percent of San Diego's water is imported. The high cost of this water together with the diminishing supply of ground and river water led San Diego to the planning of a wastewater-to-potable water recycle system. This system which will use vascular plants and reverse osmosis technology will result in the production not only of treated sewage effluent but of potable water. The production of potable water will not only help meet the water supply needs of the region but will result in a more economical system.

This type of innovative and alternative technology is important not only to San Diego but to other communities throughout the Nation which are facing water supply problems. The encouragement of this type of project is directly in the national interest. It represents the type of innovative and alternative technology which must be pursued so that we may truly achieve the optimum yield from our finite water resources.

Mr. ROE. Mr. Speaker, I yield 2 minutes to the distinguished gentleman from California (Mr. PANETTA).

(Mr. PANETTA asked and was given permission to revise and extend his remarks.)

Mr. PANETTA. Mr. Speaker, I, too, rise in support of this legislation. I think it is extremely important to maintain our commitments that have been made over the years in this area. With regard to that, I would like to speak to one particular project.

The agricultural irrigation demonstration project in Castroville, Calif., is unique. It is the only program in the United States utilizing secondary treated municipal waste water for commercial crop irrigation. The benefits of this program are twofold. It reduces the demand on precious limited water resources and by reducing the overdraft of the local ground water supply helps to combat the increasing threat of salt water intrusion into the agricultural producing areas along Monterey Bay.

Earlier this year some questions were raised over the use of construction grant funds for the agricultural irrigation demonstration project. Clearly use of these funds for water reclamation and reuse purposes serves the objectives and intent of Congress in creating the construction grants program. To prohibit further assistance for this project would be a tragic step backward from our national commitment to the innovative and creative conservation of our precious water resources.

The agricultural irrigation demonstration project serves to demonstrate that a lesser level of treatment than that which may be provided by a Monterey regional wastewater treatment plant, provides acceptable public health protection. It also demonstrates to local farmers and local public health officials that reclamation does not adversely affect crops or soils in the project area. Finally, the program demonstrates that crops so irrigated are marketable and acceptable to the public.

I would like to briefly review for you the project's progress over the past few years. In March of 19[illegible] a 2-year study was completed in [illegible] concept of the demonstration [illegible] was examined, a work plan [illegible] site selected, and [illegible] signs and environmental [illegible] completed. Between 19[illegible] and [illegible] and construction of the [illegible] treatment plant and [illegible] and preparation of [illegible] and purchase of [illegible] was completed. The operation [illegible] of the project has [illegible] which treated wastewater [illegible] used to irrigate [illegible] circumstances to [illegible] the effects. Aft[illegible] this signs [illegible]

Mr. ROE. We would like to have from you, then, your view. The good Congressman spoke to $1.3 million, but Mr. Martin, you have another view. It is a 25-year-old bond issue, the full faith and credit of the city was placed on the line, you have paid this much back, the interest rate was so much, and the rest of it. And that is what you need the remedy to, isn't that what you are asking us to do?

Mr. EARL MARTIN. Right.

Mr. ROE. Give us that data, and we will go to work on it.

Mr. ROE. I do recall the instance on the floor, I remember the discussion in conference on this issue, and I am rather shocked it has gone in that direction. Why not give us that data then. We will need specific language though to help to remedy the situation and cure the problem, and we will need specific legislative language directing it be done.

We need other backup data from you, of course. So if you would submit that at your earliest possible convenience and we will by unanimous consent, with no disagreement, make that part of your formal testimony as of today.

The Chair recognizes the gentleman from Minnesota.

Mr. STANGELAND. One question on the failure of the plant to work. Has it been established beyond a shadow of a doubt that it was just a technology that was unworkable? Was it a problem in the design? Problem in the construction? Or was it just a theory or concept of EPA that proved to be totally unworkable?

Mr. EARL MARTIN. The concept was used for years as tertiary treatment. As secondary, it was an innovative process. The sludge coming through the primary treatment plant was too heavy for the carbon filters. So they blocked immediately. They were so heavy, they couldn't backwash them.

It still is a successful process for tertiary. It just didn't work without prefiltering.

Mr. ROE. Would the gentleman yield? Simply because we don't know, could that plant be upgraded to perform tertiary treatment? You are building the secondary plant now, I assume in the same area roughly speaking?

Mr. EARL MARTIN. Yes.

Mr. ROE. The question is—as the gentleman is developing it—would the process have worked if there had been a secondary treatment and then go to your tertiary?

Mr. EARL MARTIN. We have had engineers out of this area look at it, and they have indicated that the plant is not functional in that respect because it would need prefiltering which we cannot supply.

Mr. ROE. OK. You could have them—if the gentleman would yield further—you could have, I assume, and it would be helpful in your testimony, a report from the engineers to you saying for whatever reasons, technically that that plant that didn't work could not be made workable—see what I am driving at—so we can close the cycle technically is what I am trying to do.

[The information received follows:]

REPORT TO THE BOARD OF CUYAHOGA COUNTY COMMISSIONERS CLEVELAND, OHIO ON THE EVALUATION OF EXISTING ROCKY RIVER WASTEWATER TREATMENT FACILITIES

August 17, 1977

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August 19, 1977

Board of Cuyahoga County Commissioners
Division of Sanitary Engineering
75 Public Square
Cleveland, Ohio 44113

Attention: Mr. Stephen Sebesta
County Sanitary Engineer

Gentlemen:

Submitted herewith is our report on the evaluation of the existing Rocky River Wastewater Treatment Facilities. This evaluation, the last element of our work, has been prepared in accordance with our agreement dated July 19, 1976 as supplemented January 18, 1977. As you are aware, the majority of our efforts have been directed towards the R,D&D project and related construction administration advice to the County. Earlier letter reports on these other elements of our work are contained in appendices.

The major conclusions and recommendations of this report are as follows:

Conclusions:

1. The existing wastewater treatment facilities at Rocky River are inadequate to handle present sludge production and to provide secondary treatment for the existing wastewater flows.
2. Major modifications and upgrading of these facilities are required to provide adequate sludge handling and reliable secondary treatment.

INVESTIGATIONS • REPORTS • DESIGNS • ADVICE DURING CONSTRUCTION • ADVICE ON OPERATION
PLANNING • VALUATIONS • LABORATORIES • RESEARCH

3. Development of necessary modifications, including pilot plant work, is eligible for funding under Public Law 92-500. The upgraded facilities should include provision for plant expansion to serve the projected needs of the area.

Recommendations:

1. Prepare and submit an amendment to the scope and schedule of work for the Facilities Planning grant as outlined herein.

We would be most happy to meet with you and discuss the details of this report.

Very truly yours,

METCALF & EDDY, INC.

Francis D. Sampson

ACKNOWLEDGMENTS

We wish to acknowledge the assistance and full cooperation extended by the administrative and plant operating staff of the Office of the County Sanitary Engineer, Mr. Stephen J. Sebesta.

Cover photo and Figure 5 are by Mr. Paul Beck of the Office of the County Sanitary Engineer.

INTRODUCTION

Purpose

Cuyahoga County operates a wastewater treatment facility located in Rocky River which treats the waste from the cities of Bay Village, Fairview Park, Westlake and Rocky River. The process consists of an IPC (independent physical/chemical) treatment system, parts of which were designed and constructed under a R,D&D (Research, Development, and Demonstration) grant from the Environmental Protection Agency. The R,D&D project has been concluded (See Appendix A) and for the most part is not being operated. The operating portions of the plant are currently providing an intermediate level of treatment including phosphorus removal before discharge to Lake Erie. The County is required to upgrade the level of treatment to "secondary" under a permit issued under the National Pollutant Discharge Elimination System (NPDES) program.

The purpose of this report is to present an evaluation of the existing facilities and to outline certain actions necessary to satisfying final NPDES discharge requirements. It is expected that this report will serve as a basis for developing modifications and expansion to the existing facilities to serve the long range needs of the entire service area under Facilities Planning.

Scope

The scope of work consisted of a review in detail of all past correspondence, reports and other available information on

the existing facilities and the R,D&D project to the extent practicable; on site visitations by specialists, consultation with the County staff, representative of Schade and Associates and representatives of EPA.

The results of our evaluation of existing facilities are contained in the following report. Letter reports covering other aspects of our work are contained in the appendices. This report is not intended to satisfy all the requirements of facilities planning under PL 92-500 and certain modifications presented herein must be reviewed in the light of the long range needs of the service area.

DESCRIPTION OF EXISTING FACILITIES

General

The existing wastewater treatment facilities at Rocky River are shown in Figure 1. The original primary plant was abandoned and a new intermediate plant designed and built in 1959-1963. The "intermediate" level of treatment consists of chemical coagulation, settling and chlorination. The carbon adsorption system and other improvements to the existing facilities were completed in August of 1975. Major facilities constructed under the R,D&D project are those associated with carbon adsorption. A description of the plant performance has been presented*. The facilities shown in Figure 2 "as operating" provide an "intermediate" level of treatment with chlorination prior to discharge. The modifications to the pretreatment and to the flocculation-sedimentation tanks which were installed under the R,D&D project, are continuing to operate.

The intermediate treatment facilities were designed for an average flow of 16 mgd (million gallons per day). The carbon adsorption system was designed for an average of 10 mgd and a peak of 20 mgd. Present flows average 9-10 mgd, with reported peaks during rainfall in excess of 50 mgd.

With reference to Figure 2, raw sewage enters the plant through several interceptors that empty into a single influent

*"Full Scale Use of Physical/Chemical Treatment of Domestic Sewage at Rocky River, Ohio" presented at the Water Pollution Control Conference, Minneapolis, St. Paul, October 5, 1976.

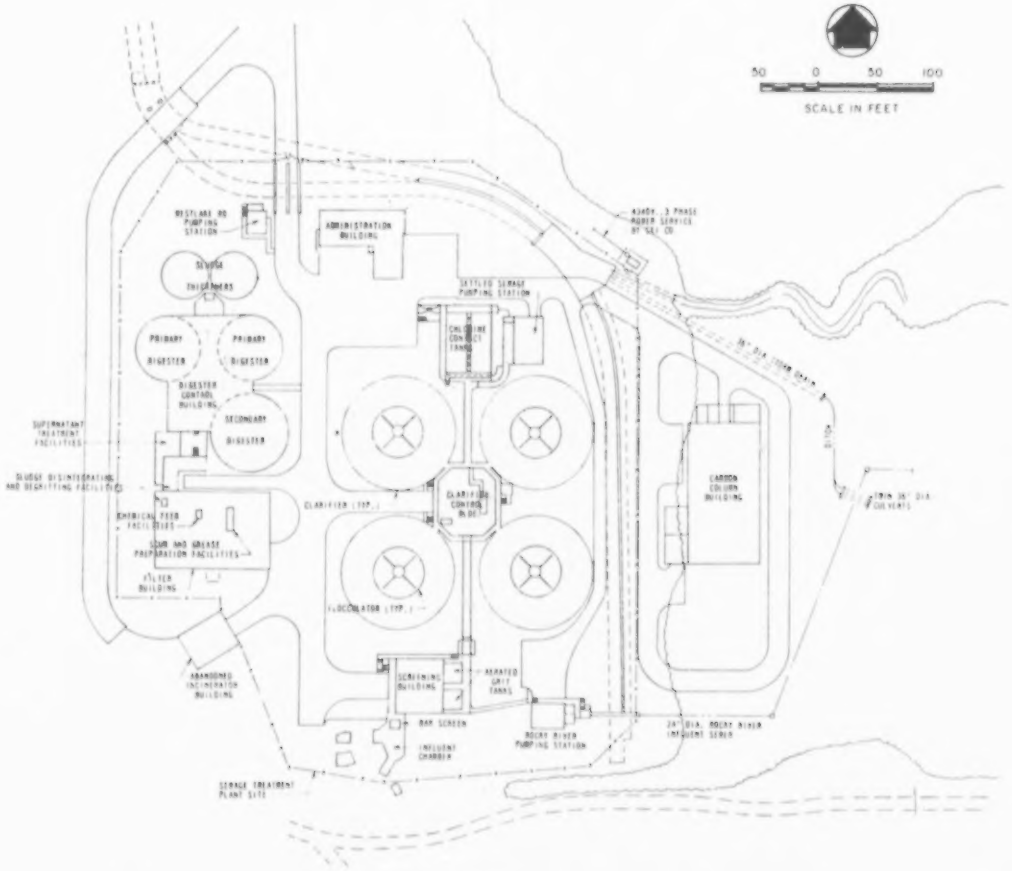


FIG. 1 SITE PLAN

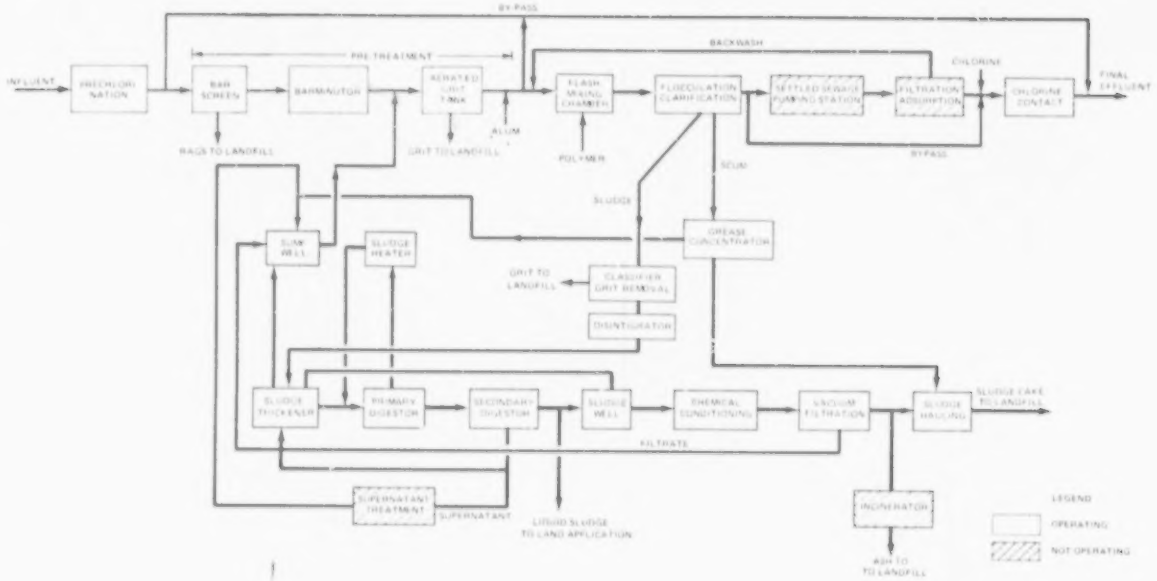


FIG. 2 EXISTING PROCESS DIAGRAM

chamber. There is an existing 54-inch bypass line that connects this influent chamber with the plant outfall downstream of the chlorine contact tank and Parshall flume.

Pretreatment

Pretreatment consists of two parallel trains consisting of Parshall Flume flowmeters, mechanically-cleaned screens, barminutors and aerated grit chambers.

The mechanically-cleaned screens are Jeffrey Catenary units with 2-1/2-inch clear openings between bars. The screens are located outside. The solids are discharged via a belt conveyor to a 2-1/2 to 3 cubic yard storage container.

Two barminutors are installed in the north pretreatment path and a single, larger barminutor, is installed in the south path. A Parshall flume is installed on each train just downstream of the barminutor.

The aerated grit chambers are equipped with a bottom screw conveyor and bucket hoist.

Coagulation/Clarification

The flow passes from the pretreatment facilities via an open channel to a distribution chamber located in the middle of the Clarifier Building. Flash mixing equipment is located in the distribution chamber. This mixing equipment is not being used. Instead, alum is added to the flow just before the grit tank overflow weir and polymer are added in the distribution chamber of the clarifiers.

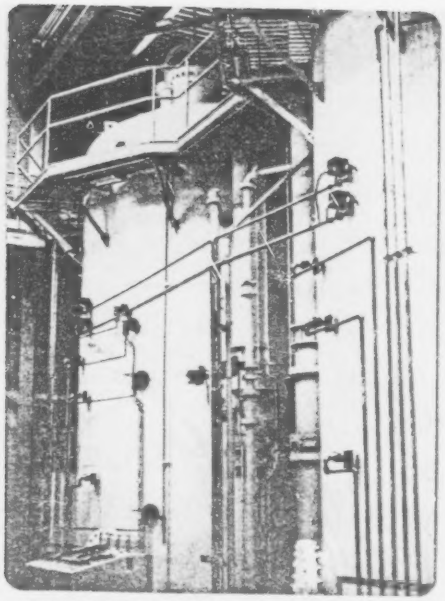
The flow passes from the distribution chamber to four center feed, circular clarifiers (Figure 3) which are provided with flocculation facilities. These units originally contained preaeration equipment in the center section, however, this was removed during the latest construction program and flocculators were added.

The chemically coagulated, settled effluent is collected in an open channel and can be directed either to the chlorine contact tank or to the settled sewage pumping station and then to the carbon columns.

Filtration/Adsorption

The first component of the filtration/adsorption system, the settled sewage pumping station, contains two Gould horizontal double suction centrifugal pumps with space for a third pump. Each pump is driven by a 500-hp (horsepower) wound rotor motor with variable speed controls. The pumps are fitted with automatically controlled, cylinder operated butterfly valves and discharge to eight, rubber lined, carbon steel columns. The flow is metered by a master flow tube and is distributed by individual rate of flow controllers to each column. As shown in Figure 4 and 5 the eight carbon contact columns are each 16 feet diameter and 30 feet-8 inch high. Each column contains a 15 foot depth of granular activated carbon.

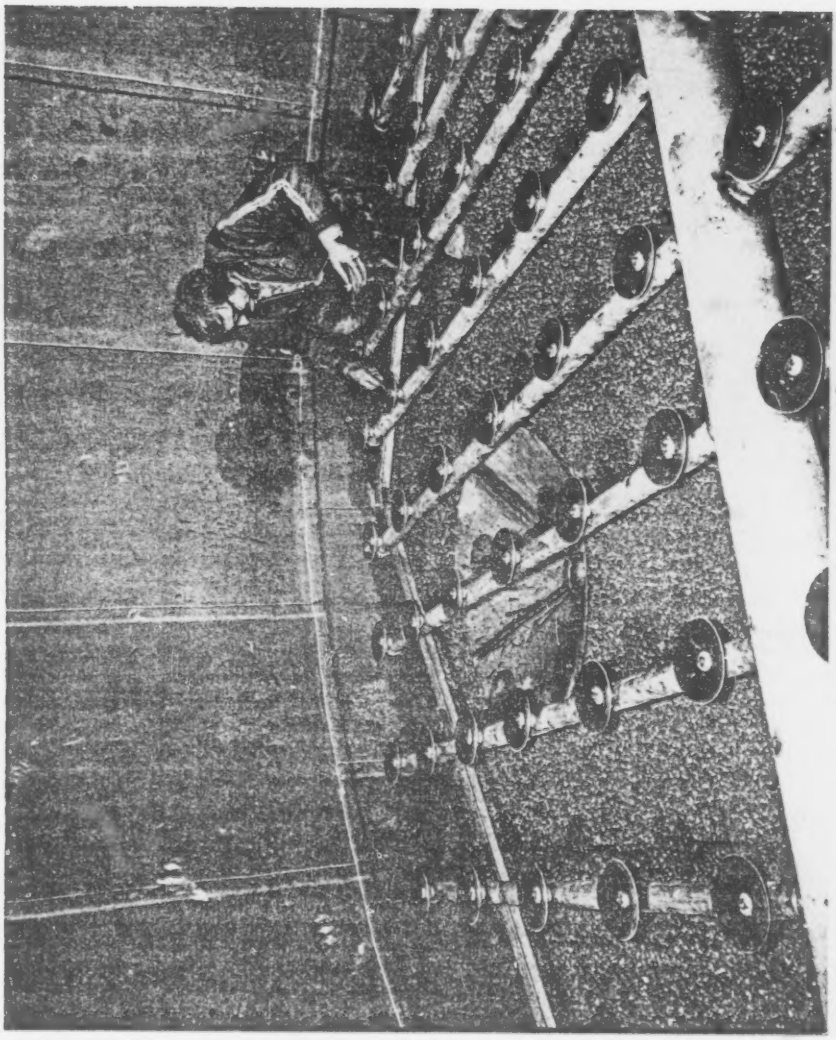
Multiple layers of gravel are located under the carbon and are supported by a Leopold tile underdrain system. Each



EXTERIOR OF CARBON COLUMNS - TYPICAL

WEST VIEW - CARBON COLUMN BUILDING
CLARIFIERS IN VIEW FOREGROUND

FIGURE 3



GRAVEL SUPPORT AND AIR SCOUR SYSTEM

FIGURE 5

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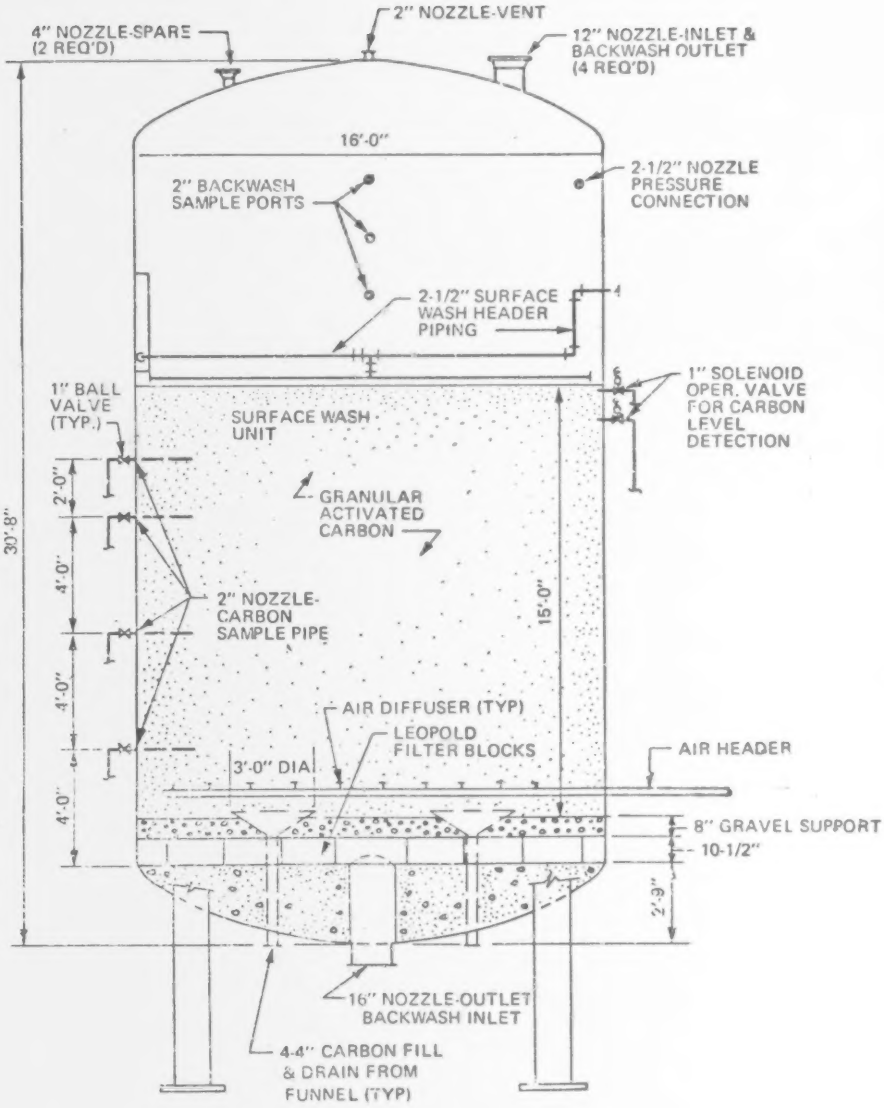
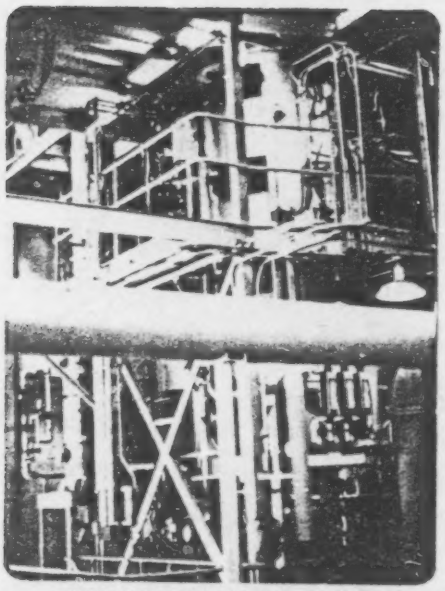
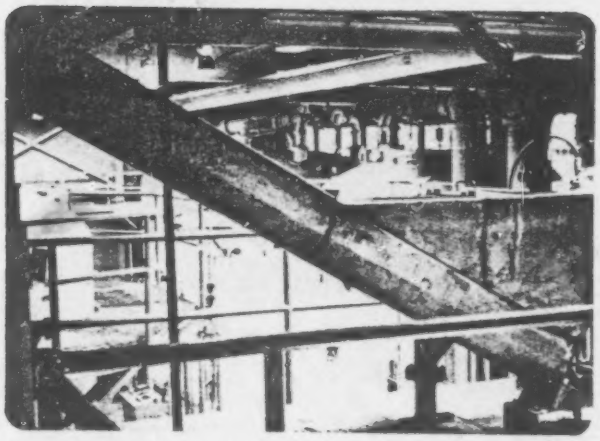


FIG. 4 CARBON FILTER - ADSORBER COLUMN



CARBON REGENERATION FURNACE



INTERIOR OF CARBON BUILDING -
SPENT CARBON SCREW CONVEYOR FEED TO REGENERATION FURNACE IN FOREGROUND

FIGURE 6

carbon contact column is provided with a rotating surface wash system located above the carbon and an air scour system which is located just above the support gravel. Carbon is removed from the column through four funnels that project through the gravel base. The air scour system consists of an 8-inch stainless steel air header with 10, 2-inch branches. Air diffusers are Eimco Type P nonclog diffusers spaced on 16 inch centers on the 2-inch branch pipe.

Associated with the carbon contact columns are a spent carbon storage bin, a regenerated carbon storage bin, a carbon regeneration furnace, associated pumps and equipment.

The carbon regeneration furnace (Figure 6) is a 6 foot outside diameter 5 foot inside diameter, eight hearth BSP furnace with an afterburner for odor control and a wet scrubber for particulate material.

Backwash and surface wash pumps utilize filtered effluent. The surface washwater passes through a Simplex, manually-cleaned strainer.

Motive water for carbon transfer is also taken from the filtered effluent.

Chlorination

Prior to discharge the effluent flows to two parallel chlorine contact tanks then to a Parshall flume and into a 1,500-foot outfall to Lake Erie.

Sludge Handling

Waste sludge is pumped from the flocculation-clarification process through a cyclone degritter and disintegrator into two gravity thickeners.

Thickened sludge may be pumped to either of two primary digestion tanks with fixed covers and then to a secondary tank with a floating cover, or directly to a sludge well preceeding the vacuum filtration process.

Supernatant from the digesters can be recycled for treatment in an aeration tank that is equipped with a submerged turbine aerator. Mixed liquor is clarified in a rectangular settling tank with return sludge and waste sludge pumped by an air lift pump to a division box.

Digested sludge or raw sludge is dewatered on two 8 foot by 8 foot Eimco Belt vacuum filters. Vacuum for both filters is furnished by a central vacuum system, employing lobe-type vacuum pumps.

The existing 13 foot-9 inch multi-hearth incinerator is not operating. Dewatered sludge cake is discharged to containers and hauled to landfill on a contract basis. Alternatively, all or a portion of digested liquid sludge is hauled and applied to farm land, also on a contract basis.

PROBLEM AREAS

General

As noted earlier, the R,D&D project has been concluded (Appendix A) and the carbon filtration-adsorption process associated with that project is presently not operating. However, the following discussion of problem areas is in the context of all the existing facilities shown in Figure 2.

The conclusion and shutdown of the R,D&D project is the direct result of the failure of the carbon filtration/adsorption system. Therefore, certain problems with this system must be corrected before these facilities can be placed back in operation. Further, the entire existing waste treatment system at Rocky River should be evaluated in light of the long-range needs of the service area.

Major problems surfaced in connection with the R,D&D project which caused the County to question its continuation. These problems have been described elsewhere* and consist of intermittent severe odor problems in the effluent from carbon columns, inability to process the entire design flow (10 mgd average/20 mgd peak), deterioration of the air scour system, major losses of carbon, inability to manage the sludges produced within the entire treatment system and failure of the carbon column rubber lining system.

*"Full Scale Use of Physical/Chemical Treatment of Domestic Sewage at Rocky River, Ohio" presented at the Water Pollution Control Conference, Minneapolis, St. Paul, October 5, 1976.

The major problems noted above are symptoms of other problems, some of which are process considerations, others equipment limitations. Even with the R,D&D project terminated certain problems persist, most notably in the area of sludge handling and disposal.

In the following sections, specific problems are discussed. Subsequent sections deal with the recommended actions to be taken by the County. A preliminary schedule and the financial implications of these recommendations are also presented.

Process

The major process problems can be summarized as follows:

1. Lack of backwash water equalization facilities and standby carbon adsorbers.
2. Inadequate sludge management system.
3. Combined filtration/adsorption in a deep carbon bed.

These are discussed sequentially and in detail in the following sections.

Originally, it was expected that each column would be backwashed at 15 to 20 gpm/sq. ft. (gallons per minute/square foot) or 3,000 to 4,000 gpm for 10 to 15 minutes and that backwashing would occur at periods of low flow (night shift).

During one week in February, backwash water use increased to approximately 4,000 gpm for 30 minutes while the air scour system was operated for 10 to 15 minutes per column each day. It was also necessary to backwash during the day shift with supervisory personnel.

As originally contemplated, the total daily waste washwater recycle volume (assuming daily backwash) for eight columns would be 240,000 to 480,000 gallons. At the required higher rates the recycled volume was approximately 1,440,000 gallons. This amounted to an increase of from 2.4 percent of the 10 mgd average daily flow to 14.4 percent.

The effect of backwashing at a rate of 4,000 gpm (5.76 mgd) on the performance of the clarifiers is significant. Data from operation of the coagulation/clarification facilities prior to buildup of solids in the system and increased backwash requirements, showed these facilities capable of producing suspended solids concentrations in the acceptable range of 30 to 50 mg/L (milligrams per liter). With the increased backwashing requirements clarifier surface loadings increased from design average of 600 and maximum of 1,200 gpd (gallons per day) per square foot to 900 to 1,500 gpd per square foot, respectively, if backwashing were not performed at night. These maximum rates are above commonly accepted design limits. The high average rate and more importantly, the surges in flow result in significant carry-over of suspended solids to the carbon system, a critical matter in combined filtration and adsorption. This problem is aggravated further at Rocky River when, during periods of rainfall, flows of 50 to 60 mgd have been reported.

More significantly, the carbon column surface loading rates increase from 4.3 gpm/sq. ft. design average values with

all eight columns on line up to 7.8 gpm/sq. ft. design average values with seven columns on line (i.e., one in backwash). At the peak design flow of 20 mgd flow the loading rate on seven columns is 12.8 gpm/sq. ft.

Similarly, the empty bed contact time is 26 minutes, if all eight columns are on line at an average design flow of 10 mgd. Recycling waste backwash water with seven columns on line, the contact time would be reduced to 14.4 minutes.

Accepting, for the moment, a maximum surface loading of 8.6 gpm/sq. ft. and recognizing that backwash requirements (and recycle load) are a function of solids loading, the impact on capacity resulting from lack of backwash equalization and standby adsorbers can be significant as shown in the following:

> Assume two (2) columns out of service, one under backwash and one in regeneration. The maximum hydraulic capacity of the remaining six (6) columns at the design rate of 8.6 gpm/sq. ft. is 14.8 mgd. With 5.76 mgd recycle, the rated maximum capacity for sewage flow is 9 mgd versus the 20 mgd design. Nominal capacity becomes 4.5 mgd versus the 10 mgd design average.

The foregoing is for example only and to illustrate the need for equalization and standby adsorbers.

The additional solids to the carbon system produced primarily by inadequate sludge management necessitated more frequent and lengthy backwashing. This has aggravated many other problems.

The results of inadequate sludge management during the operation of the carbon facilities has been documented elsewhere.* Simply stated, more sludge was produced than removed from the system.

Sludge management consists of processing sludge and arranging for its ultimate disposal. As shown in Figure 2, three options for disposal are available: incinerator ash to landfill, sludge cake to landfill and digested liquid sludge to land application. The choice of one option over another is principally economic, environmental constraints notwithstanding. The incinerator option is unavailable due to mechanical problems as outlined later.

Experience at Rocky River and elsewhere has indicated that vacuum filter yields 2 to 3 psf/hr (pounds per square foot per hour) are typical for chemically (alum) coagulated sludges versus the expected 6 psf/hr. In that most of the solids are generated in the coagulation/clarification step, the problem of additional sludge handling persists even with the carbon system out of service. At reported sludge production, which compares favorably with estimated quantities, the vacuum filters should be operated three shifts per day, five days per week to keep pace. This would not allow for downtime. Equipment, repair, insufficient sludge cake storage and lack of operating personnel has reduced vacuum filter operating significantly in the past and resulted in buildup of solids inventory.

*"Full Scale Use of Physical/Chemical Treatment of Domestic Sewage at Rocky River, Ohio" presented at the Water Pollution Control Conference, Minneapolis, St. Paul, October 5, 1976.

Land application of liquid sludge has shown recent promise of providing backup capability to catch up with production reportedly at reduced costs, compared with sludge cake to landfill. However, either way, sludge disposal costs remain quite high.

A reevaluation of combined carbon filtration/adsorption is warranted under facilities planning, especially from a system subject to inflow. As discussed earlier, surges due to inflow cause upsets in the quality of the settled effluent of the chemical coagulation process thereby imposing additional solids loads on the downstream systems.

As shown in Figure 4, filtration/adsorption is accomplished within 15 feet of granular activated carbon. A critical design and operating parameter for wastewater filtration is the length of filter run. All other things being equal, the length of run is a function of the solids concentration, hydraulic loading rate and the range of operating pressure.

As solids build up in the filter, pressure loss increases to some predetermined maximum whereupon backwashing commences.

Due to the excessive solids load described earlier, and in order to attain reasonable filter runs, the system was operated at differential pressures across the carbon of more than 30 psi* (pounds per square inch) versus the intended 5 psi. At the higher operating pressures, solids are driven deep into the filter. It is imperative that a wastewater filter be thoroughly backwashed

*Note: Pressure gages ineffective due to plugging with carbon.

to remove accumulations of solids. However, in a deep filter packed with solids, effective backwashing is difficult at best. Organic solids not removed in backwashing provide added support for biological growth and formation of H_2S odorous conditions.

Experience on wastewater filtration (1 to 4 feet of single, dual or mixed media) in conventional systems has shown maximum hydraulic loading rates of 6 to 8 gpm per square foot produce reasonable filter runs, control odors and minimize backwash requirements. Given the solids loading from a frequantly overloaded coagulation/clarification step and using combined filtration/absorption in a deep bed, design hydraulic loadings in excess of 6 gpm/sq. ft. seem unadvisable. Based on these lower (6 versus 8.6) maximum rates then derating of the nominal capacity of the existing filters would result even with equalization and standby adsorbers. It is obvious the extensive pilot work is required to establish a basis of design for the combined filtration/adsorption system at Rocky River as discussed subsequently.

Equipment Problems

The following is a description of the mechanical, electrical and other problems listed during our inspection and of the existing facilities. These will be described by treatment system.

Pretreatment. The mechanically-cleaned screens and conveyors are located outside and freeze-up during winter operation. Infra-red heaters have been installed above the belts, but the problem remains.

The screen high level alarm is a local alarm only. It is not connected to an area that is alway attended.

The screening building is poorly ventilated and considerable corrosion is in evidence.

There is no interconnection between the two parallel pretreatment trains. If one unit is out of operation the entire train is lost.

Both pretreatment systems are used during storm flow only. At peak flows head loss across the mechanically-cleaned screens is reported to be 2 feet and another 18 inches across the barminutors. The head loss across the barminutor causes so much turbulence that it affects the mechanical float of the Parshall flume.

The bubbletubes for automatic operation of the screens are copper tubing and subject to damage.

The uninsulated standby generator engine exhaust creates a safety hazard.

The aerated grit chambers are not optimal in regard to grit removal. Consideration should be given to abandonment when upgrading in view of the redundant grit removal system available on the primary sludge system.

Coagulation/Clarification

The existing coagulation/clarification facilities (originally primary clarifiers) are designed for an average of 16 mgd. To provide good solids capture and phosphorus removal maximum overflow rates should be 1,000 to 1,200 gpd, including

recycle. Neglecting recycle, these facilities would be adequate for a maximum flow of approximately 20 mgd. Reported peak flows in excess of that amount can create solids carryover.

The present system of alum addition consists of a small diameter pipe with small orifices hung horizontally above the aerated grit chamber effluent weir. While some initial mixing occurs in the fall over the weir complete mixing is not ensured. The wastewater flow then travels through a channel to a central mixing chamber between the four clarifiers. The flow in the channel is shallow and unaerated. As a result, little mixing occurs after the initial drop over the grit chamber weirs.

Within the clarifier control building a central mixing well and division box was provided in which polymers are added. This chamber is equipped with a variable speed rapid mixer. The unit is no longer used. It is reported that the power input and speed were excessive resulting in floc shearing and lower suspended solids capture.

Good mixing is important to optimize alum usage for phosphorus removal and should be reevaluated in upgrading.

Carbon Filtration/Adsorption

Settled Sewage Pumping Station. The major problem in the settled sewage pump station involves the relationship between the pump control system and the control system for distribution of flow to each of the carbon columns.

The present arrangement provides two level controllers in the wet well. One level controller controls the pump speed

and thereby the capacity in proportion to wet well level. The second level controller controls the individual carbon column rate of flow controls to evenly distribute the flow between the operating columns. Modifications to solve this problem have been designed,* but were not incorporated into the present facilities as a result of carbon shutdown.

Operating tests made during Metcalf & Eddy site inspections and subsequent field measurements by plant staff indicate that the pump rating curves understate capacity (Appendix B). Depending on the projected flows and upgraded control system, the impellers may require further trimming to reduce capacity to original design levels.

Two other problems were noted. First, there is no isolation valve downstream of the butterfly valve so that if maintenance is required on the butterfly valve, the whole carbon adsorption system must be shut down. Secondly, the arrangement of the future pump is such that the suction piping will be parallel to the shaft. This arrangement will put an unbalanced load on the pump bearings.

The building heating system is inadequate.

The booster pump on the seal water system is not needed and should be removed. The settled water pumps are double suction pumps so the packing is subject to suction pressure only.

*Change Order No. 10, May 19, 1976.

Carbon Columns

The major and most obvious problems in the carbon columns are the failure of the rubber lining and air scour system and loss of carbon through the underdrain system (See Figure 7).

The rubber lining failure has been discussed in a separate letter report (Appendix C). Modifications and expansion should consider lining systems other than rubber versus repair depending on process considerations and final selection of a carbon contacting mode.

The 150-hp blowers used for air scour are rated at 1,675 cfm (cubic feet per minute) at 15 psi (pounds per square inch). Discharge temperatures have been measured in excess of 190 deg F. This caused distortion of the Eimco plastic diffusers and allowed the air piping to become filled with carbon.

The stainless steel nuts that hold the diffusers in place are badly corroded. However, the stainless steel bolts are not corroded. This could be caused by the elastomer used to hold the nut in place or by use of a different stainless steel for the nut.

Sound level readings taken show that the compressor have an excessive noise level. In the Operator's Office on the floor above the compressors the reading was 103 DBA. At the entrance to the compressor room the reading was 128 DBA. Protective ear covering is required above 115 DBA.

The controls for starting the lobe-type positive displacement compressors require modification. The automatic unloading

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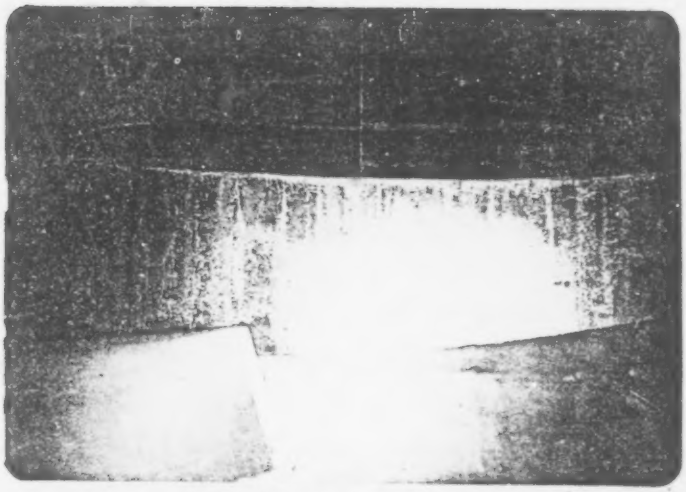
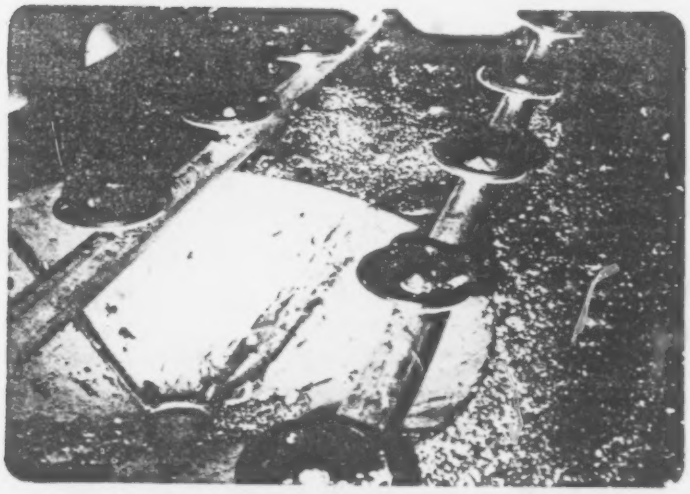


CARBON COLUMN - LINING FAILURE



BOTTOM OF CARBON COLUMN - NOTE MIXING OF GRAVEL AND CARBON

FIGURE 7

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valve closes in approximately 18 seconds but the valve to the carbon columns air piping does not fully open for one minute. As a result the pressure relief valve on the blowers has been opening. This could be caused by improper valve opening speeds or by the increased pressure loss in the air piping caused by plugging the pipe with carbon.

The compressors are installed in a small area that originally was intended to be a storage area and space for maintenance is inadequate. If it is required to remove the rear compressor, it will have to be disassembled. No ventilation has been furnished for this basement space. If the compressors are operated for extended periods, overheating will be a problem.

Field investigation by plant staff and Metcalf & Eddy indicate that the loss of carbon from the adsorber was through the filter underdrains and the support gravel system as shown in Figure 4, 5 and 7. The existing gravel is 8 inches deep which is less than that currently recommended for a Leopold underdrain system. As indicated in Figure 7, the carbon withdrawal funnels project through and above the gravel support. This arrangement creates excessive rates of flow of backwash water around the perimeter of each funnel. These excessive flows caused displacement of the gravel thereby leaving a void which has allowed gross loss of carbon along the underside of the funnel to the underdrain system. No obstruction to flow through underdrain gravel can be tolerated since it can cause localized

increases in flow which can fluidize the gravel and result in mounding of the stone, thus opening a direct passage for the carbon to enter the Leopold underdrain tile.

Major modifications to the carbon removal system and the carbon filter underdrain system must be made to eliminate loss of carbon from the column. Some alternatives to be considered are:

1. Redesign of gravel to 12 inches in thickness utilizing four layers with the top layer consisting of a high density gravel of garnet or limenite.
2. Redesign the gravel using 12 inches which would consist of four layers and use a stainless steel mesh and anchors to retain the gravel in place.
3. Eliminate the gravel, remove the Leopold underdrain system and install a nozzle underdrain system for an air-water wash backwash system.

All the above modified underdrain systems include redesign of the carbon removal system within the adsorber.

As a result of the carbon in the effluent the impellers of the surface wash pump have had severe corrosion and/or erosion so that the pumps no longer discharge their rated capacity.

The effluent water strainer is frequently plugged and must be manually cleaned.

Carbon has been found throughout the piping system and has plugged the surface wash nozzles. Carbon has plugged and possibly

eroded the carbon column flow controller. The rate of flow controllers should be inspected for wear due to carbon abrasion before recommissioning.

These problems will be minimized or eliminated when corrections are made on the columns to prevent the loss of carbon.

Carbon Regeneration

The eductor used for transferring carbon becomes plugged with solids, and a temporary screen is used to prevent plugging. Process modifications to prevent solids carryover and possibly a larger eductor should correct this problem.

The transfer piping becomes plugged and there are an inadequate number of flushing connections to facilitate clearing the system.

Means of controlling the flow of the motive water pumps has not been provided. Below 3.5 feet/second the carbon settles out and above 10 feet/second the abrasion is excessive. Controls should be provided to keep the velocity within acceptable limits.

A spill containment area has not been provided. Additional controls should be provided to assure that the system is operating as intended, such as carbon level sensors, etc.

The gaskets in the transfer piping blow out under pressure and should be modified.

The following comments pertain to the regeneration furnace area:

1. Provide safety goggles and asbestos gloves for work around the hot furnace.
2. Provide fire fighting capability, extinguishers, etc.
3. The alarm for the furnace cannot be heard on the operating floors when the door to the control room is shut.
4. A flue gas bypass is not provided. In the event of an induced draft fan failure, scrubber water pump failure, or power failure, the operator has no means of controlling the combustion process except to shut off all sources of air to the furnace. The absorbate on the spent carbon is highly combustible then the gasses released may come through the furnace doors creating a fire hazard, also, the high temperatures will damage the scrubber.
5. The center shaft drive and cooling air fan should be connected to an emergency generator to protect the furnace in the event of a power failure.
6. An emergency scrubber water supply should be provided to protect the scrubber.
7. An alternate means of escape should be provided from the upper level.
8. Platform access is inadequate to properly maintain the equipment, especially the burners on the lowest hearth and the center shaft drive and cooling air fan.

9. The burner control boxed around the furnace appears to be inadequate to prevent moisture accumulation on the controls during long periods of shutdown.

Carbon Column Building

A heating system was installed in the Operations Room of this building. Infra-red heaters have been installed in the Column Room, but these are not effective and ice has formed on the floor.

The Column Room is furnished with roof exhaust fans for summer ventilation, but there is no provision for winter ventilation. This condition is a problem, especially when odors are present.

The Operations Room and the Storage Room above it that has been converted to an office have fixed windows and are unbearable during summer months. The office does have a small exhaust fan that is ineffective because of the fixed sash.

A heating and ventiling system should be provided in this building and the office and Operations Room should be air conditioned.

All sump pumps in the Carbon Building are of the vertical, extended shaft drainage type pumps and are not nonclog pumps. These pumps should be nonclog submersible pumps. Carbon has damaged the existing pump bearings.

The pumps are not connected to the standby power. On power failure, it is possible to flood the dry well.

The control system includes only a single compressor.

No high water alarm is installed. The pumps have become clogged and flooded the dry well without an alarm being given. This alarm should be transmitted to a central point.

Sludge Handling

In addition to the problems previously discussed, certain other problems noted are as follows:

The plant operators have experienced problems in keeping the vacuum filters in continuous operation. This problem is caused by the inability of the filtrate pumps to run continuously.

Vacuum for both filters is provided by a common receiver, vacuum and filtrate pump system. During operation, the filtrate pumps have completely emptied the filtrate from the receiver and have become air bound. When the pumps are air bound the receiver fills with filtrate, eventually shutting down the vacuum system.

Piping and/or pump modification will be required to provide reliable filtrate pumping.

Appendix D describes the problems with the existing sludge incinerator.

Grit is removed from the sludge from the clarifiers with a cyclone grit separator. The separated grit is cleaned in a grit classifier. Grit is discharged from the classifier into a hand cart for removal from the plant.

The present grit classifier does not have wash sprays installed on the head portion of the classifier. The efficiency of the classifier in removing volatile solids from the grit may be improved by the addition of these sprays.

The location of the grit separator and the hand cart for grit removal is at the farthest point in the building from the truck dock. It is extremely difficult to manhandle a heavily loaded grit cart from this location to the truck dock for removal. The materials handling system for the grit is inadequate and, to some extent, creates a safety hazard.

Either the grit separator system should be relocated to a more accessible point, or a materials handling system for the grit should be provided.

Chlorination

Only one chlorine injector water pump has been installed. If this fails there is no chlorination. A second pump must be installed for standby duty of this vital pump.

The chlorine injector water pump motor is operating with a 15 percent overload (the motor has a 1.15 SF). The pump pulls its full rated 10 hp at the rating point of 100 gpm at 200 feet, but the pump operates at about 160 feet TH. The existing 10-hp motor should be replaced with a 15-hp motor.

Only a single evaporator is furnished for the two chlorinators. A standby evaporator should be furnished.

Electrical

The Digester Building usually treated as a hazardous area has considerable electrical equipment not explosionproof. A gas detecting system should be installed (as soon as possible) providing an alarm and energizing of ventilation equipment on detection of gas. This also could apply to Screening Building.

The electrical distribution system has one incoming line only and no emergency generator power for major pumping facilities. In addition, the distribution system within the plant has no flexibility due to subfeeding of power. For instance, if power is lost to the Settled Sewage Pump Station, all power is lost at the Carbon Building. If power is lost to the Filter Building (single 4,340 volt underground and overhead line terminated in a single transformer at filter building) all power is lost to the remainder of the plant. Any future design should provide a completely new distribution system incorporating some form of secondary selection.

ALTERNATIVES

General

From the foregoing, major modifications to the existing facilities will undoubtedly be necessary if the County is to provide secondary treatment for all existing wastewater flows. While the specific physical/mechanical problems outlined will require correction, the main considerations in upgrading are the process problems. To avoid wasteful expenditures, solutions to these problems must consider both present and future wastewater flows (needs).

The development of alternatives for upgrading existing facilities is done in a facilities planning study. Such studies including any pilot plant work, are eligible for Federal grants amounting to seventy-five (75) percent of approved costs. The facilities planning process includes consideration of wastewater treatment and sludge management alternatives from engineering, environmental and socio-economic perspectives. It culminates in the recommendation of the most cost-effective alternative. As noted in our letter dated October 13, 1976, (Appendix A) the plan of study contained in the county's Facilities Planning grant application includes consideration of modifications to the existing facilities. However, it is not explicit as to the scope of work, especially pilot plant work.

The development and study of alternates for upgrading the Rocky River Plant is complicated by the existence of facilities of widely varying utility with respect to present

and future flows. Some perspective on the problem can be gained by comparing the present average flows of 9 to 10 mgd (projected flows of 15 mgd have been mentioned) to: coagulation/clarification rated at approximately 10 mgd average; carbon filtration/adsorption unknown and sludge handling inadequate for present production.

Alternatives

The following discussion is not intended as an exhaustive development of alternatives but as an indication of the breadth of such studies to be done under Facilities Planning. In evaluating alternatives, operating and maintenance costs and reliability must be weighed along with capital costs considerations. When treating municipal wastewater, IPC facilities usually reflect a higher operating cost than conventional biological systems.

The two main process considerations in upgrading are, reevaluation of combined filtration/adsorption and the development of a cost effective sludge management program. It can be safely predicted that backwash water equalization and standby adsorbers will be a part of any upgrading.

The major alternatives for liquid waste treatment are:

- Upgrading and expansion of entire plant as independent/physical chemical,
- Utilize upgraded existing carbon facilities to treat portion of flow; expansion provided by biological process,
- Abandon carbon facilities and provide biological secondary treatment.

These are shown in Figures 9, 10 and 11. The last alternate is unlikely due to the existence of a sizable investment in the present facilities. However, it should be included in initial screening and cost comparisons.

Primary emphasis would be to maximize the utilization of existing facilities. Any departures would have to be justified on the basis of cost. The limited space for expansion was a prime consideration in the original decision to employ IPC at Rocky River.

Carbon adsorption for removal of BOD (biochemical oxygen demand) can easily meet effluent standards. In addition, suspended solids must be reduced from that which can be produced by the chemical coagulation/clarification process. It would appear that the downflow carbon filter adsorber would have the potential to provide both services, i.e., filtration to lower suspended solids and adsorption to remove soluble organics in one unit operation. However, as discussed earlier, operating experience indicates that there are problems with this combined process system. In addition there are serious questions regarding cost effectiveness.

Therefore, if carbon treatment is to continue and in order to minimize operation problems, conventional dual or mixed media filters should be considered prior to carbon adsorption as an alternate to combined filtration/adsorption. Separate filtration could be a cost-effective method of reducing the solids loading on the existing carbon columns and improving total system performance. Separate filtration would also allow operation of

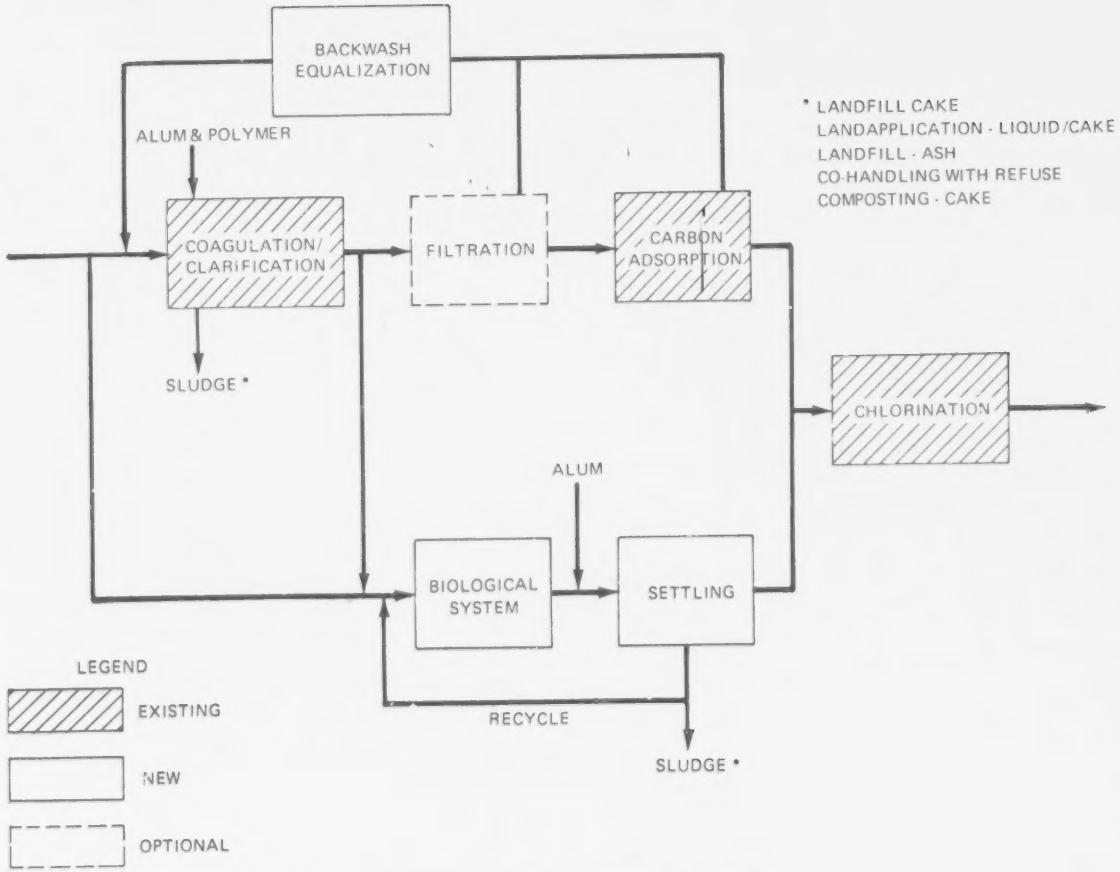

FIG. 9 SPLIT TREATMENT PROCESS DIAGRAM

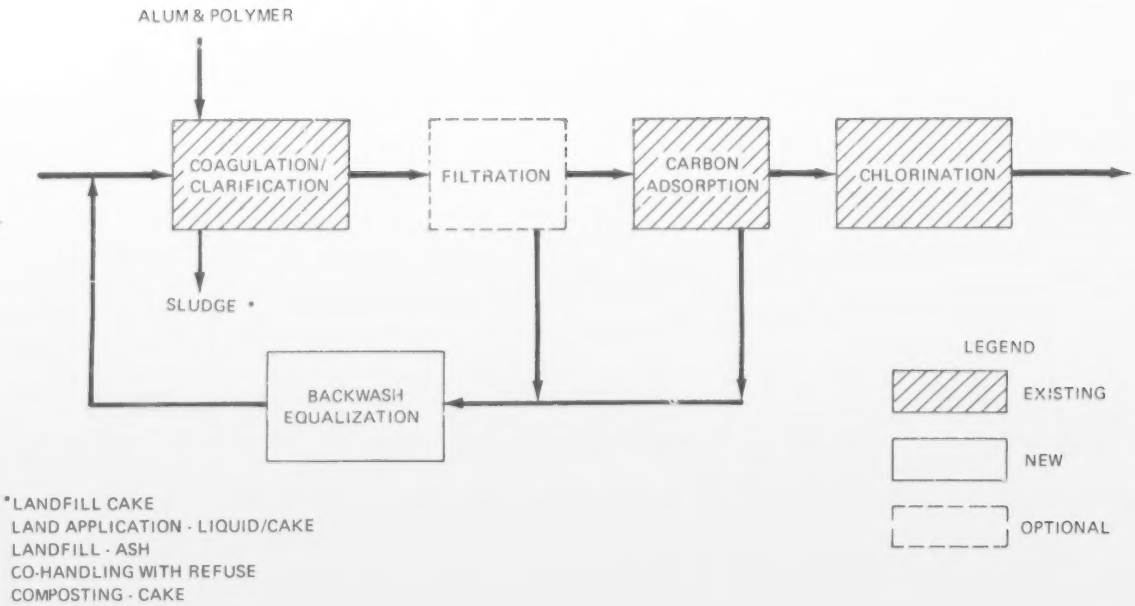

FIG. 8 IPC TREATMENT PROCESS DIAGRAM

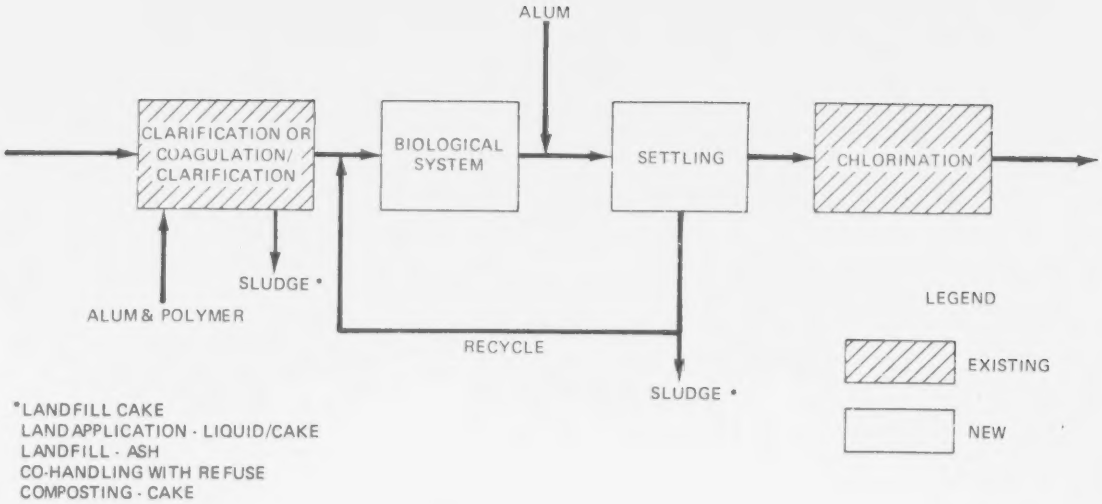

FIG. 10 CHEMICAL/BIOLOGICAL TREATMENT PROCESS DIAGRAM

carbon in the upflow expanded contacting mode. Filters may be of the gravity downflow or pressure type and experience indicates that suspended solids of less than 10 mg/L may be readily obtained. However, the capability of a filter to remove suspended solids is dependent upon the quantity and type of solids introduced into the filter.

The type of filtration system selected will depend upon the capability of a media to remove the suspended solids and capital and operating costs of the entire system. Comparative analyses, including pilot work, should be made of gravity downflow, pressure filters and combined filtration/adsorption to develop basic design data and determine the most cost-effective installation. Each system has certain characteristics which must be considered. For example, for wastewater filters, there is an advantage to utilize open filters to allow ease of cleaning and maintenance of the media and related equipment.

One of the critical operating criteria for wastewater filters is the length of filter run. It is desirable to obtain as long a run as possible in order to minimize the frequency of backwashing and, therefore, the amount of waste backwash water that must be recycled or treated in a separate process. The length of filter run of a gravity downflow filter is limited by the depth of water over the media in the filter box, whereas the length of filter run for a pressure filter may possibly by extended due to the availability of additional head. However, the increase in length of filter run possible for a pressure filter is not totally a function of head loss and depends on the

time that breakthrough of suspended solids will occur from the filter media. This, in turn, depends on the design of the filter media. The resistance of a media to breakthrough is a function of the design of the media and should be predicted based on pilot studies.

An alternate to separate filtration would be upflow/downflow carbon contacting.

Odor control will be a major concern in either a biological or physical/chemical treatment system. For example, separate filtration will not eliminate potential odor problems from carbon column and odor control in sludge handling systems is increasing.

Sludge management is of primary concern at any wastewater treatment facility. Sludge management consists of the facilities for processing sludge and arranging for their ultimate disposal. Alternate ultimate disposal of wastes must be considered in detail during the facilities planning process. In-depth environmental studies of land application are necessary to assess its long-term viability for all or a part of the sludges. Co-handling with solid wastes must also be evaluated.

The costs reported by the county for landfill of sludge cake and land application of liquid sludge of over $100 per ton of dry solids are quite high suggesting a reexamination of the use of the existing incinerator. Dewatering techniques to allow autogenous combustion and heat recovery could reduce sludge handling costs considerably from reported costs levels.

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The ultimate disposal options should be reviewed early in the facilities planning process to allow, if practicable, accelerated construction of much needed improvements to the existing system.

If incineration is cost-effective the use of anaerobic digestion would be discontinued. The existing digestors could serve usefully as sludge storage facilities to reduce peak load and provide added operational flexibility.

RECOMMENDED PROGRAM

In order to satisfy the requirements of the NPDES permit and serve the wastewater treatment needs of the area it will be necessary to undertake engineering studies leading to a recommended alternate.

It is recommended that these studies be funded as Step 1 work under PL 92-500 and conform to the requirements for facilities planning. This will maximize grant participation for implementation. The financial implications of grant participation are significant, while very preliminary, total costs for upgrading and expansion to 15 mgd (average) capacity could be in the range of 15 to 20 million dollars.

While short-range improvements may become evident upon further study, comprehensive planning is mandatory to avoid wasting of funds, both capital and operating. The major short-range objective should be for improved sludge handling. It is imperative that staffing and financial support be available for sludge handling and disposal.

The detailed scope of work and associated costs should be prepared by the consultant selected to conduct the expanded facilities planning work. Any expansion of scope must be integrated with the ongoing facilities planning effort especially the I/I (infiltration/inflow) analysis.

However, as a minimum the study should include:

- coordination and finalization with ongoing facilities planning of present and future wastewater quantities and characteristics.
- preliminary screening, using known design parameters, of alternative upgrading techniques; the objective being to establish a pilot plant program capable of producing necessary design data for the most viable alternatives. Evaluative factors should include; reliability, space requirements, capital and operating costs and state of the art.
- design, construction (by others) and operation of approved pilot plant work. It is expected that at least two (2) process configurations would be piloted using one or two of the existing carbon columns appropriately modified.
- economic and environmental evaluation of alternate sludge handling and disposal techniques.
- final screening and evaluation of selected alternates on the basis of pilot work. This evaluation should consider phased implementation capabilities and maximum utilization of existing facilities.
- planned public participation in the selection process, including full disclosure of capital costs, total and local shares, and operating and maintenance costs, environment assessment and other related factors.

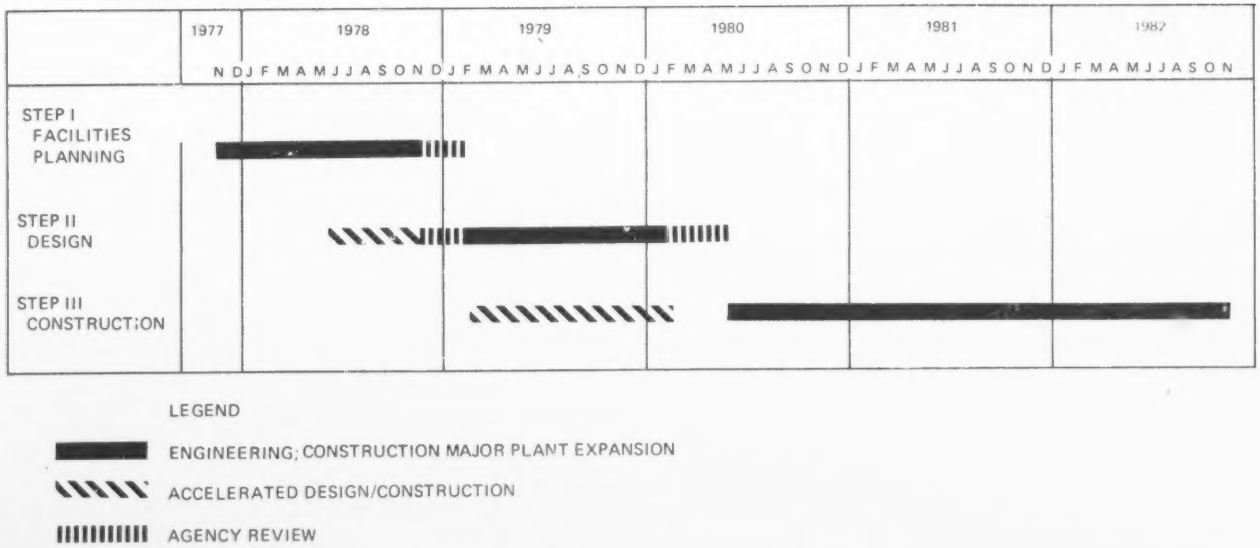

FIG. 11 PRELIMINARY SCHEDULE

- development of an implementation schedule with recommendations for acceleration of immediate needs under the provisions of 40 CRF 35.917(d).

Based on our past experience and to allow sufficient time for planning, review and funding, a preliminary schedule is shown as Figure 11. A request for amendment of the present Step 1 work should be made, along with appropriate revisions to the schedule.

Respectfully submitted,

METCALF & EDDY

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APPENDIX A

LETTER REPORT OCTOBER 21, 1976

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October 21, 1976

J-4862

Mr. Stephen Sebesta
County Sanitary Engineer
CUYAHOGA COUNTY COMMISSION
Division of Sanitary Engineering
1276 West 3rd Street
Cleveland, Ohio 44113

Subject: Rocky River Summary Report

Dear Mr. Sebesta:

In accordance with our agreement and our most recent discussions this letter is intended to summarize our involvement in the Rocky River R&D project in accordance with our agreement dated July 19, 1976. The purpose here is to; present the background at the time of our involvement, describe the major problems that were perceived at the onset and remain as such and present our major conclusions and recommendations based on the work to date.

Background

General. Our involvement in the Rocky River project began in July of 1976. At that time the County was in the midst of a Research and Demonstration project under a grant from the Environmental Protection Agency. The project involved the demonstration of the use of coagulation and settling in conjunction with granular activated carbon filtration/adsorption as an alternative to conventional biological secondary treatment. The NPDES (National Pollution Discharge Elimination System) Permit issued to the County required implementation of the equivalent of secondary treatment by September 1, 1976. This permit is typical of permits being issued throughout the Countby to all discharges in conjunction with Public Law 92-500 and is independent of the Research and Demonstration project per se. The permit, however, ties the starting date for the required secondary effluent to the successful startup and operation of the R&D project. Interim requirements are presently in force.

INVESTIGATIONS • REPORTS • DESIGNS • ADVICE DURING CONSTRUCTION • ADVICE ON OPERATION
PLANNING • VALUATIONS • LABORATORIES • RESEARCH

The R&D project is multifaceted and the details are contained in the original application and the various amendments made thereto over the project period. The two major facets of the project are the construction of the treatment facilities and the operation and analysis of performance. The Spohn Contract No. 1 had not been accepted at the point of our involvement. Serious physical problems including lining failures, carbon losses and mechanical failures had raised questions regarding continued operation of the carbon system.

The scope of our services was to provide consultation and advice to the county regarding the identification and resolution of major problem areas.

Major Problem Areas - The major problem areas can be grouped into three categories in order of priority:

1. Contract administration

2. "The R&D Project"

3. The NPDES Permit

Approach to Problem

Our approach to the problem has been to review, in detail, all past correspondence, reports, and other available information to the extent practicable and through on-site visitations by specialists, in depth consultation with the County, including the plant operating staff, representatives of Schade and Associates, representatives of EPA to get as clear a picture as possible of past events. The complexity of the situation needs little elaboration and while we have broken the major problems into three categories, none are entirely separate. It is for the purpose of attacking these problems and finding resolutions that these categories have been established.

It must be recognized that the introduction of an outside consultant represents some problems in and of itself. Problems which cannot be overlooked in the resolution of the above outlined issues. It is our intent, clearly stated at the onset of our work with the county, that we will deal with the issues and report objectively to the County in the form of confidential letter reports on these issues in a timely way. Similarly, that the County's approach, as conveyed to us, was to find solutions to these problems, if at all possible, short of litigation. Further that recommendations regarding litigation would not be made by Metcalf & Eddy, nor are any implied by this letter or previous letters.

Summary of Conclusions and Recommendations

The three major problem areas are discussed in detail in separate appendices. In summary, our major conclusions and recommendations are that:

Contract Administration

- Contract No. 1, Spohn Corporation, with the exception of the items on the attached final punch list, has been built in substantial conformance with the contract plans and specifications.

- a semi-final estimate should be issued on said contract; final estimate and extension of time shall be held in abeyance pending resolution of the rubber lining failure.

- the contractor with Uniroyal and Protective Coating provide data satisfactory to the County to show that the rubber linings were installed in strict accordance with manufacturers' recommendations.

- that arrangements be made for "mothballing" the carbon facilities for an indefinite period. Such procedures should include the recommendations of manufacturers of electrical and mechanical equipment.

R&D Project

- the granular carbon filtration/adsorbtion facilities cannot be operated without major modifications to the entire plant, the rubber linings notwithstanding.

- the costs to provide an operable facility would be high, with little prospects for further funding under the R&D program.

- there is no benefit for the County in continuing the R&D project per se. Additional pilot plant work should be coordinated with Facilities Planning (201) required under the NPDES permit.

- the results of the R&D project to date are a significant contribution to the state-of-the-art of wastewater treatment.

- the R&D project be terminated as soon as is practicable. Further that termination negotiations with EPA provide that any unapplied grant monies be applied to termination costs and past completed work to maximize grant participation on total project costs.

NPDES Permit

- the County must provide the equivalent of secondary treatment for all wastew discharged from Rocky River. The schedule can be negotiated in connection with the Step 1 application.

- In order to comply and be eligible for grant assistance the County must perform Facilities Planning consisting of consideration of long range needs, reduction of infiltration/inflow and selection of the most cost-effective waste treatment system including ultimate sludge disposal.

- that the recommended improvements to the existing facilities be incorporated in any upgrading and expansion of the Rocky River wastewater treatment facilities.

If you or the Board have any questions on these conclusions and recommendations, we would be most happy to meet and discuss them.

Very truly yours,

METCALF & EDDY

Francis C. Sampson

FCS:mar

APPENDIX A

CONTRACT ADMINISTRATION

CONFIDENTIAL

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CHARLES T. HITCHCOCK, JR.
ARIEL A. THOMAS
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METCALF & EDDY ENGINEERS

50 STANIFORD STREET, BOSTON, MA 02114

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October 15, 1976

J-4862

Mr. Stephen Sebesta
County Sanitary Engineer
CUYAHOGA COUNTY COMMISSION
Division of Sanitary Engineering
1276 West 3rd Street
Cleveland, Ohio 44113

Subject: Report on Final Inspection
Rocky River Wastewater Treatment Facilities

Dear Mr. Sebesta:

During the week of September 14, 1976, a final inspection of the Rocky River Wastewater Treatment Facilities, constructed by The Spohn Corporation under Contract 1 and Change Orders 1, 3, 6, 8 and 10 to that Contract, was conducted by a team of four specialists from our staff. Our inspection was limited to Contract 1 since we understand final estimates to have been issued and Contracts 2,3,4 and 5 in this project closed out by the County prior to our involvement. Where specific deficiencies were uncovered, however, e.g. some electrical items, they are noted as such. The purpose of the inspection and tests was to determine the degree of compliance of the work performed by the Contractor with the original Contract Plans and Specifications, as modified by authorized Change Orders and shop drawings approved by the County. This inspection was preceded by several visits to the site and considerable effort in this office by the members of the inspection team and others of our staff, Meetings with County personnel and the Contractor, and the collection and review of data, all necessary to define the problems and to review the history of the Contract administration to this point in order to establish a procedure for a complete and efficient final inspection. The process included a review of all approved shop drawings for the necessary detailed information on equipment furnished. The inspection was restricted to some degree in that certain of the processes and equipment were inoperable at the time of the inspection; however, the County Plant Operations staff provided their observations of the functioning of these systems and equipment when they were operating, enabling us to make judgments as to whether or not the equipment appeared to meet the contract requirements.

In general, the testing procedure was to operate all equipment, take performance data on as much equipment as possible to determine compliance with approved performance requirements, megger circuits, and to determine current loadings on motors under actual operating conditions. Other equipment and materials were inspected visually for compliance.

The inspection covered the following in each area.

Headworks

Coarse bar screen cleaner and controls, screenings,conveyor, canopy with heaters, standby generator, grit collectors, and recycle flow piping.

Clarifier Area

Distribution chamber mixer, clarifier alterations, chlorine injection water pump and piping, chlorine evaporation, chlorine pressure reducing valve, scum pipe insulation and heating and chlorinator rotometers and electric pacing equipment.

Settled Wastewater Pumping Station

Pumping equipment and controls, overhead crane, heating and ventilating, water seal system, and sump pumps.

Carbon Building

Carbon columns, instrumentation and controls, backwash system, surface wash system, air backwash system, carbon transfer system, regeneration furnace, jib crane, traveling crane and building services.

Sludge Thickening

Inlet splitters box.

Digesters

Valves and piping.

Supernatant Treatment System

Aeration tank and equipment, settling tank and equipment, sludge holding tank and pumps and line handling equipment.

Sludge Process Building

Sludge degritting and disintegrator, jib crane, scum processing equipment, chemical storage tanks and chemical feed system.

Site Work.

Roadways, grading and power distribution.

Attached is a punch list, tabulated according to Contract Item Numbers, listing those items found not to be in compliance with the approved Contract Documents. As we have discussed, the punch list should also include any items of Contract administration not yet fulfilled by the Contractor, such as subcontractor payrolls and insurance certificates outstanding, as well as any operation and maintenance manuals required by the Contract Documents not yet received, the provision of the services of manufacturers' representatives for start-up and instruction of operating personnel which may not yet have been completed, and any other miscellaneous items to be settled, such as the cost of temporary heat, for which the Contractor may be liable. A specific list of these requirements still outstanding can best be generated from your own records and appended to the punch list.

A major item of uncompleted Contract administration is the matter of an extension of the Contract time for completion. We understand the original time for completion to have expired on July 28, 1974, and the date of substantial completion and at least partial beneficial occupancy by the County to have been August 18, 1975. At the very least, the Contractor is liable for the assessment of liquidated damages through August 18, 1975, unless and until a time extension to that date is granted by the County. We understand that the Contractor has filed a request for an extension of time, but that it has not yet been acted upon.

With the exception of those items listed, and including reliance on the observations of County personnel coupled with our visual static inspection as the basis for our assessment of that equipment not now operable, we believe all other work performed under the subject Contract to be substantially in compliance with the Contract requirements.

Before finalization of the punch list and its presentation to the Contractor, we believe it most important that Schade Associates review the list and that their comments and any additions thereto be incorporated.

As you know, essentially all of the items on this punch list were read to the Contractor at our meeting on September 29, 1976, and none appear to present any real problem with the exception of the matter of the rubber linings; that is, we expect that the Contractor will correct all other deficiencies forthwith or that in some cases, such as the substitution of smaller nozzles for those specified, a cost difference should be assigned and taken as a credit against the total Contract cost.

The rubber linings are another matter. To date, only three of the columns have been emptied and inspected, and the remaining columns must be emptied and inspected in order to completely quantify this issue. We have listed the linings as a deficiency in that a failure has occurred and the burden of proof that the installation complied with the Contract documents rests with the Contractor.

Since additional time will be required to fully assess the data submitted by the Contractor on September 29, 1976, to support his contention that the materials, application and cure of the linings were as specified, we recommend that the County issue a semi-final estimate releasing to the Contractor all monies due under the Contract less an amount estimated to be the cost of correcting all uncorrected deficiencies. Assuming the resolution of a time extension will be left until the final settlement, the estimate should include a statement to the effect that, although liquidated damages have not been deducted, the County does not waive its right to do so.

Since the responsibility for the failure of the rubber linings and the cost of ultimate corrective measures are still indeterminate, we recommend that the deduction against uncorrected deficiencies include the full cost of the rubber linings for all of those carbon vessels wherein failures are found to have occurred. We believe this amount to be in the order to $20,000 per column.

Regarding these determinations, we have reviewed the data attesting to the equality of the Uniroyal rubber to the Goodrich material specified and the application and degree of vulcanization of the original installation, as submitted to the County by the Contractor at our meeting on September 29, 1976. As we have discussed with you, we believe this data now substantiates, from a practical point of view at least, the equality of the Uniroyal rubber and presents new information intending to demonstrate that the original installation and cure was as specified and that some subsequent condition caused the failures. Inasmuch as an evaluation of the new data requires expert knowledge of the chemistry of rubber and since Uniroyal has not yet taken any formal position in this matter, Uniroyal must be contacted to review the problem and the data submitted by the Contractor. In accordance with your instructions and the concurrence of George Hudak we are preparing a letter to Uniroyal transmitting same and requesting their comments.

Pursuant to your instructions, we have made some initial determinations of the scope of an independent testing program to uncover the specific causes of the failures and have contacted a laboratory in this area we believe can do the work required. We feel, however, that the initial burden of proof rests with the Contractor, its applicator, and supplier and that the investigation should be pursued by these parties as long as it appears productive.

Should Uniroyal's response fail to lead us to a determination of responsibility or should our eventual position be challenged, we can, on your authorization, proceed with independent testing.

Very truly yours,

METCALF & EDDY

Francis C. Sampson

Francis C. Sampson

JTQ:mar

Enc.

CSD-4852

October 14, 1976

CUYAHOGA COUNTY, OHIO
SEWER DISTRICTS 6, 10, & 12
IMPROVEMENT 615A
ROCKY RIVER WASTEWATER TREATMENT PLANT
CONTRACT NO. 1

FINAL PUNCH LIST

This punch list is limited to the items of Contract work we believe not to be in compliance with the Plans, Specifications, and approved ship drawings.

Item Number		Description
4A	Concrete Class A	1. Correct slope on concrete apron at south truckway door of carbon building.
9	Valves	1. Install chain wheel operators on two (2) backwash pump discharge valves in carbon building.
10	Pumping Equipment	1. Verify that the impellers in the settled water pumps are 23 inches in diameter as stated in certified pump curves.
		2. Verify that the impellers in motive water pumps 1 and 2 are 13-1/16 inches in diameter as stated in certified pump curves.
11	Metering and Control Equipment	1. Furnish and install a new motor for the effluent control valve for column 5.
		2. Replace the cracked case on the variable position valve indicator for the backwash valve on console "B" at column 4.
12	Carbon Absorption, Transfer and Regeneration Equipment	1. The rubber linings in three (3) of the carbon columns have failed. These failures and others which may be revealed upon inspection of the remaining rubber-lined vessels are being investigated to determine the cause of the failures. Since the burden of proof of compliance with the Contract Documents rests with the Contractor, the linings are listed herein pending this determination.

		2. A constant speed unit was substituted for the variable speed unit specified for the carbon feed screw conveyor.
17	Grease Handling Equipment	1. A 7-1/2-HP motor is installed on the scum grinder. The Contract Drawings show a 20-HP motor for this service.
		2. A 3-HP motor is installed on the scum mixer. The Contract Drawings show a 10-HP motor for this service.
20	Painting	1. Paint the following surfaces:
		a. The galvanized wire way over the screen control cabinets and starters in the grit building.
		b. The galvanized chlorine injector water line from 10 feet downstream of the pump discharge to the eductors.
		c. One (1) plug valve in the digester area.
		d. The two (2) galvanized resistor boxes over the Ikor control panels in the settled sludge pumping station.
29	Chlorination Equipment	1. Install one (1) pressure gauge between chlorine evaporator and gas pressure reducing valve.
Change Order No. 10		10A. The saw cuts in the concrete roadway have not been sealed.
		10K. Make the electrical tie-in between the scum pumps and grease preparation grinder.

CSD-4862 October 14, 1976

SUPPLEMENTAL PUNCH LIST

CONTRACT NO. 4
ELECTRICAL WORK

Item Number	Description
33 Electrical Work	1. Replace the circuit breaker for the scum grinder with a circuit breaker of the size that is compatible with the scum grinder motor (30 amp trip). 2. Replace the overload heaters for scrubber water pumps 1 and 2 with the size that is compatible with the motors. 3. Install the missing lighting fixture on the street lighting pole at entrance to carbon column building. 4. Install guy wire on dead end pole at filter building.

APPENDIX B

"THE R&D PROJECT

CONFIDENTIAL

METCALF & EDDY
50 STANIFORD STREET, BOSTON, MA 02114
ENGINEERS

July 23, 1975

J-4362

Mr. Stephen Sebesta
County Sanitary Engineer
CUYAHOGA COUNTY COMMISSION
Division of Sanitary Engineering
1279 West 3rd Street
Cleveland, Ohio 44113

Dear Mr. Sebesta:

In accordance with our agreement, and based on our site visitations and review of the contract documents and other related materials, we recommend that the use of the activated carbon system be discontinued as soon as practicable. The major considerations behind this recommendation are:

1. The contractor has denied responsibility for any damage resulting from the continued use of the activated carbon columns.

2. The County, by continuing to use the carbon columns, is, in effect, assuming the responsibility for any further damage to the columns as a result of that use.

3. Carbon losses will continue, a loss which, in monetary terms, is significant to date.

4. Further adverse secondary effects of carbon loss such as the obvious deterioration of the surface wash water pump capacity.

5. The continued use of the carbon columns is not required by the present NPDES permit. In addition, EPA, in recognition of the marginal performance agreed the continued use of the columns is not consistent with the objectives of the R&D project.

6. That proper inspection and recommendations for repair and modifications to facilities in general can only be accomplished with the carbon system out of service.

In summary, there is, in our judgement, no compelling reason to keep the carbon columns in service as presently functioning and it is in the best interest of all concerned to discontinue the operation. It is our understanding that the County plans to regenerate the carbon during this period and has made plans for storing both spent and regenerated carbon.

In connection with the lining failure, we recommend that the county require, under the provisions of Article 16 of the General Conditions of the contract documents, that the contractor submit, in writing, his proposed methods and materials for repair.

We are proceeding with our evaluation of the mechanical systems and the carbon columns as filters.

As agreed previously, a meeting with EPA to discuss the alternative courses of action should be scheduled. I would suggest the week of August 9th (I'll be on vacation August 2-6).

Very truly yours,

METCALF & EDDY

Francis C. Sampson

FCS:mar

bcc: W. Wilson
S. Bishop

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CONFIDENTIAL

METCALF & EDDY 50 STANIFORD STREET, BOSTON, MA 02114
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TELEX ...

October 13, 1976

J-4862

Mr. Stephen Sebesta
County Sanitary Engineer
CUYAHOGA COUNTY COMMISSION
Division of Sanitary Engineering
1276 West 3rd Street
Cleveland, Ohio 44113

Subject: NPDES Requirements Facilities Planning

Dear Mr. Sebesta:

In accordance with your request we have reviewed the plan of study submitted as a part of the County's Step 1 grant application for Facilities Planning for Rocky River. Our review is in the context of our engineering agreement with the County on advice and consultation in connection with the R&D project at Rocky River.

Under provisions of the NPDES permit, Rocky River is to attain the equivalent of secondary treatment including phosphorus removal for all wastes discharged from the plant. The plan of study covers all aspects of facilities planning and there is explicit provision for satisfying the requirements of facilities planning as outlined by EPA. However, we find the plan is not explicit in identifying the engineering effort required to establish and select a waste treatment system for Rocky River. Specifically, we find no indication or recognition of the need for pilot plant work to arrive at the most cost effective waste treatment system for Rocky River, the R&D project notwithstanding.

As you are aware from past discussions we would not recommend the present flow sheet at Rocky River as the long term solution to the waste treatment needs without piloting and extensive modification. While the subject of the R&D project will be dealt with in considerably more detail in another report, suffice to say that the R&D project will not be conclusive regarding the most cost effective waste treatment option for Rocky River.

APPENDIX C

THE NPDES PERMIT

METCALF & EDDY 50 STANIFORD STREET, BOSTON, MA 02114
ENGINEERS

CONSULTANTS
ALLEN J. BARDIN
CLAIR N. LAWYER
GEORGE J. SCHROEPFER

September 23, 1976

J-4862

Mr. Stephen Sebesta
County Sanitary Engineer
CUYAHOGA COUNTY COMMISSION
Division of Sanitary Engineering
1276 West 3rd Street
Cleveland, Ohio 44113

Dear Steve:

As a follow-up to our telephone conversation the other day, I wanted to reiterate our concern regarding the presence of carbon in some of the columns. As indicated previously carbon must be removed from all the columns as soon as possible to prevent continued deterioration of exposed carbon steel wall. At the same time all piping instrumentation and pumping systems must be purged to assure the integrity of those systems.

We have been unsuccessful in extracting information on the installation of the lining system from the contractor and feel that this request should now be in writing. It is important for the contractor to supply the county with the specific manufacturer's instructions on the installation of the lining system as well as an outline of the procedures actually used including those used for vulcanization in as much detail as possible. I believe that previously the county had requested information regarding lining material. This request should be reiterated.

As discussed, I expect to have all of the reports on the "shake down" inspection the first part of next week or about the 28th of September and to have a preliminary evaluation of all the results by the end of the week so that we can discuss it in Minneapolis, St. Paul. From there it would seem that a meeting with the contractor some time the week of October 11 or 18 would be appropriate to review the status of our work and the disposition of the remaining items. The outstanding item, of course, remains the lining itself.

In view of the above, we would suggest that you meet as soon as possible with your engineer for Facilities Planning and (subsequently) representatives of the Ohio EPA and Region V representatives to discuss the scope of work prior to the approval of the Step 1 grant application. While an amendment to the grant would be possible after approval, to avoid future delays, an early meeting and concurrence is recommended.

Very truly yours,

METCALF & EDDY

Francis C. Sampson

FCS:mar

On the subject of EDA funds for projects at the plant, I am enclosing a list of possible projects. You will note that this list does not include major modifications to the sludge handling facilities. I am extremely reluctant at this time to propose that you make major capital improvements to the sludge handling facilities in light of the long range needs of the system and the engineering time needed to properly plan such improvements. Many of the items, however, could improve or make less labor intennive both sludge handling and the preliminary treatment areas.

As you know, I am something less than enthusiastic about the entire EDA program in regard to waste treatment projects. I am fearful that in the crash to get the money, many ill-conceived, poorly planned projects will result. I am sure you have a fairly large laundry list for other areas in the county. In any event all the items on the attached list would be included in the overall improvement to the plant facilities under PL 92-500. However, I realize that it's not politic to turn down an opportunity to get Federal grants, and feel that the items on the list could be, in fact, ready to go to bid within the required 90 day time frame (be prepared for review by EDA within the 60 day time limit). This program is one that remains unclear in my own mind, that I can see the potential for delays in any event just through the application process. I assume that the county will pick up and administer the entire application process.

There was insufficient time to estimate the costs for this list of improvements, but for preliminary application purposes, $200,000 is the order to magnitude. If you feel that these projects warrant further consideration, please advise and we will prepare a firm estimate on these improvements. In the meantime, I look forward to seeing you and getting together with you in Minneapolis, St. Paul.

Best Regards,

METCALF & EDDY

Francis C. Sampson

FCS:mar

Enc.

P.S. As discussed today, we will meet with the Contractor on September 29th to discuss the status and major outstanding items.

FCS

bcc: J. Quinn
R. Crane
P. Gunby

Possible EDA Projects

Modifications to Existing Treatment Facilities

Pretreatment

1. House Mech. Clean Screen; Conveyor and Screenings container in a new building addition to eliminate freezing.

2. Convert existing mechanically cleaned screen from 1-1/2-in. clear opening to 1-in. clear opening to reduce rag problem at the grit chamber, thickener and digester.

3. Provide adequate H&V in new addition and existing pretreatment building.

4. Replace existing Jeffrey grit washer with a grit classifier. Existing unit is inoperative.

5. Insulate existing standby generator exhaust pipe to 8 ft. minimum above floor. The present exposed pipe is a safety hazard.

Chlorination System

1. Add a second chlorine injector water pump to provide standby service. Only one pump is presently installed. This does not comply with reliability standards.

2. Provide a standby chlorine evaporator.

3. Replace existing 10 hp injector water pump motor with a 15 hp motor to eliminate existing 15% overload on motor.

Carbon Column Building

1. Provide heating and ventilating system to prevent deterioration of building and equipment.

2. Replace existing vertical, extended shaft sump pumps with non-clog submersible pumps. Carbon in the building drainage has damaged the shaft bearings of the existing pumps. Also, the existing pumps are <u>not</u> now clog pumps.

3. Provide building sump high level alarm to prevent dry well flooding and provide standby bubbler air compressor. Connect alarm to remote site.

4. Relocate the discharge of the building sump pump discharge force main at the existing Rocky River Pump Station. This discharge presently rises above ground and discharges into the influent chamber. To prevent freezing, the discharge should be located below grade. These may best wait for overall plant study.

Sludge Treatment Building

1. Install grit ejector system. This will eliminate manpower to manually wheel grit carts from the extreme rear of the building to the truck dock.

2. Install sludge cake ejector (conveyor) system. This will also reduce manpower needs.

APPENDIX B

PUMP TESTING

During the inspection trip of September 14 through 17, 1976, pump tests were made on the following pumps:

Settled Sewage Pumps

Backwash Pumps

Surface Wash Pump No. 2

Motive Water Pumps 1 and 2

Motive Water Pumps 3 and 4

Building Sump Pumps

Effluent Water Pump (Chlorine Inspection Pump)

Sludge Pumps.

With the exception of the Settled Sewage pumps, the Surface Wash pumps and the Effluent Water (chlorine injection) pump, the pumps meet the requirement of the contract.

The Settled Water pumps appear to be overpumping and, if this is true, could seriously overload the 500 hp motor and the speed controller if the units are operated at full speed. These pumps should be retested, or the top cover removed to verify the impeller diameter.

The test of the Surface Wash pump No. 2 is inconclusive in that we could not conduct a satisfactory test on this pump. I expect that the problem is with plugged impellers as was found

for Pump No. 1. Therefore, I recommend that this pump be disassembled to verify and clean the impeller. If the impeller is found plugged, the pump should be accepted.

The Effluent Water pump meets the requirements of the contract documents and should be accepted. However, this pump operates at less than the design head and is overloading the drive motor by about 15 percent.

Comments on each of the pumps tested are as follows:

Settled Water Pumps

The pumps were tested in the manual mode by discharging water through carbon columns 2, 3, 4 and 6. Flow was controlled by the column rate of flow controllers and was indicated by the influent flowmeter.

The shut-off head could not be checked because there is no shut off valve - only the automatically controlled butterfly valve. If the butterfly valve was manually held closed, the IKOR controls would shut the pump down.

The pumps could not be operated in the automatic mode or at full speed. In the automatic mode, the controls would call for full speed operation because of high wet well level. The pumps could not be operated at maximum speed since the maximum flow through each column is only 3 mgd or a total of 12 mgd. At the 12 mgd rate, the pump rating curve indicates a discharge pressure of 65 psi.

This pressure would over pressure the carbon columns. Therefore, the tests were made under normal control at a speed

of about 700 rpm. The result of the runs at 700 rpm have been converted to operation at 880 rpm by the pump laws to check the results against the pump rating curve.

The field tests indicate that these pumps pump more than the specified capacities. The shop drawings indicate that the impeller was trimmed to 28-in. diameter. The field tests, when corrected to equivalent performance at the shop drawing curve speed of 880 rpm, very closely match the capacity curve for a 30-in. diameter impeller. If the 30-in. impeller has been installed, it will overload the motor greatly when operated at full speed. (The 30-in. impeller draws 690 hp at 14,000 gpm).

Unfortunately, this problem was not discovered until the field data were analyzed. At this time, it was too late to retest the pumps to confirm the original results. Also, it should be noted that the field test was not conducted under ideal conditions so that the test results are probably accurate only within 5 or 10 percent.

I feel that this pump should be either retested or, possibly, the top cover removed to measure the impeller diameter. There is a question as to whether the correct size impeller has been installed.

The IKOR speed control unit seemed to operate satisfactorily in the manual mode. The speed indicator agreed with the pump speed as measured with a strobe light. As noted above, the unit

could not be operated in the automatic mode, but we would expect satisfactory operation, based on the operation under manual control.

Backwash Pumps

These pumps were tested at shutoff and by passing water through the rate of flow controller of Column No. 4. When the flow was within the range of the controller the flow was indicated on the controller. Higher flows were indicated on the backwash flowmeter. It was found that this flowmeter read about 7 percent below the flow of the rate of flow controller.

These pumps tested reasonably close to the pump rating curve and did not overload the motor.

Surface Wash Pumps

Surface wash pump No. 1 has been disassembled for maintenance. Surface wash pump No. 2 was operable and was tested.

It was reported to us that Pump No. 1 has done the majority of operations since the plant was placed on line because of a defective check valve on pump No. 2. It was also reported that the capacity and the head generated by pump No. 1 has decreased as the hours of operation have increased.

Disassembled Pump No. 1 was inspected on September 14.

The wearing rings have opened up to about 1/16 in. (0.060 in.) radial clearance. I would expect clearance for a

new pump would be about 0.005 in. Also, large pebbles were found in the eye of the first stage impeller. The eyes of the second and third stage impellers could not be checked since the pump was not totally disassembled. These pebbles covered about one-half of the area of the eye. The pebbles were too large to enter the impeller vanes that are about 3/8-inch wide. I have two of the pebbles found in the pump.

The clogging of the eye with rocks would reduce the pump capacity but would not greatly affect the pump head developed at shut-off. Opening up the wear ring clearance will reduce both the developed head and the capacity because of the recirculation from stage discharge to suction.

The increase in clearance is probably caused by carbon. I do not know how the pebbles entered the pump. One fairly round pebble has a shape and material (3/4 inch by 3/4 inch by 1/2 inch) that may possibly be column gravel. The other is 1-1/2 inch by 3/4 inch by 1/2 inch and is sharp edged and of a coarse, soft material. In any event, this material could not pass through the 5/32 inch openings of the filter blocks.

Surface wash pump No. 2 was tested at shutoff head and by discharging through the fluidizing connection of column No. 4. Flow was measured by the total flow through the totalizing meter over a 10 minute period.

This test is inconclusive since the results do not approximate the pump curve except at shutoff head. The slope of the test curve is typical of that for a plugged impeller.

It is probable that this pump is clogged with pebbles as was found in pump No. 1. This would explain the satisfactory shutoff head but the loss of flow at reduced head. It is also possible that the propeller type flowmeter is partially plugged with carbon.

Based on the above assumption, I expect the pumps were satisfactory when they were first installed.

Motive Water Pumps 1 and 2

These pumps were tested at shutoff and by timing the filling of the spent carbon tank.

The test points exceed the rating of the pump curve, but do approximate the pump curve for the largest impeller. This indicates that the impeller may not have been properly trimmed.

At the operating point, that was about 65 percent of its rating, the pumps did not overload the motors. However, there is concern that if the pumps are operated at reduced heads, the pumps will overload the motors.

Motive Water Pumps 3 and 4

These pumps could not be fully tested because there was no place to discharge the water. Therefore, these pumps were only tested at shutoff head.

The shutoff head of these pumps agrees with the rating curve and the motor amperage is satisfactory.

Column Building Sump Pumps

These pumps were tested by measuring drawdown in the building sump over a timed period. They were also tested at shutoff.

The pump test very closely approximates the pump curve, but it appears that a slightly oversized impeller has been installed in that the pumps pump slightly more than their rated curve. This results in a small (5 percent) overload on the north pump motor.

However, this is acceptable since these pumps do not operate constantly and the overload is well within the 1.15 service factor.

Effluent Water Pump (Chlorine Injector)

Because this single pump is used to supply all chlorine injection water, it could not be taken off line to give it a complete test.

It was tested by taking pressure and amperage readings when discharging to both injectors and to only one injector.

This pump does supply sufficient water to draw adequate suction for both chlorinators and is installed according to plans, specifications, and approved shop drawings.

The pump draws its full 10 hp at the rating point of 100 gpm at 200 feet. However, it was found that the pump actually operates between 165 and 180 feet. Under these conditions, the pump actually draws about 11.5 hp.

It should also be noted that there is no standby for this extremely important pump.

20-955 O—84——46

Sludge Pumps

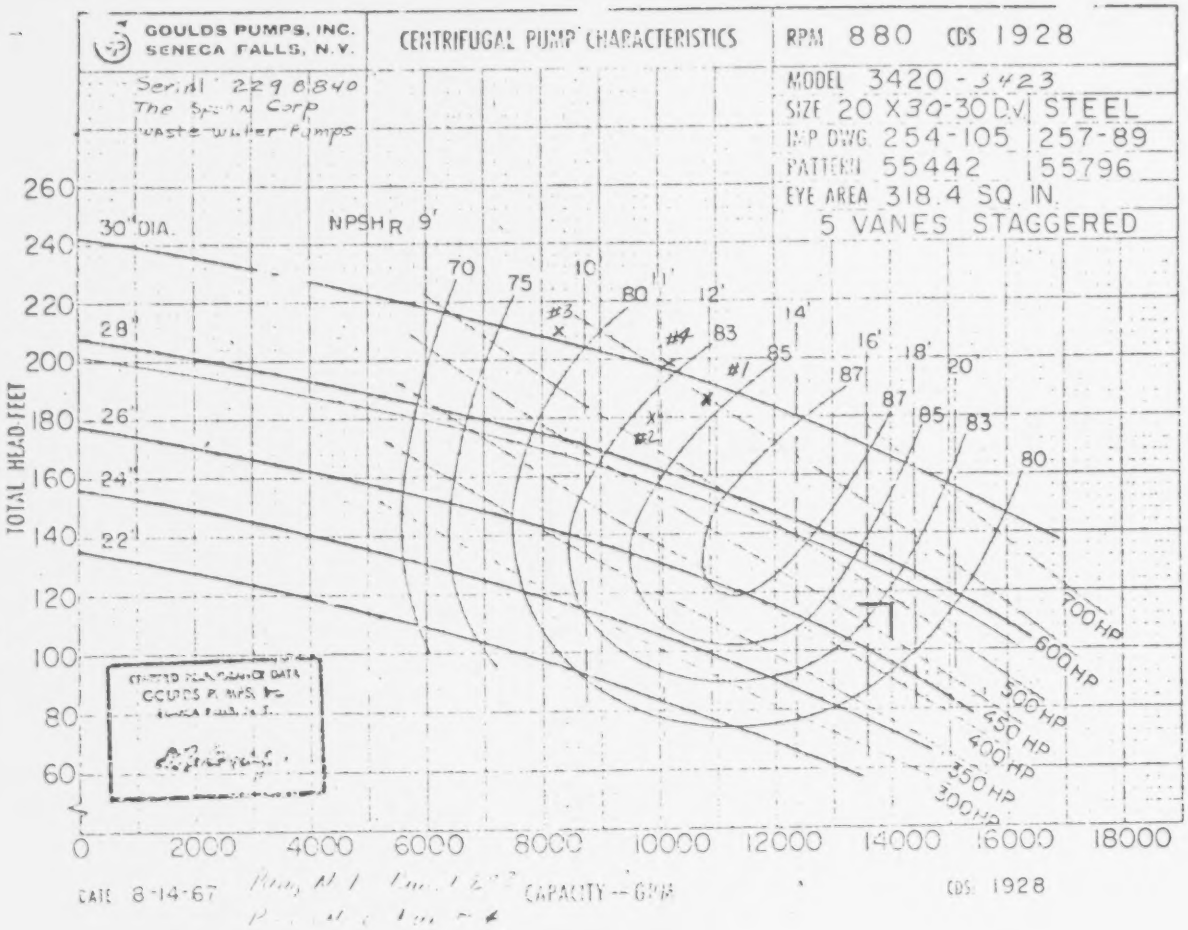
The sludge pumps were tested by simple operation of the units. Since these are positive displacement units, no capacity testing was done.

Sludge Pump No. 2 operated satisfactorily.

Sludge Pump No. 1 has seized and could not be operated. It was reported by the Plant Superintendent that the pump has operated satisfactorily in the past.

F. M. Gunby, Jr.

FMG:jfg


GOULDS PUMPS, INC.
SENECA FALLS, N.Y.
CENTRIFUGAL PUMP CHARACTERISTICS
RPM 880 CDS 1928
MODEL 3420 - 3423
SIZE 20 X 30-30 DV STEEL
IMP DWG 254-105 257-89
PATTERN 55442 55796
EYE AREA 318.4 SQ. IN.
5 VANES STAGGERED
NPSHR 9'
30" DIA.
28"
26"
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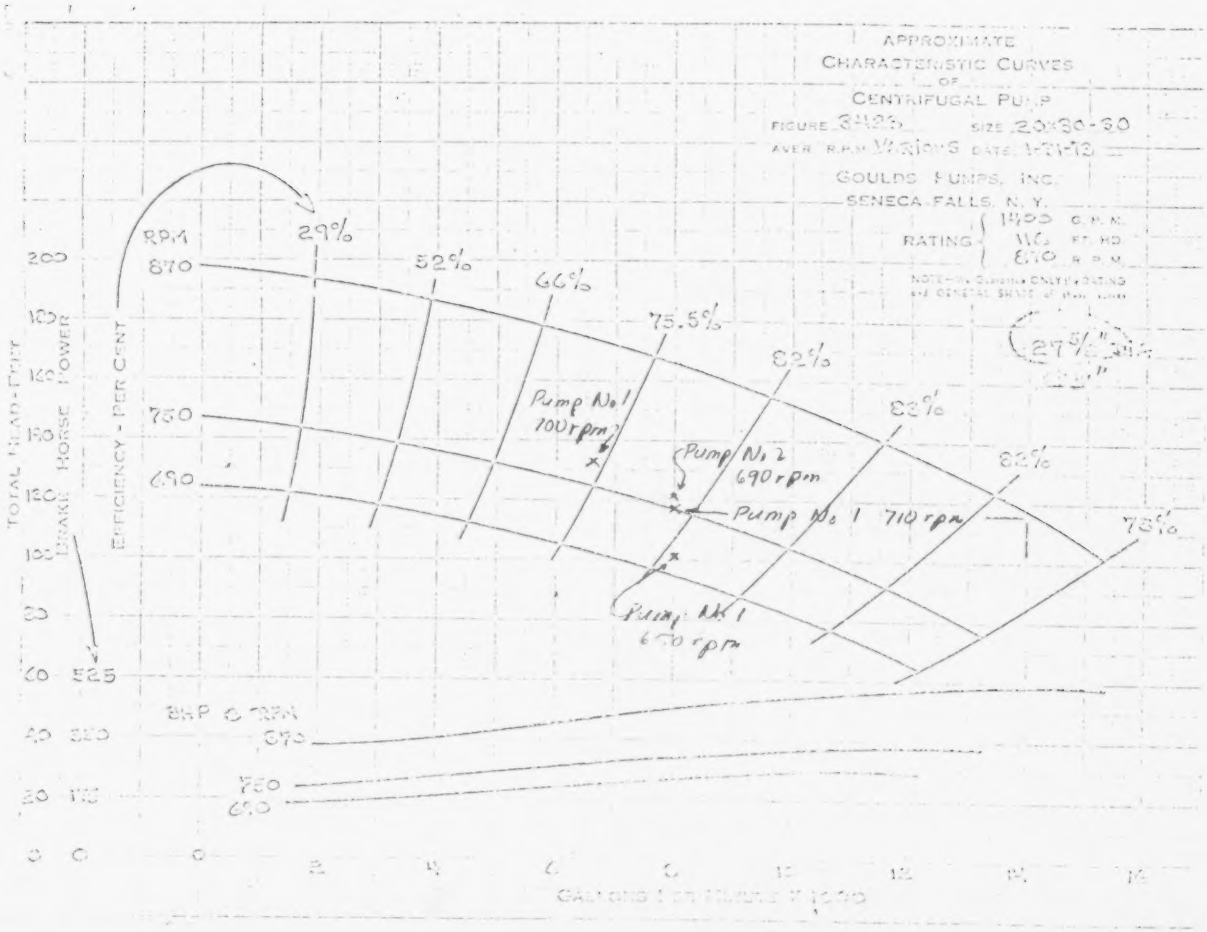
#4
700 HP
600 HP
500 HP
450 HP
400 HP
350 HP
300 HP
TOTAL HEAD-FEET
260
240
220
200
180
160
140
120
100
80
60
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
DATE 8-14-67
CAPACITY -- GPM
CDS 1928


APPROXIMATE
CHARACTERISTIC CURVES
OF
CENTRIFUGAL PUMP
FIGURE 3H23
SIZE 20x30-30
AVER. R.P.M. VARIOUS
DATE 1-21-12
GOULDS PUMPS, INC.
SENECA FALLS, N. Y.
RATING
1400 G.P.M.
116 FT. HD.
870 R.P.M.
RPM
870
750
690
29%
52%
66%
75.5%
82%
83%
82%
78%
Pump No 1
700 rpm
Pump No 2
690 rpm
Pump No 1 710 rpm
Pump No 1
670 rpm
TOTAL HEAD-FEET
BRAKE HORSE POWER
EFFICIENCY - PER CENT
525
BHP @ RPM
870
750
690
200
100
160
140
120
100
80
60
40
20
0
0
2
4
6
8
10
12
14
16

GOULDS MODEL 3175 —Performance Curves—60 Cycle Speeds | February 9, 1970 (Sup. 7/ 1/69)

CUSTOMER SPOHN CORP

INQUIRY NO. _____ DATE _____ P.O.NO. _____ DATE _____

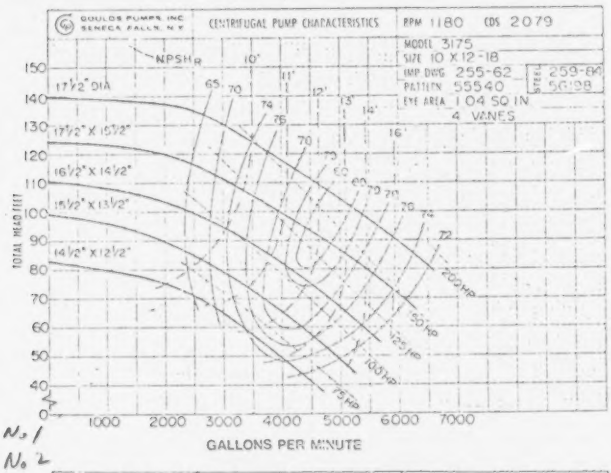
ITEM NO. _____ SERVICE Pickling

G.P.M. _____ TOTAL DYNAMIC HEAD, FT. _____

R.P.M. _____ EFFICENCY% _____ GOULDS FACTORY NO. _____

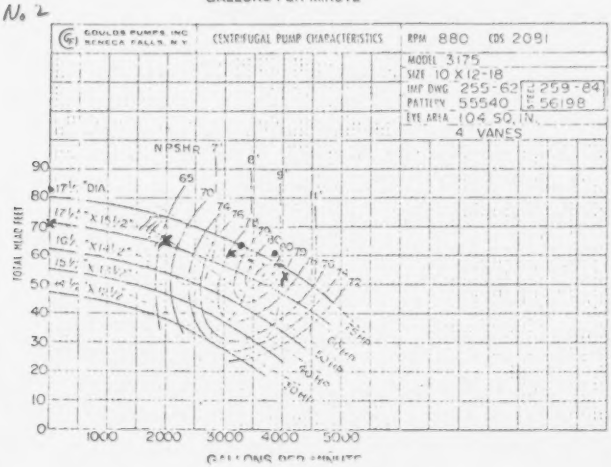
C D S NO. _____ (See curves-upper right hand corner)

Acid wash Pump



1180 R.P.M.

• Pump No 1
x Pump No 2



880 R.P.M.

GOULDS PUMPS INC.
Seneca Falls, New York, U.S.A.

GOULDS SERIAL ..2019 03336-01-02..... LIQUID WATER

CUSTOMER ...The Spokane Co.... GPM....160.....

CUSTOMER P.O. #...1552..... TDH....293'....

QUOT. OR ITEM #..... TEMP....Amb.....

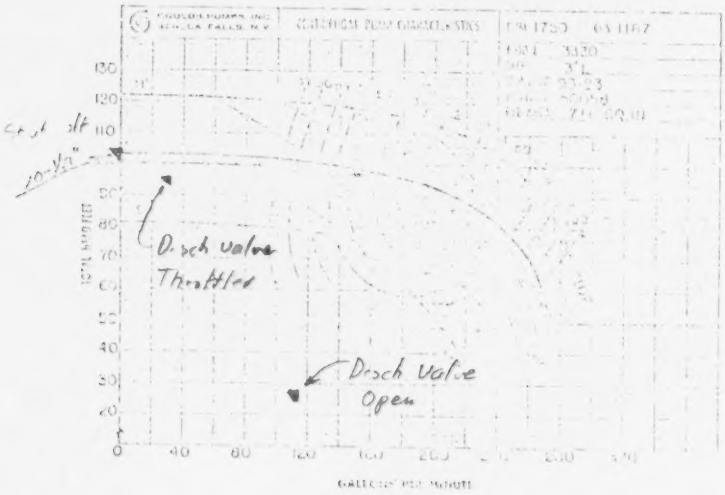
SERVICE....Surface Wash Pump... SP. GR.....

PROJECT OR YARD #..... EFF'Y..59%.... CDS....1157.....

GOULDS PUMPS, SENECA FALLS, N.Y.

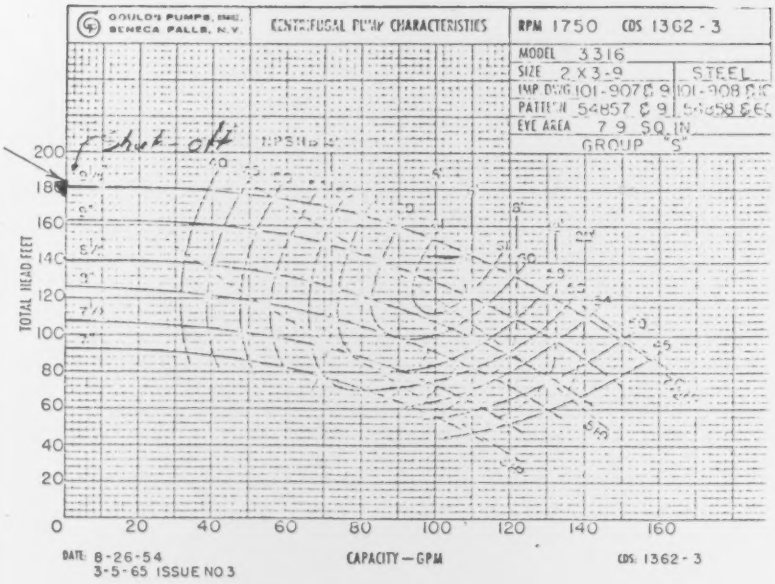
Signed Paul Ainsworth

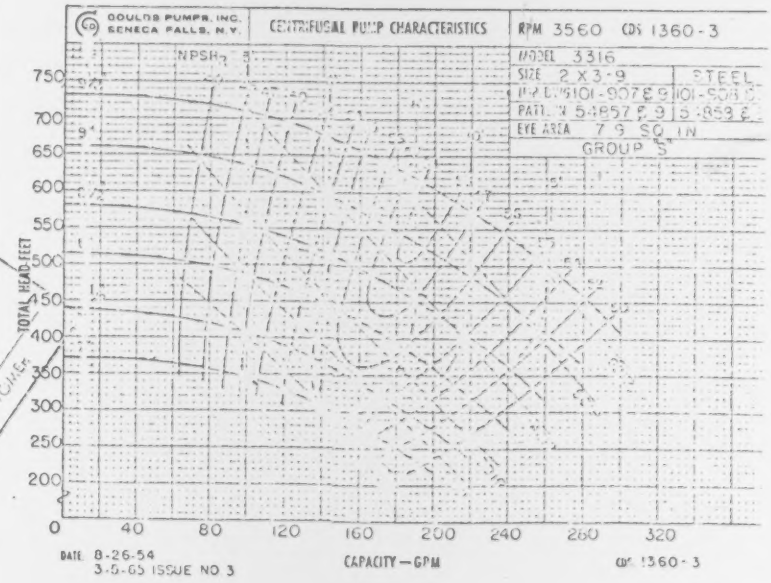
To Plot Rating, Multiply Total Head Ft. By No. of Stages.



GOULDS PUMPS INC. Seneca Falls, New York, U.S.A.

GOULDS SERIAL 22.9.8.6.27 LIQUID Water TEMP Amb.
CUST CUST. PO 1555.7
EQUIP. No. SERVICE Motive water Pumps SP. GR.





CATALOG NUMBER 2385-329-N-2 LIQUID WATER

CUSTOMER The Stone Co. GPM 765

CUSTOMER P.O. # 1557 TDH 285

SHIP. OR ITEM # TEMP

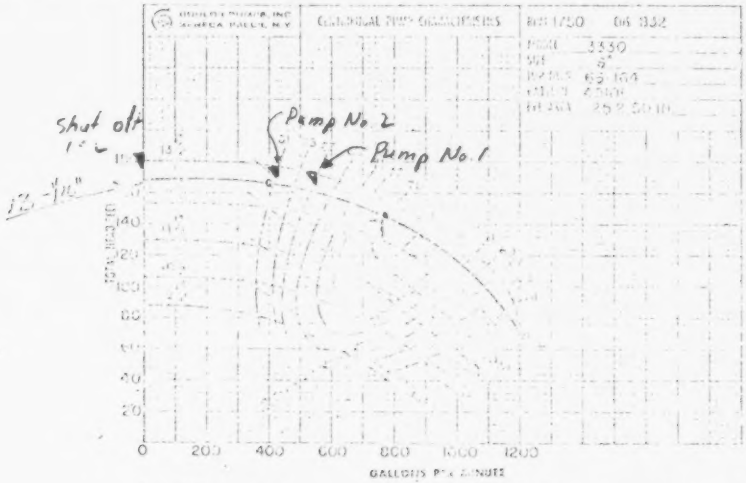
SERVICE Motive Water Pumps 1 & 2 SP. GR.

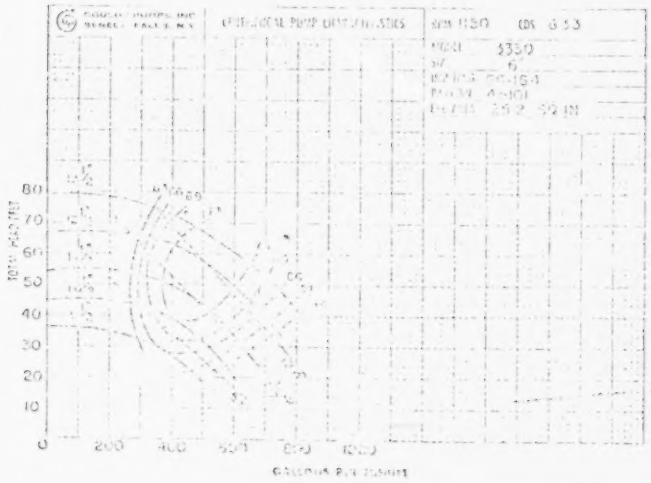
PROJECT OR YARD # EFF'Y 74% CDS. 232

GOULDS PUMPS SENECA FALLS

Signed Paul Ca

To Plot Rating, Multiply Total Head Ft. By No. of Stages.





GOULDS PUMPS INC.
Seneca Falls, New York, U.S.A.

GOULDS MODEL 3330 • PERFORMANCE CURVES • 60 Cycle Speeds

CUSTOMER .....

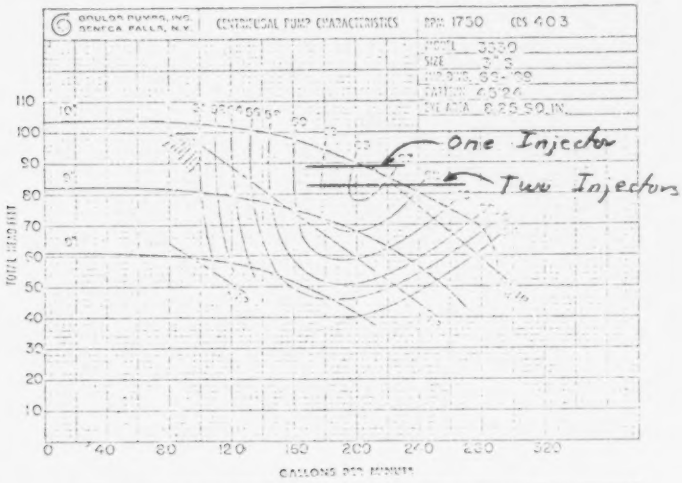
INQUIRY NO. ..... DATE ..... P. O. NO. ..... DATE .....

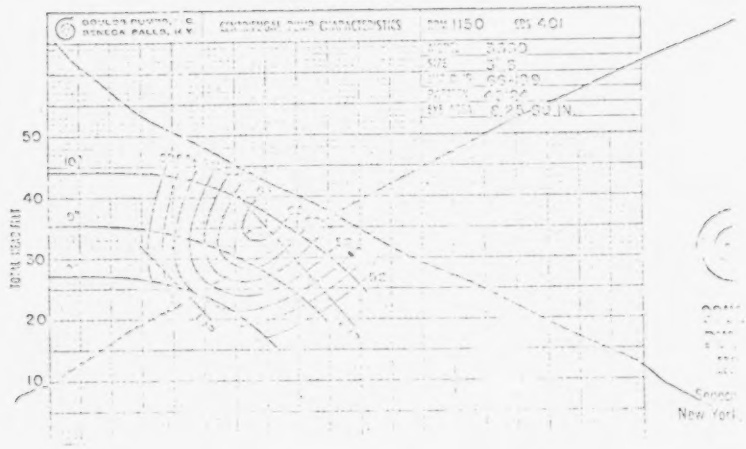
ITEM NO. ..... SERVICE EFFLUENT PUMP .....

G. P. M. 100 ..... TOTAL DYNAMIC HEAD, FT. 200 ..... BHP-9.9

R. P. M. 1750 ..... EFFICIENCY % 51 ..... GOULDS FACTORY NO. .....

C D S NO. ..... (SEE CURVES - UPPER RIGHT HAND CORNER)



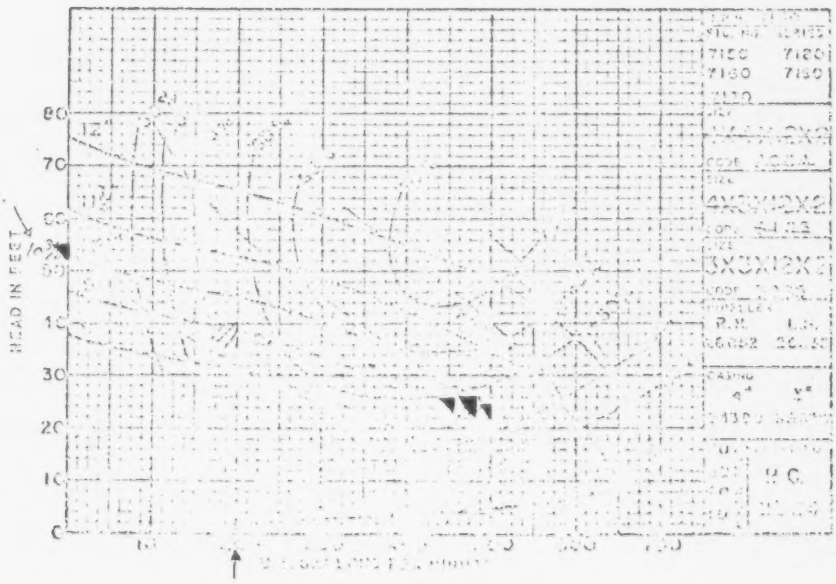


DEMING DIVISION
CRANE CO.
SALEM, OHIO, U.S.A.

SECTION 45
DRY PIT, NON-CLOG CENTRIFUGAL MPS
HORIZONTAL & VERTICAL – BULLETIN 7160

CURVE PAGE 45-4
JANUARY 1, 1965
SUPERSEDES 1961 - 6/1/64

Bilge Sump Pump



Cleveland Pump & Supply Co.
P.O. 4599 S.P. 3579

APPENDIX C

RUBBER LINING FAILURE

Metcalf & Eddy, Inc.

August 17, 1977

CSD-4862
Rocky River

Mr. Stephen Sebesta
County Sanitary Engineer
Cuyahoga County Commission
Division of Sanitary Engineering
1276 West Third Street
Cleveland, Ohio 44113

Subject: Carbon Columns Rubber Lining Failure

Dear Mr. Sebesta:

In view of the additional information with respect to the condition of the rubber lining in Carbon Columns No. 4 and 8, provided us recently by the County, and a physical inspection of these columns on August 4, 1977, it is considered appropriate that this supplement to our letter dated April 15, 1977, on the carbon column rubber lining failure be issued.

During the time of the inspections and investigations leading to our earlier conclusions, Columns No. 4 and 8 had not been emptied and could not be inspected by either our forces or those of the County. When these columns were subsequently emptied and inspected, it was found that the linings were intact.

It had been reported that the original readings on all columns were 90 or higher, suggesting complete cure. As you are aware, no data has been produced to support this; however, County staff observed and, we are told, verified the original readings.

On August 4, 1977, we were provided the results of a series of durometer readings taken by County personnel, essentially throughout the lower quarter of Column No. 4, with two readings higher in the column, which demonstrate an average Durometer A of approximately 88. (See attachment.) While this average is somewhat less than the 90 reading designated by the manufacturer as cured hardness, it should be noted that the test is inherently subject to variation.

In exploring whether Columns No. 4 and 8 were exposed differently than the others, we were advised by County personnel that the operation of these columns was such that the levels of hydrogen-sulfide and copper-sulfate and the number and extent of backwashings were similar, if not identical, to those in the six columns found to have been damaged.

The significance of the data is that Columns No. 4 and 8 have withstood the conditions of service without deterioration similar to that observed in the other columns after being cured, apparently, to the same degree. The only difference being that Columns No. 4 and 8 were the only two in which complete vulcanization was judged to have occurred at the completion of the initial curing period. In the other six tanks, readings less than 90 Durometer A were observed after the initial cure, and steam was reintroduced.

In summary, while the additional data and observations would seem to reinforce the theory of incomplete vulcanization as the most likely cause of the lining failures, (see memorandum on this subject dated August 10, 1976, copy attached) the lack of data to show the degree of original cure make a definitive statement difficult.

We are, therefore, still of the opinion that in any litigation much would be made of the physical effects of the backwashings within the columns and the control problems associated with field curing of rubber linings and that there would be much erudite testimony with respect to the effects of hydrogen-sulfide and copper on rubber, tending, we believe, to confuse a jury with some consequent risk of a finding other than one completely satisfactory to the County. However, we believe that the weight of the more recent evidence, pointing to incomplete vulcanization as the root cause of the failures, is such as to place the County in a strong bargaining position in negotiating settlement of damages with the Contractor.

Very truly yours,

J. T. Quinn, Jr., Assistant Chief
Construction Services Department

JTQ:lhs

Att.

DUROMETER A READINGS

TAKEN ON RUBBER LINING
CARBON COLUMN NO. 4

Readings were taken circumferentially, beginning at the centerline of the manway, spaced at consecutive five-foot intervals to the right. The rings were located at the heights indicated from the bottom of the rubber lining.

Ring A - 0'-6"	80	85	85	84	86	-	91	77	87	81
Ring B - 3'-6"	92	90	91	92	93	88	93	82	90	92
Ring C - 6'-6"	89	87	88	90	89	89	89	88	89	90
Ring D - 15'-6"	-	-	-	-	90	-	-	-	-	-
Ring E - 18'-6"	-	-	-	-	92	-	-	-	-	-

(Data provided by County Sanitary Engineer.)

J - 4862

Boston
August 10, 1976

MEMORANDUM FOR THE RECORD

On July 8, 1976 Messrs. Samson, Gunby, Jennings and George of Metcalf & Eddy visited the Rocky River Treatment Facility in Cleveland, Ohio to discuss several problems with the Cuyahoga County Personnel. One of the problem areas discussed was the failure of rubber linings in the carbon columns at the plant. The specifications for the project call for a three-sixteenths inch thick Goodyear type 206 LL415 rubber lining applied in accordance with the manufacturers instructions and recommendations. The drawings for the project show the rubber lining extending from four inches below the concrete fill in the bottom of the column up to a point where the domed head begins. The head was not to be lined according to the drawings.

We were informed at the meeting that the rubber lining work was subbed to Protective Coatings, Inc., who used a Uniroyal material not yet identified to us for the lining. Letters from Protective Coatings, Inc. stated that the heads should be lined and that the lining should extend to at least 8 inches below the top of the concrete fill or they would not be able to guarantee the installation. We were informed that this change order was not processed but construction photographs show the heads to be lined and indicate that the lining did extend 8 inches or more below the concrete surface in the bottom of the columns.

When one of the columns was opened because it would not function properly it was found that the rubber lining in the lower portion of the column had debonded from the wall and peeled downward to the bottom of the column. Subsequently, two additional columns were taken out of service and found to be in similar condition. Additional problems in the columns involved the apparent failure of the diffusers which were supplied by Einco and apparent corrosion of the fasteners used to secure the diffusers.

Messrs. Gunby and George were shown through the plant by K. Scheutrow, Project Manager for the County and W. Porter, Superintendent of the plant. On inspecting the carbon columns and rubber lining which had failed, it was noted that the rubber lining was applied with a two inch lap joint. The edges of the lap material were not skived in a manner to bring similar types of rubber together. That is to say, the lap was made in such a manner that the soft rubber overlapped the semi-hard

See sketches below. We were informed by K. Scheutzow that in making the lap there was no adhesive between the two layers of rubber but that the lap area was wiped with a solvent just before applying or making the lap. It should be noted that a normal procedure in making the laps or joints in rubber would be to wipe with solvent and press the edges of the raw rubber lining together so that the vulcanization process would complete the fusing of the two materials. The curing of the rubber lining was apparently performed by introducing steam into the column and then sealing the column. County personnel are unable to identify the material used other than it was a material manufactured by Uniroyal. County personnel also had not yet seen Uniroyals instructions for installation of the material. The County personnel had a copy of a recommended installation procedure that was written by Protective Coatings, Inc. No one is able to state with certainty that the procedures followed were in accordance with the Uniroyal recommendations for this material. There are no records of the length of time the steam was applied to the column, the temperature reached within the column, or how long the temperature was maintained.

On examining several pieces of rubber lining which had been removed from the columns it was found that the lap joint could be easily separated indicating improper joining of the material, which could be due to either poor procedures or improper vulcanization. We were informed that the original durometer hardness of the material after curing (vulcanization) was 90. The durometer hardness of the material now is reported to be 70 indicating some deterioration in the lining. On reaching into the columns it was possible to grasp a portion of the lining that was hanging from the wall and to pull on the lining removing it still further from place indicating improper bond of that part of the lining to the steel wall of the column. Where the lining has peeled from the wall there is extensive rusting of the steel, although the steel did not appear to be very badly pitted at the time of our inspection. In one section on column No. 7 a portion of the lining has been peeled from the wall by County personnel exposing a gray white steel surface indicating that proper surface preparation was probably performed but that the bond of the rubber to the steel is insufficient.

It was further reported to us that Uniroyal has made several trips to the sight to investigate potential causes of failure and is now preparing a report to the County of their findings. The report was scheduled for completion about the middle of July and we have requested a copy of the report.

The inspection of the columns also reveal that numerous diffusers had warped, possibly from high temperature. This

could account for carbon loss because the warped diffusers do not close tightly in normal operation and could allow carbon to enter the air piping. Additionally, some of the diffuser pipes have rotated indicating the application of a large torque (perhaps during air scour, from partially clogged diffusers).

The bolt holding the defuser in place appears to be a stainless steel bolt approximately 4 inches long with a nut on the threaded end. The corrosion of the fastener that was observed primarily involved the nut which was, in some cases, practically nonexistent. In other instances the nut was badly corroded indicating severe pitting attack. Mr. James Pickering, Superintendent for Spahn Co. (the general contractor) provided us with a new bolt and nut which he stated were furnished by Eimco who provided the diffusers. Mr. Pickering stated that he had tested the bolts and nuts with a magnet and found that they were nonmagnetic thus indicating that they were stainless steel. We have applied a magnet to the nuts and bolts provided by Mr. Pickering and find that they are nonmagnetic. Mr. Pickering also informed us that when we were installing the diffusers they were concerned that the nut might work loose thus allowing the diffusers to fall off and they tried several means of fastening the nut in place. On some of the fasteners they attempted to deform the threads with a center punch but felt that that was insufficient. On others a tack weld was tried but it was found that the heat build up was excessive and could damage the plastic washer on the diffuser, therefore, they resorted to applying a rubber cement material on the nut and exposed threads in order to secure the nut in place. All of the nuts that we so coated appeared to have corroded to the point where some have almost entirely disappeared. There has also been slight attack of the threads on the bolt in the area where rubber cement was applied to hold the nut in place. There is no information from Eimco relative to the alloy used in the fasteners. This information should be provided although it may be academic because it would appear desirable to have a diffuser system that would remain operable under the service conditions.

Conclusions and Recommendations

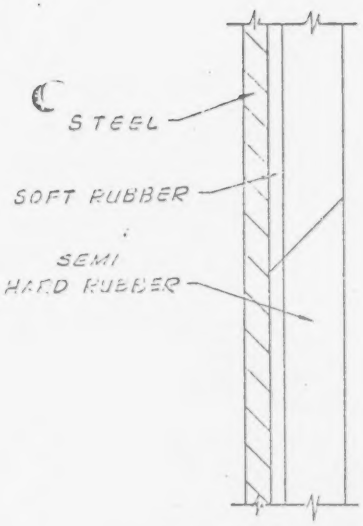
Corrosion of the wall of the columns can be expected to progress rapidly. It is probable that the corrosion will proceed to a point where severe damage will take place making it very difficult, if not impossible, to reline or coat the surface. The poor operation of the air scour system and the

large carbon loss which is being experienced indicate that the columns are not operating properly and that the expenses of operation are inordinate. Based on the corrosion damage and carbon losses it is recommended that the carbon columns be taken out of service at this time and corrective measures investigated immediately. Shutting down the carbon columns will still leave the plant in operation producing a better effluent than that produced by the primary plant before expansion. Continued operation of the carbon column is of dubious value at this time and will result in increased corrosion damage and carbon cost. Investigation and recommendations for repairs to the columns will necessitate removing them from service so as to assess the full damage and to perform the repairs. Uniroyal should be required to identify the material used in the columns and its suitability for the service. They should also provide their written instructions and recommendations for application of the material and a recommendation for repair or replacement of the lining. If the corrosion of the fasteners holding the diffusers in place is to be pursued we will need further information as to the alloy of the fasteners. We can conduct tests on the fasteners supplied to us to determine the suitability of the alloys for this service. In view of the fact that the diffuser system currently in the columns does not appear to be able to withstand the operating conditions, it is recommended that the air scour system be rethought so as to provide a proper operating system.

G. S. George

G. S. George

GSG:kw:jfg



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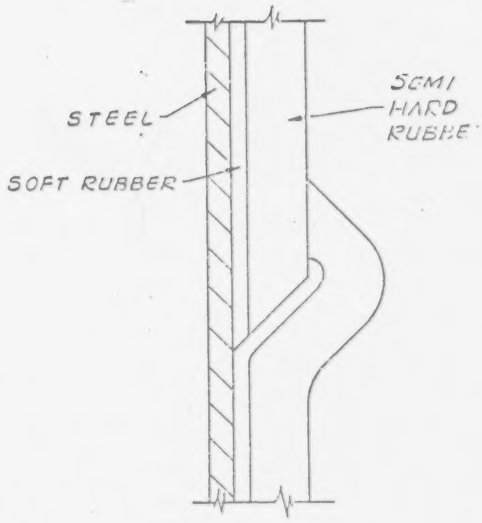
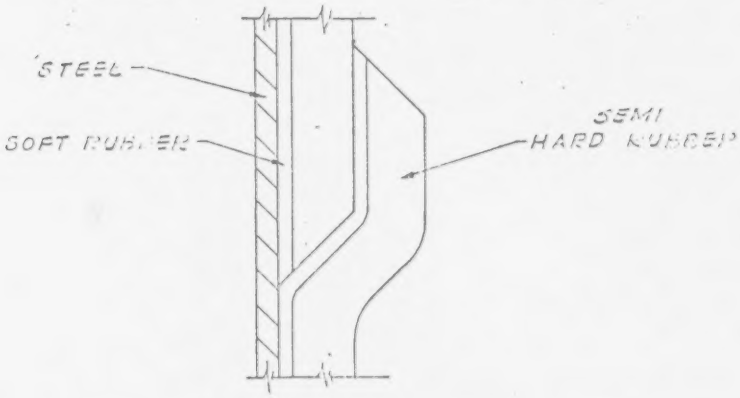


WHEN 2" LAPPED



THESE JOINTS ARE

50 Staniford Street Boston Massachusetts 02114
617/523-1900 TWX 710 321 6365 Cable Address METEDD-Boston

Metcalf & Eddy, Inc.

April 15, 1977

CSD-4862

Mr. Stephen Sebesta
County Sanitary Engineer
Cuyahoga County Commission
Division of Sanitary Engineering
1276 West Third Street
Cleveland, Ohio 44113

Subject: Carbon Columns Rubber Lining Failure

Dear Mr. Sebesta:

The purpose of this letter is to review the facts of the procurement and installation of the subject rubber linings to determine the extent of responsibility of the Contractor for the lining failure.

The Contract requires that the Contractor furnish materials and perform the work in accordance with the requirements of the detailed Specifications in a workman-like manner generally consistent with standard practice.

Item 12.7 of the detailed Specification states that the rubber linings shall be of 3/16-inch thick B. F. Goodrich Type 206LL415 or an approved equal and that the installation shall be in strict accordance with the manufacturer's standard procedures and recommendations.

Taking the matter of material first, the Contractor actually used Uniroyal Type 5720-5660 Rubber and did so without specific approval by the County for this substitution.

When asked subsequently to establish the technical equivalence of the Uniroyal material, the Contractor produced comparison charts prepared by Goodrich which appear to indicate that the Uniroyal rubber is a competitive equivalent grade of semi-hard rubber to the Goodrich Type 206LL415 specified.

Having determined from the Rubber Manufacturerers' Association and others that there is no industry-wide authoritative source providing such comparisons, we are inclined to accept the data submitted to the effect that the materials are equivalent and believe further that had this data been presented prior to the application of the rubber, it probably would have been accepted as an equivalent by the County.

The installation of the lining, performed under a subcontract by Protective Coatings, Inc., was specified to be in accordance with the rubber manufacturer's instructions. The Contractor has subsequently submitted Uniroyal Specification No. 6-67 which generally describes the recommended procedure. Also subsequently submitted was a copy of Protective Coatings' "Procedure for Application of Rubber Linings" with a statement by Uniroyal that it is an acceptable general specification for conventional tank lining applications. The requirements of each are similar as follows:

1. Preparation of surface by sandblasting to white metal - We are told this was observed by County personnel and by Solar Testing on behalf of the County and was accepted.

2. Use of proper adhesive - Data has subsequently been submitted to the effect that the adhesive specified by Uniroyal for this rubber was furnished by Uniroyal and used by Protective Coatings.

3. Uniroyal recommends that joints be overlapped at least 2 inches - Protective Coatings adds that overlapped joints shall be skived and turned down, which we understand to be common practice in the rubber lining industry. The latter was not done entirely; the joints are skived, but not turned down thus exposing a small area of the soft rubber to the chemical and physical conditions within the columns. (See enclosed sketch.)

4. Vulcanization - After installation, the rubber is to be vulcanized by the introduction of atmospheric steam so as to maintain a temperature of approximately 200°± F within the vessel for a minimum of 36 hours and until the rubber reaches a Durometer A hardness of 90.

   To the best of our knowledge, there are no formal records available indicating the procedures, temperatures, and duration of cure or of the hardness readings. We were told, however, by Protective Coatings that the linings were cured one tank at a time by steam introduced at the bottom for an average of 36 hours each. Protective Coatings had a supervisor on the site during this operation, at least, during the day shift; the General Contractor's personnel watched the operation during overtime periods. Durometer readings were taken at the bottom of each tank to determine the completeness of the cure and, we understand, were witnessed by County inspectors. The cure was considered complete by the applicator for each vessel when a reading of 90 was obtained in the bottom.

It would appear from the foregoing that the surface preparation, application, and cure were essentially as recommended by the manufacturer with the possible exception of the joint construction in the fact that the overlap was not turned down, i. e., back to the adjacent surface to give a smooth appearance, as stated in Protective Coatings' own specification.

After several months in operation, however, the rubber lining in most of the tanks was found to have failed; in essence, the first horizontal joint from the bottom separated and the bottom row of rubber sheets separated from the wall to varying extents. It is presumed that the adhesion of the rubber to the wall and rubber to rubber at the joints had both failed. This is borne out by our own observation that the lapped joints in failed sections could be easily separated by hand and that sheets still adhering to the walls below a failed area could be peeled down further without difficulty.

Since the adhesion process of both rubber to steel and rubber to rubber depends on complete vulcanization and given the fact that Durometer A readings, taken on the rubber within the areas of failure after the failure, averaged 70, the cause of the failure was initially presumed to be incomplete vulcanization.

To refute this presumption, the Contractor engaged the professional services of Edglo Laboratories, Prof. Shelton of Case Western Reserve University, and the Institute of Polymer Sciences at the University of Akron. Subsequently, at the County's request, Uniroyal itself was asked to investigate the failure and to comment on probable cause.

While the conclusions drawn by these several parties are somewhat contradictory, the following causative factors appear to be involved:

1. Some degree of undercure in the bottom areas of the tanks, although probably not to the extent indicated by the Durometer A 70 readings.

2. Some degradation of the rubber after vulcanization, possibly due to both hydrogen-sulfide and copper. Although there is some difference of opinion between Uniroyal and the authorities engaged by the Contractor as to the effect of hydrogen-sulfide on the rubber, there is universal agreement that copper has a deleterious effect on rubber.

3. The physical effect of the air scour and the ram effect of the carbon bed upon cessation of backwashing acting on horizontal lapped joints.

Given these factors, we believe it impossible to assign sole and complete responsibility for the failure to the Contractor. While the joint detail and the extent of cure is suspect, we believe it would be difficult to prove that these factors alone resulted in the failure. The apparent degradation and/or the physical effects of backwashing and air scour, both completely beyond the Contractor's control, we believe, contributed materially to the failure. The inability to assign sole responsibility for the failure to either the material or the workmanship makes it difficult to assess the extent of actual damages to the County for which the Contractor might be held responsible. We believe, therefore, that the

County's interest would be best served in relieving the Contractor of any responsibility for the failure, considering it rather to be one aspect of the research and development project which proved to be undesirable. To do otherwise would require, we believe, prolonged and costly litigation of uncertain outcome and might, in fact, delay the more important considerations of developing a waste treatment facility to meet the NPDES requirements.

Very truly yours,

METCALF & EDDY, INC.

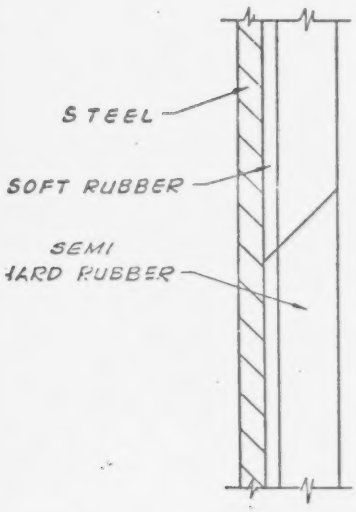
J. T. Quinn, Jr., Assistant Chief
Construction Services Department

JTQ:lhs

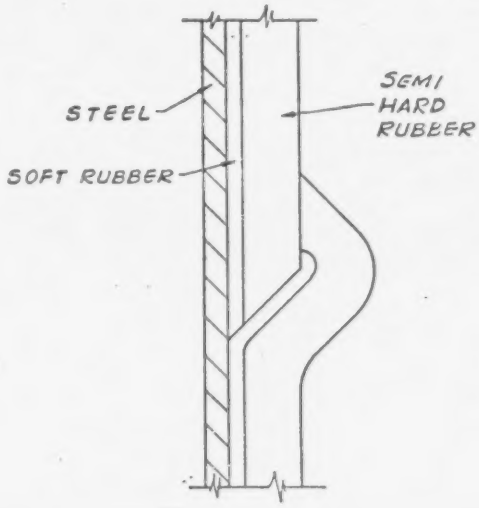
Enc.

bcc: F. Sampson

NORMAL SKIVED JOINTS



NO LAP



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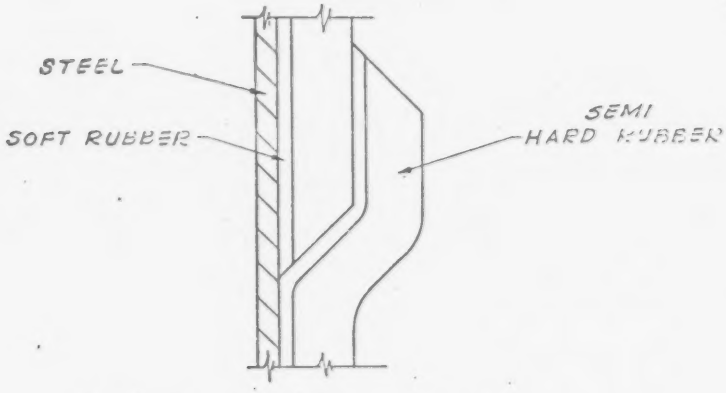

AS INSTALLED
AT ROCKY RIVER

APPENDIX D

SLUDGE INCINERATOR

J - 4862 3/30/77
DB/caw

MEMORANDUM FOR THE RECORD

SUBJECT: Rock River STP
Sludge Furnace Inspection
By Nichols Engineering

1. The report on the Sludge Furnace dated 12/23/74 has been reviewed.

1.1 Moisture content should be reduced as much as practicable to reduce the fuel used.

3.6 Continuous operation is more economical than intermittent operation, because of the high fuel cost for maintaining furnace temperatures.

1.9 Delivering by-pass air to the I.D. Fan inlet is patented by Nichols. If competitive bidding is desired other options should be permitted such as air to the scrubber discharge for plume suppression.

1.10 Depending on the design of the air ducts, additional dampers may not be required.

2.1 The guillotine damper and associated controls could be eliminated from the system to improve the operating efficiency. Such large dampers leak, increasing power requirements.

2.2 Additional controls should also be provided for the by-pass damper to permit partial closing when the furnace is in a stand-by mode to conserve heat.

3.2 It is recommended that the exhaust gas system be sized for 150% excess air at rated capacity and have a 50% turn down capability.

3.4.1 The material of construction of the venturi throat is questioned. A more durable material such as Hastalloy "C" or tungsten-carbide should be provided.

3.5.2 Additional requirements should be included for the I.D. Fan to limit noise generation.

3.6.7 Inertia pads should be required.

3.6.9 A variable speed drive should be considered in lieu of inlet vane control to permit greater flexibility in control and permit utilizing of more sophisticated instrumentation now availabl

4.3 Excess air burners are not recommended. Such air cannot be controlled. Considerable fuel is required to raise the temperature of the air.

4.13 FIA is now called Industrial Risks Insurers.

2.0 A thirty day operation period should be required as part of the testing as well as detailed operator training.

GENERAL

The proposal covers the major areas requiring modifications to the furnace, however considerable refinement and detailing is still required which could be accomplished with the contract drawings and specifications. Some of the underlying assumptions should no longer be valid for this change. i.e.

sludge cake moisture
cost of fuel
availability of fuel
additional APC requirements

Heat balances should be required to cover the anticipated range of operation and not just one condition.

The brick, refractory, mortar and insulation in the furnace after such a long period could have been adversely effected by factors which could serverely reduce their life. Such factors may not become apparent until the unit is placed in operation. An inspection by a refractory expert should be made, independent of the furnace manufacturer.

After such a long idle period there is the possibility of additional problems arising in any rotating or moving parts.

R. Buell
RB/caw
CC: Tarlow
Sampson

Nichols
Subsidiary of
Neptune Meter Company

Nichols Engineering & Research Corporation
Homestead & Willow Roads Belle Mead, New Jersey 08502 Phone (201) 359-82C
Cable Address Nercodel BLMD Telex 833 408

December 23, 1974

Mr. John H. Puzenski, County Sanitary Engineer
County of Cuyahoga
1279 West 3rd Street
Cleveland, Ohio 44113

Subject: Rocky River Sewage Treatment Plant
Sludge Furnace Inspection and Report

Dear Mr. Puzenski:

In accordance with the resolution adopted by the Board of County Commissioners on July 29, 1974, we are pleased to submit the subject report.

The report has been prepared in the form of detailed specifications deliniating the required modifications to the furnace. Our recommendation for necessary spare parts and a description of the physical integrity of the facility, preceed the detailed specifications.

We would like to extend our thanks to Mr. Paul Beck and the plant personnel for their assistance during our two inspection visits to the plant.

Very truly yours

Jerome Resnick

Jerome Resnick
Regional Sales Representative
Environmental Sciences Division

JR/jap
Enc.
cc: Mr. Paul V. Beck

INCINERATOR INTERIOR

LOCATION	COMPONENT	CONDITION	REMARKS
Hearth "0"	Roof Brick	Very Good	
	Burner Tiles	Good	(2) Burners Firing Tangentially
	Gas Outlet Breech	Good	
	Thermocouple	Good	In Gas Outlet
	Shaft Insulation	Very Good	
Hearth 1	Arch Brick	Very Good	"Out" Hearth
	(4) Arms	Very Good	Uninsulated
	Teeth	Good	
	Thermocouple	Good	
	Shaft Insulation	Good	No Insulation Over Arm Pin Holes*
	Lute Ring	Good	No Burners
Hearth 2	Arch Brick	Good	"In" Hearth
	(2) Arms	Very Good	Uninsulated
	Teeth	Good	
	Shaft Insulation	Good	No Insulation Over Arm Pin Hole
	Thermocouple	Good	No Burners
Hearth 3	Arch Brick	Good	"Out" Hearth
	Burner Tiles	Good	(2) Burners Firing Tangentially
	(2) Arms	Good	Uninsulated
	Teeth	Good	
	Thermocouple	Good	
	Shaft Insulation	Good	No Insulation Over Arm Pin Hole
	Lute Ring	Good	
Hearth 4	Arch Brick	Very Good	"In" Hearth
	(2) Arms	Very Good	Uninsulated
	Teeth	Very Good	
	Thermocouple	Good	
	Shaft Insulation	Good	No Insulation Over Arm Pin Holes* (2) Grease Feed Pipes.
Hearth 5	Ash Outlet	Good	"Out" Hearth
	(4) Arms	Good	Uninsulated
	Teeth	Good	
	Lute	Good	
	Thermocouple	Good	
	Shaft Insulation	Good	No Insulation Over Arm Pin Holes*

* These holes should be cleaned out & filled with Quigley's "Insulag" or

A. General

1.0 This section shall include the furnishing and installation of equipment to modify the existing sludge incinerating equipment as indicated on the Contract Drawings and in conformance with the following specifications.

2.0 Essentially the modifications shall consist of the addition of an adjustable throat venturi impingment scrubber, scrubber water supply and drain piping, induced draft fan, combustion air fan, dampers, burners and burner tile, thermocouples, controls and fuel supply piping.

3.0 The existing installation consist of one (1) Nichols Engineering and Research Corp 18'-9" diameter by 5 +0 hearth incinerator having a rated capacity of approximately 6200 lbs/hr of wet sludge filter cake.

4.0 The Contractor shall be responsible for inspecting the system and conditions to determine the extent of difficulty and work to be performed in installing equipment and/or modifying existing equipment and structures. No added compensation will be allowed for the alteration of visible equipment or conditions after award of Contract.

4.1 Where the existing building structure is damaged or disturbed during the installation of the modifications, or removal or relocation of existing items or installation of new items, or where unused openings are left by removal of existing items, the disturbed or abandoned area shall be restored to its original state to a degree satisfactory to the Engineer.

5.0 The existing sludge incinerator modifed under this section shall be guaranteed as to performance by the Contractor in addition to any other guarantees required under the General Conditions of this Contract. Such added guarantee covering operational results of the installed equipment shall be included as part of the bid and shall be designated as "Equipment Performance Warranty of Sludge Incinerators". The Warranty shall be as hereinafter specified.

6.0 All equipment shall be equal to equipment manufactured by the Nichols Engineering and Research Corporation of Belle Meade, New Jersey or approved equal. Existing equipment was manufactured by Nichols Engineering and Reserach Corporation.

6.1 For optimum installation, the Contractor shall designate the manufacturer as the subcontractor as provided by the Contract Documents.

OMMENDED SPARE PARTS:

) Alloy Rabble Arms

Set of Brick for (1) "in" hearth consisting of:

(100) A-9173-13 Special Shape
(105) A-9173-10 Special Shape
(920) 9" straights (standard 9" x 4½ x 2½)
(930) #1 arches (standard 9" x4½ x (2½-2 1/8)
(240) #1 wedges (standard 9" x 4½ x (2½ - 1 7/8)

Set of brick for (1) "out" hearth consisting of:

(35) A-9173-13 Special Shape
(35) A-9173-8 Special Shape
(35) A-9173-9 Special Shape
(650) 9" Straights (standard 9 x 4½ x 2½)
(900) #1 Arches (standard 9 x 4½ x (2½ - 2 1/8)
(20) #2 Arches (standard 9 x 4½ x (2½ - 1 3/4)
(240) #1 wedges (standard 9 x 4½ x (2½ - 1 7/8)

) Shaft section A-4194-53 (C.I.)

2) A-4800-8B Shear Pins

) set of spare Nercalloy 12 rabble teeth:

3)	9116-AR	(3)	A-3657-AI
4)	9116-BR	(2)	A-3657-A
)	9116-AX	(2)	A-3657-AXI
)	9116-BX		

OTAL PRICE: $20,000.00

Nichols Engineering & Research Corporation

C. Capacity of Installation

1.0 The sludge ~~incinerator~~ installation shall be capable of incinerating 6200 lbs/hr ~~of sewage~~ sludge filter cake resulting from the dewatering of primary or digested sludge and 1 gpm maximum of grease.

1.1 Capacity rating shall be based on sludge filter cake having the characteristics set forth in paragraph "D".

2.0 In addition to the design rated capacity stipulated above, sludge incinerator shall be capable of incinerating dewatered sludge filter cake satisfactorily and without obnoxious odors, excessive smoke or fly ash and not to exceed the particulate and smoke emission standards specified hereinafter when operating over a range of loading varying from fifty percent (50%) to one hundred percent (100%) of the designed rated capacity.

2.1 The calculation of capacity when made for purposes of determining compliance with the Warranty will be based upon the design rated capacity of sludge filter cake and will be adjusted to the characteristics of the actual filter cake received, if such varies from the assumed characteristics given in paragraph "D".

3.0 The design of the installation shall be such as will burn the specified tonnage of dewatered sludge filter cake and grease in such a manner that will meet the terms of the Warranty herein, and to a sterile ash free from putrescible organic material or other odorous solids and containing not more than four percent (4%) volatile matter by weight.

Nichols Engineering & Research Corporation

B. Equipment Performance Warranty of Sludge Incinerator

1.0 The Contractor hereunder, and as conditions of his proposal, does state and warrant that the sludge incinerator of this proposed installation when incinerating vacuum filter sludging having the characteristics given in paragraph "D" of this Specification, and at the rate given in paragraph "C" of this Specification, and when operated for incineration according to the test procedure specified shall be free from nuisance of dense smoke, acid or other fumes, noxious gases, strong odors or excessive dust, dirt or fly ash and shall meet all pollution control requirements of the Specification at time of Bid.

D. Basis for Design, Warranty & Testing

1.0 Design of the installation shall be based upon meeting the operating requirements specified hereinafter, using the following assumptions in determining performance and in operating costs under tests, for compliance with the Warranty. Actual test conditions will be corrected to the basis given herein for determination of compliance with warranty.

1.1 Specific Heat Coefficients

Water Vapor	0.47
Air	0.24
Nitrogen	0.25
Carbon Dioxide	0.24
Dry Sludge Cake	0.20
Ash	0.20
Water	1.0
Oxygen	0.20

1.2 Ultimate Analysis of the Sludge Cake Combustibles

	Primary	Digested
Carbon	55.8%	
Hydrogen	8.2%	
Oxygen	31.0%	
Nitrogen	5.0%	
Sulfur	0	

1.3 Filter Cake Characteristics

	Primary	Digested
Moisture Content, Percent	78%	78%
Total Solids Content, Percent	22%	22%
Combustible Solids Content, Percent Dry Solids	60%	44%
Ash Content, Percent Dry Solids	40%	56%
Heat Value of Combustibles BTU/dry lb	10,000	10,000

2.0 Auxiliary Fuel Characteristics

	Natural Gas	Diges Gas
2.1 Gross Heat Value	1000 BTU/Ft^3	BTU/

Heat values used for warranty test purposes will be determined by test.

:. Operating Requirements

1.0 The sludge incinerator shall be capable of operating at the adjusted tonnage capacity of sludge filter cake without smoke, fly ash, or odor nuisance over a range of sludge filter cake characteristics as follows:

1.1 Moisture content from 70 to 82 percent.

1.2 Combustible solids content from 35 to 60 percent of dry solids

1.3 Heat value of combustible from 9500 to 11000 BTU/lb.

2.0 The Contractor during the warranty test shall provide for the services of an independent testing laboratory acceptable to the Engineer to determine the characteristics and chemical analysis of composite samples of the vacuum filtered sludge cake as well as the heat value per pound of combustible solids, the ash content and the moisture content and the specific gravity and high heat value of the fuel used.

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3.0 Miscellaneous Factors

3.1 Base temperature of materials to be used is 60 °F.

3.2 Relative humidity - 85%

3.3 Excess air for combustion of sludge volatiles is 75% minimum.

3.4 Excess air for combustion of auxiliary fuel is 15% minimum.

3.5 Gas Outlet temperature is 800 °F minimum.

3.6 Operating period, Five (5) - Sixteen (16) hour days per week.

F. Incinerator Equipment

1.0 Sludge Combustion Air System

1.1 A complete new sludge combustion air system shall be furnished and installed for the sludge incinerator. Systems shall be complete with fans, motors, ducts, dampers, controls, refractory lined inlets, etc. arranged to provide adequate sludge combustion air as may be required for all conditions of sludge combustion as hereinafter specified.

1.2 The supply ducts shall terminate in refractory lined openings at the incinerators.

1.3 A pneumatic motor operated damper shall be provided in hearth air supply header duct for all the inlets on any one hearth.

1.4 Dampers shall be automatically and simultaneously controlled by the continuous oxygen analyzer and shall allow manual control from the central control panel.

1.5 A minimum of three (3) auxiliary air inlets shall be equally spaced around each of two hearths, minimum six (6) total.

1.6 Each inlet on each hearth shall be provided with a fixed orifice between air supply header and the hearth connection to assure equal supply through each inlet on that hearth at any position of the control damper.

1.7 Each fan shall be backwardly inclined blade, non-overloading centrifugal type, complete with a minimum two (2) HP motor, V-belt drive and drive guard. Outlet velocity of the fan shall not exceed 3600 FPM.

1.8 A pneumatic motor operated automatic multi-blade type control damper shall be provided on the inlet side of each fan to automatically control the air supply pressure to the system. Manually adjustable control stations shall be provided at the central control panel to manually set the point of the air supply pressure.

1.9 A new by-pass air duct shall be provided to deliver heated central shaft cooling air into the ductwork at the incinerator induced draft fan inlet.

1-10 A new floating type damper shall be provided in each existing air duct to the atmosphere. It shall be provided with counter weights to open automatically on power failure, induced draft fan failure, or loss of control air pressure.

3.3 The incinerator exhaust gas system shall be so designed that;

3.3.1 The dust concentration of the gases discharged to the atmosphere shall not exceed 1.3 lbs per ton of dry solids charged to the incinerator.

3.3.2 The smoke opacity as emitted from the exhaust stack shall not exceed twenty percent (20%) (1 Ringleman Number) for more than two (2) minutes in any one hour.

3.4 The exhaust gas scrubber shall be an adjustable Venturi high energy type designed to effectively remove dust particles from the flue gases and cool the flue gases to the final temperature herein specified.

3.4.1 The scrubber shell shall be fabricated of 316 ELC stainless steel not less than one-quarter (1/4) inch thickness and shall furthermore contain sufficient metal shell thickness or shall include sufficient stiffeners designed to withstand an internal negative pressure of forty (40) inches water column. Construction shall also be suitable for 400°F., maximum inlet gas temperature.

3.4.2 All internal welded components shall be 316 ELC stainless steel. All internal non-welded components shall be 316 ELC stainless steel. All support legs, angles, plates, etc. welded or attached to the scrubber and not in contact with or exposed to the flue gases shall be carbon steel.

3.4.3 The scrubber Venturi plate or throat area adjustment shall be pneumatic motor operated capable of being adjusted to any position between its open and closed limits. The Venturi adjustment shall be from the central control panel.

3.4.4 All piping and valves required for the water supply to the scrubber shall be included. The unit shall be designed to use plant effluent water.

3.5 The incinerator induced draft fan installation shall be capable of producing the necessary draft for operation of the incinerator, pre-cooler, wet type gas scrubber ducts, breeching and stack when the incinerator is operating at any load up to the maximum loading specified.

3.5.1 In addition to the capacity specified in paragraph 3.2 of this sub-section, adequate capacity shall be added to allow for the induction of center shaft cooling air into the draft fan inlet.

3.5.2 The incinerator induced draft fan shall be capable of delivering a minimum 4500 acfm at nominal static pressure of thirty (30) in. w.c. Outlet velocity shall not exceed 6000 feet per minute.

3.5.3 The induced draft fan shall be complete with a minimum Forty (40) Hp electric motor, V-belt drive and belt guard. Belt assembly shall have a minimum service factor of 1.5.

3.5.4 All surfaces of the incinerator induced draft fan exposed to flue gases and vapors shall be constructed of stainless steel.

3.5.5 Fan scroll sheets and side sheets shall be constructed of 316 ELC stainless steel having a thickness of not less than one -quarter (¼) in. The fan wheel spider, inlet cone, float cage, shroud plates, rim plates and back plates shall be constructed of 316 ELC stainless steel. The fan wheel blade shall be of the radial flat blade type constructed of 316 ELC stainless steel having a thickness of not less than three-eights (3/8) inch and shall be welded to the fan spider arms.

3.6.6 The induced draft fan shall be of special dust-tight construction with asbestos gaskets and cemented joints on all bolted connections. The scroll sheets shall be welded to the side sheets and in general the fan shall be of welded construct

3.6.7 Vibration isolator mounts of approved design shall be utilized to absorb vibration.

3.6.8 Each induced draft fan shall be lined with removable wear plates of the same material as the fan scroll and side sheets. Liners or wear plates shall have a minimum thickness of three-sixteenth (3/16) in.

3.6.9 The incinerator induced draft fan shall be provided with a pneumatic motor operated inlet van damper for capacity control. All surfaces of the damper housing, vanes, or other parts exposed to the flue gases shall be constructed of 316 ELC stainless steel. The damper shall be provided with a manual operating lever with locking devices.

3.6.10 The damper in the induced draft fan discharge shall be of the multiblade type constructed of minimum 10 gauge steel and galvanized. The damper shall electrically interlock with the induced draft fan electrical circuit to open when the fan starts and close when the fan stops. A manual automatic switch shall be provided to allow for manual operation.

4.9 Each burner on the incinerator shall be provided with gas-electric ignition and flame safety ultra-violet (UV) scanner. The U.V. scanner shall be furnished and installed to sight both pilot and main flame.

4.10 Pilot burners shall be interrupted type (on for ignition, off during burner operation.)

4.11 Each burner shall have individual manual reset safety valves. In the event of flame failure, the burner affected shall go off on safety. Loss of combustion air or fuel pressure shall shut-down entire furnace. Auxiliary contracts shall be provided in each burner control panel to transmit burner-on, burner off and malfunction or safety shutdown alarm signals to the central panel.

4.12 All active burners on one hearth of the incinerator shall modulate from one control.

4.13 All fuel trains on each burner and the safety system shall conform with Factory Insurance Association (FIA) regulations.

4.14 Burners shall be North American Manufacturing Company, or approved equal.

5. Instruments & Controls

5.0 All existing instruments and controls shall be removed and the Contractor shall furnish and install a complete new system of instruments and controls to record, observe and control the operation of the sludge burning installation.

5.1 It is the intent that the new control system will enable the incinerator to be started, stopped and temperature controlled from the central control panel.

5.2 The installation shall be complete and shall contain all conduit, wiring, tubing, piping, indicating instruments, recording instruments, control instruments, sampling instruments, sensing elements, transmitting elements, analyzer elements, guages, valves, pushbutton station, lights, etc., to give a complete installation, installed connected, tested and ready to operate.

5.3 The Incinerator manufacturer shall furnish and install in the approximate location indicated on the Contract Drawings a central control panel to mount all control, indicating, recording, etc. instruments.

. Auxiliary Fuel System

.0 All existing burners shall be removed from the furnace and new burner boxes installed as specified hereinafter. The existing gas and pilot gas lines shall be revised as required to accept the new system of burners. The refractories and furnace shall be revised as required for proper burner installation.

.1 The fuel burners shall be of the dual fuel burning type designed to burn natural gas or digester gas and shall be complete with burners, valves, controls, meters, strainers, and necessary fuel and combustion air supply piping to the burners

.2 The system shall have sufficient heating capacity to maintain the required furnace temperatures at all times, plus a twenty (20) percent safety factor, and shall be provided with approved safety valves to shut-off the system in event of failure of gas supply or combustion air supply.

.3 All burners shall be sealed-in, nozzle-mix excess air type and be capable of maintaining a stable flame with the pilot light off and an excess air of 600% when burning gas with combustion air supplied at 15 osi for any air fuel mixture between correct air-fuel ratio, and excess air indicated herein.

.4 Burner boxes shall be made of steel or cast iron and lined with not less than three (3) inches of castable refactory meeting ASTM Designation C 401, Class Q, and burner combustion tiles shall be made from high aluminia refractories containing not less than eighty per cent (80%) aluminia or silicon carbide refractories.

.5 Each burner shall be hinge mounted and arranged for easy inspection of the burner tile and burner box.

.6 Burner input to the respective hearths shall be controlled by modulating the fuel supply only, the excess air supply shall not be modulated. All active burners on one hearth of the incinerator shall modulate from one control.

.7 A separate control panel, located at the burners, shall be provided for each burner. The panel shall be constructed of heavy gauge steel and shall contain the fire programming and flame safeguard controls stop-start switch and indicator lights.

.8 All wiring from the central control panel to the local Burner Panels shall be furnished by the incinerator manufacturer.

5.3.1 Instruments shall be suitable for flush mounting.

5.3.2 The panel shall be free standing, totally enclosed and equipped with full length rear access doors, canopy and light. The Panel shall be 90" x 20" and of suitable width to accomodate the requirements.

5.3.3 The panel shall be constructed of minimum 10 guage steel and shall be amply reinforced with structural shapes to present a rigid non-warping surface. Back-up plates and structural shapes shall be provided as required at all panel cut-outs for instruments to rigidly support the weight of the instrument without deformation of the panel or damage to the instrument.

5.3.4 Hinged doors shall be provided on the rear of the panel to provide access to all equipment, wiring, piping, and instruments on the interior of the panel for maintenance, repair or replacement. All doors shall be provided with keyed locks for securing the doors in the closed position.

5.3.5 The control panel shall be constructed to NEMA 12 standards.

5.3.6 Pushbutton stations, selector switches and indicating lights shall be of the heavy duty, oil tight type.

5.3.7 Indicating lights shall have a built-in transformer and a 6 volt, minature, bayonett base, incandescent lamp and shall be of the push-to-test type.

5.3.8 The central control panel shall be completely wired and piped internally under this item. All internal wiring shall terminate in terminal blocks suitably numbered and identified.

5.3.9 All internal piping, tubing, etc., to be connected to exterior piping, tubing, etc., shall be terminated in a suitable bulkhead connection and properly numbered. All wiring, piping, tubing, etc., shall be neatly arranged and supported inside the panel. All openings shall be plugged and protected during shipping and installation.

.3.10 A 115 volt, single phase, 60 Hertz electrical service will be supplied to the terminal strip in the panel under another section of this contract. If other voltages are required, suitable transformers shall be provided as part of the panel.

.3.11 Clean, filtered and dried compressed air at approximately 90 psig will be provided to the bulkhead terminal under another section of this contract. If pressures other than this are required, suitable pressure reducing valves shall be supplied.

5.3.12 The exterior of the panel shall be manufacturer's standard finish and shall be properly protected for shipment and installation.

5.4 One (1) continuous multipoint recording pyrometer shall be furnished and installed having a minimum of 11 points, and shall successively record temperature from thermocouples located as follows:

Points 1 through 6 inclusive - Incinerator Hearths 0 - 5

Point 7 - Flue Gas Scrubber Inlet

Point 8 - Flue Gas Scrubber Outlet

Point 9 - Incinerator Central Shaft Cooling Air Inlet

Point 10 - Incinerator Central Shaft Cooling Air Outlet

Point 11 - Incinerator Exhaust Stack Outlet

5.4.1 Each recording pyrometer shall be a Honeywell or approved equal Electronik 15 unit designed to record temperatures at each of 11 points at least once every two (2) minutes.

5.5 Thermocouples shall be installed in locations as specified hereinbefore to obtain a representative temperature of the gases in the chamber, duct, breeching, etc., in which the temperature is to be sensed.

5.5.1 Thermocouples shall be Type K (chromel-alumel) alloy designed to operate continuously over a range of 0 to 2300 degrees F and be provided with an inconel protecting tube and be complete with element, element insulators, terminal block and terminal head with threaded cover and gasket.

5.6 High limit emergency control shall be provided to limit the inlet temperature to each incinerator induced draft to a maximum of 600 degrees Fahrenheit. The flue gas temperature out of each scrubber (inlet to induced draft fan) shall be limited by comparing an input signal from a thermocouple to a manually established set point in the controller. The generated error signal shall, through an electric to pneumatic relay with manual reset, open the emergency by-pass damper and through an electric interlock system stop the incinerator induced draft fan, the incinerator burners and the combustion air supply fans.

5.7 The incinerator exit pressure shall be controlled by comparing an input signal from the draft pressure sensor at the incinerator outlet and input signal from the continuous oxygen analyzer to an automatic, established set point on the controller. The generated error signal shall, through a pneumatic draft pressure set point controller, position the pneumatically operated normally open damper in the incinerator induced draft fan inlet to maintain the draft pressure at the set point.

5.7.1 Ammeters indicating the current being drawn by each induced fan motor shall be located on the central panel adjacent to the manual control.

5.8 The temperature on each fired hearth shall be controlled by comparing an input signal from a hearth thermocouple to a manually established set point in the controller. A generated error signal shall control the modulating fuel control valves in the fuel system to maintain the hearth temperature at the set point.

5.9 The auxiliary sludge combustion air supply to each incinerator shall be controlled by comparing an input signal from the oxygen analyzer to a manually established set point on the controller. The input signal shall be used to establish the automatic set point of the incinerator exit pressure to maintain the proper relationship of the combustion air supply and incinerator exit pressure.

5.9.1 The generated error signal shall, through an electric to pressure transmitter, position a pneumatically operated damper in the auxiliary sludge combustion air supply duct to the hearths to maintain the oxygen level in the incinerator flue gases at the set point.

5.10 The dampers in the incinerator induced draft fan discharges shall be interlocked with the electrical circuit of the induced draft fan to close when the fan stops.

5.11 The Contractor shall supply and install a multipoint, indicating gauge, pointer type, for semiflush mounting on the central control panel.

5.11.1 The pressure or draft shall be measured at the following points on each incinerator:

1. Central shaft cooling air supply to I.D. fan inlet.

2. Bottom hearth.

3. Top Hearth.

5. Incinerator induced draft fan inlet.

6. Incinerator induced draft fan outlet.

7. Central shaft cooling air supply fan discharge.

8. Incinerator burner excess combustion air fan discharge.

9. Sludge combustion auxiliary air fan discharge.

5.11.2 The draft gauges shall indicate the pressure in inches of water, with a range to suit the application. They shall have extra long bells or other adequate protection against sudden fluctuations of draft.

5.11.3 The draft gauges shall be equal to the Multi-Pointer gauges as manufactured by Bailey Meter Company or the Pointer Draft Gauge as manufactured by Honeywell, Inc., or the approved equal.

5.12 An oxygen and combustible gas analyzer system shall be furnished and installed for the sludge incinerator. The gas analzyer system shall operate as a complete system to draw samples of flue gas being emitted from the hot gas outlet breeching of the incinerator and shall cool and wash the gas sample, pump the gas sample to the analyzer, analyze the sample for oxygen and for combustible gas content, at the hot gas outlet breeching of the incinerator and to transmit, indicate and record the analysis on a receiving and recording chart.

5.12.1 The flue gas sample from the outlet breeching shall be continuous and be recorded and the oxygen content indication used to control the excess combustion air supply and incinerator exit pressure as hereinbefore specified.

5.12.2 The sampling system equipment with analyzer shall be mounted in suitable multiple mounting panels, located as indicated on the Contract Drawings, or directed by the Engineer. Recorder instruments and selector switches shall bemounted in the central control panel.

5.12.3 The gas analyzers shall be equal in all respects to the Continuous Oxygen and Combustible Analyzer, and Gas Sampling System, as manufactured by the Hays Corporation. The work of this item shall also include all auxiliary water, hydrogen, air, electrical and other supply lines and appurtenances required by the system.

5.13 A smoke density meter shall be furnished and installed as indicated on the Contract Drawings. They shall be the Hays Model 912 A or approved equal and come complete with light source, photoelectric receiver, transmitter and indicator for mounting on the central control panel.

5. Incinerator induced draft fan inlet.

6. Incinerator induced draft fan outlet.

7. Central shaft cooling air supply fan discharge.

8. Incinerator burner excess combustion air fan discharge.

9. Sludge combustion auxiliary air fan discharge.

5.11.2 The draft gauges shall indicate the pressure in inches of water, with a range to suit the application. They shall have extra long bells or other adequate protection against sudden fluctuations of draft.

5.11.3 The draft gauges shall be equal to the Multi-Pointer gauges as manufactured by Bailey Meter Company or the Pointer Draft Gauge as manufactured by Honeywell, Inc., or the approved equal.

5.12 An oxygen and combustible gas analyzer system shall be furnished and installed for the sludge incinerator. The gas analzyer system shall operate as a complete system to draw samples of flue gas being emitted from the hot gas outlet breeching of the incinerator and shall cool and wash the gas sample, pump the gas sample to the analyzer, analyze the sample for oxygen and for combustible gas content, at the hot gas outlet breeching of the incinerator and to transmit, indicate and record the analysis on a receiving and recording chart.

5.12.1 The flue gas sample from the outlet breeching shall be continuous and be recorded and the oxygen content indication used to control the excess combustion air supply and incinerator exit pressure as hereinbefore specified.

5.12.2 The sampling system equipment with analyzer shall be mounted in suitable multiple mounting panels, located as indicated on the Contract Drawings, or directed by the Engineer. Recorder instruments and selector switches shall bemounted in the central control panel.

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5.13 A smoke density meter shall be furnished and installed as indicated on the Contract Drawings. They shall be the Hays Model 912 A or approved equal and come complete with light source, photoelectric receiver, transmitter and indicator for mounting on the central control panel.

5.14 Each fuel system shall include an independent meter to and transmit the total fuel consumed by the incinerator. A by-pass loop with valves shall be provided for each meter. Meters shall be of the turbine type or liquid type, having sufficient capacity to measure the maximum flow to the incinerator. Meter shall be provided with an impulse head to transmit the reading to a direct reading totalizing register.

5.15 The central shaft drive mechanism of the incinerator shall be provided with a tachometer transmitter and a speed indicator to indicate the rotative speed of the central shaft.

5.16 A round chart indicating recorder shall be furnished and installed on the main control panel to indicate and record the feed rate to each furnace. The recorder shall receive its signal from the weightometer device furnished under another contract and shall have a range of 0 to 4 tons per hour. The recorder shall be wired under this section from the weightometer area to the control panel. The incinerator supplier shall specify the signal required and the supplier of the weightometer shall furnish and install any necessary transducers, etc. at the weightometer to supply the proper signal.

One clock shall be mounted in the panel and shall have a (12) twelve inch diameter illuminated dial with a hinged cover on the panel face. The clock shall be electric driven with "Telechro" or approved equal movement and shall be equipped with a sweep second hand.

5.17 ALARM DEVICES AND SWITCHES

Shaft rotation shall be monitered by a "telltale" device to signal any interruption of the shaft rotation. A normally open auxiliary contract shall be provided on the instrument panel as part of the relay devices to interlock the feed conveyor system.

A remote indicating temperature control device shall be located at the scrubber inlet. It shall be complete with a high alarm switch wired to sound the alarm on reaching the set point and shall at the same time be interlocked with any necessary relay to stop the induced draft fan and open the emergency vent.

Ash level shall be monitered in the storage bin by a device to sound an alarm on high level.

Structual Requirements

The Contractor shall furnish and install or modify within the limits shown or specified, all structural steel beams, slips, supports, floor gratings, floor plates, stairs, pipe railings, ladders, and miscellaneous metal work necessary for the proper completition of the incinerator modifications and for adequate access and working space for all the equipment included. Demolition and removal of existing equipment shall be the responsibility of the contractor.

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ALARM SYSTEM

Multipoint annunciator alarm system shall be furnished complete with 2" by 3" backlighted illuminated nameplate suitably titled and of a number sufficient to accommodate all the necessary alarm points including all burners while also providing for two spare points. The system shall incorporate an alarm horn complete with loudness adjustment, acknowledge and test pushbuttons, flasher and plug-in modules. The sequence of operation shall be the following:

	Condition Normal	Condition Alert	Annunciator Silenced	Condition Returns to Normal
Visual	off	flashing	steady bright	off
Audible	off	on	off	off

The system shall be equal to that manufactured by the Scan Instrument Corporation, solid state series 70 annunciator.

Electrical Work

.0 All electric material and equipment installed under this section shall be the products of established and reputable manufacturers, shall be new and of first class construction, shall be designed and guaranteed to perform the service required, and shall bear the label of approval of the Underwriters' Laboratories, Inc., where the label is available for the items involved.

.0 The electrical installation shall be made in a neat and workmanlike manner in accordance with the best practice of the trade and shall conform to the requirements of the Electrical Code of the State of Ohio, County of Cuyahoga, and the City of Rocky River, the National Electric Code, and to any other applicable state and local codes.

.0 The Contractor shall furnish and install at the locations shown on the Contract Drawings, a central control panel as specified hereinbefore for the mounting of instruments and controls. Under this paragraph, the Contractor shall install and connect up complete all electrical conduit and wiring for control and for recording and indicating instruments between the central control panel and the sensing and transmitting devices and between the central control and the controlled device.

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Piping, Valves and Appurtenances

The Contractor shall furnish and install or modify all protected water, potable water, final effluent water, gas, compressed air, grease, instrument air, etc., piping and valves serving the incinerators and scrubbers from supply lines within the incinerator area as shown on the Contractor Drawings.

K. Spare Parts

The Contractor shall furnish the following spare parts with each part packed in a container and properly marked by item number, etc., to facilitate identification.

2 Pens for each multipoint record supplied.

2 Pressure switches of each type used.

2 Relays of each type used.

6. Spare bulbs for each type of indicating and alarm lights used.

3 Spare fuses of each type used.

6 Spare thermocouples.

1 Spare relay shall be supplied loose for every four (4) relays used.

One years supply of charts and ink shall be provided for each recording instrument.

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J. Insulation

1.0 The Contractor shall furnish and install all exterior insulation required for equipment, flues, duct and other appurtenances supplied under this Contract, so as to provide sufficient retention of heat, to prevent condensation, and to insure that the temperature of exposed parts shall not exceed one hundred eight (180) degrees F.

L. Manuals and Drawings

1.0 After award of contract, and before construction and operation, the Contractor shall furnish to the Engineer, for approval, drawings and information showing dimensions, layout of equipment, materials, method of assembly, capacity, operating characteristics, and all data necessary to judge as to the conformity of the equipment and work with the intent of the Contract Drawings and Specifications.

1.1 The Engineer's approval will cover the general conformity with the intent of the Contract Drawings and Specifications.

1.2 The Contractor shall be responsible for the detailed design, dimensions and the proper functioning of all equipment and the installation.

2.0 The Contractor shall provide five (5) bound copies of Operation and Maintenance Instruction Manuals.

2.1 The Manuals shall cover the operating, lubrication and maintenance instructions for all individual items of equipment in the installation.

2.2 Process operations instructions cover the system operation, including start-up, warm-up, adjustment, burning and control of the system, and all its auxiliaries.

M. Erection, Performance, Testing and Warranty

1.0 Erection

1.1 The Contractor shall furnish personnel that are qualified and experienced in the design, manufacture and installation of facilities similar to that specified herein to supervise the field installation and erection of all equipment.

1.2 Supervision shall be provided during all times that work is being performed on the installation of erection.

2.0 Testing

2.1 Upon completion of the erection and installation, the Contractor shall notify the City and the Engineer that the incineration equipment is ready to be placed in operation and tested.

2.2 As a general requirement of the performance of the sludge cake incinerator installation during the testing period, the incinerators shall be capable of evaporating the contained moisture of the sludge cake and shall burn the solids thereof to a sterile ash containing not more than four (4) percent by weight of volatile matter. During this process, and inclusive of starting, shutdown and standby periods, the operation shall be free from nuisance of dense smoke, acid or other fumes, noxious gases, strong odors, excessive dust, dirt or fly ash.

2.3 The operation shall be subject to the requirements of the State of Ohio, County of Cuyahoga, City of Rocky River, and such other codes, laws or ordinances which may apply, and to the provisions of paragraph 3.0 herein.

2.4 In addition, the incinerator shall be capable of being shutdown if a malfunction occurs during operation at full design capacity under full by-pass.

2.5 The incinerator shall be tested for a minimum of two (2) continuous days each.

2.6 During this period of testing, the Contractor will be responsible for the installation, and shall make such adjustments and changes which he may find necessary for the proper operation of the installation, provided, however, that no such changes shall be in conflict with the requirements of this specification.

2.7 During the period of testing, the City will furnish all necessary sludge cake, fuel, water, electric power, labor and supplies free of expense.

2.8 The Contractors representative shall instruct and direct the City forces, and shall remain responsible for the installation and its operation and for making any changes, repairs or replacements, provided, however, that should such repairs or replacements be required by reason of the negligent acts or omissions of the City which are contrary to the instructions or directions of the Contractor, then the Contractor will be reimbursed by the City for the cost of such repairs or replacements.

3.0 Warranty

3.1 For warranty purposes the installation shall:

a. Burn the sludge cake as received at the rate of design rated load and seventy-five (75%) percent excess air.

b. Reduce the sludge cake to a sterile ash containing not more than four (4) percent of volatile matter by weight.

c. Be capable of maintaining sufficient temperatures in the burning areas to reduce the sludge cake to a sterile ash as required in Paragraph "C", "Capacity of Installation."

d. Produce a stack emission opacity not to exceed Ringelmann No. 1.

e. Particular discharge to the atmosphere shall not exceed 1.3 lbs per ton of dry solids charged to the incinerator.

f. Reduce the flue gas discharge temperature to the atmosphere to 110 degrees Fahrenheit, measured at the induced draft fan inlet.

3.2 In the event that fulfillment of warranty is not demonstrated by the test runs as herein specified, the Contractor will be permitted to make such changes in equipment and/or methods of operation as he may deem necessary and as may be approved by the Engineer. Following this readjustment, the manufacturer shall make a second test run similar to that of the first run except that, if so ordered by the City the second test shall be extended to include a total period of test up to two (2) calendar weeks.

3.3 The Contractor shall, at no additional cost to the City provide and pay for the services of an independent and approved testing laboratory acceptable to the City to make all required chemical analysis during the warranty and acceptance tests. At least four (4) samples of sludge cake and ash shall be obtained during each hour and a composite sample of the four (4) samples gathered during each hour shall be tested.

3.4 The Contractor shall, at no additional cost to the City provide and pay for the services of a recognized and approved air pollution testing organization acceptable to the City to conduct the air pollution tests and prepare the test data and result for submission to the City and the Engineer for approval. Six (6) copies shall be submitted.

3.41 The Contractor shall provide all test openings, supplies, materials, power, fuel, structures and actual testing, exclusive of set-up time, shall be conducted for a minimum of two (2) eight (8) hour days, per incinerator.

Estimated Capital Cost

Our estimate of the capital cost for the modification work per the preceeding specifications on an installed basis is $450,000. - $500,000.

After the preparation of drawings and specifications by your Engineer, we will be in a better position to provide a refined estimate. This effort will be necessary to define the scope of the modification you elect to proceed with.

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N. Data To Be Submitted With Proposal

1.0 The Bidder shall submit with his Proposal a certified experience record of the incineration equipment he proposes to furnish.

2.0 Heat balances based upon gases leaving the furnaces at not less than 800°F. using a minimum of seventy-five percent (75%) excess air.

3.0 Any other data which the Engineer deems necessary to properly evaluate incineration equipment, operating and maintenance costs shall be furnished upon request.

4.0 The Bidder shall submit with his Proposal a description of the incineration equipment offered and a complete list of all electric motors required. This listing shall include rated horsepower and characteristic power requirements of each motor.

5.0 The Bidder shall submit with his Proposal, layout drawings showing the proposed arrangement of incineration equipment in the Sludge Disposal Building, if different from Contract Drawings.

Mr. ROE. Thank you very much for your testimony. We appreciate your presentation. We will look for that other information, and we need it to build a foundation to proceed with this.

Mr. FEIGHAN. We will have it at your offices within a week or so.

Mr. ROE. Fine. Thank you.

The committee will recess now until 1:15.

[Whereupon, at 12:25 p.m., the subcommittee was recessed to reconvene at 1:15 p.m. the same day.]

AFTERNOON SESSION 1:18 P.M.

Mr. ROE. The subcommittee will reconvene.

We have as our next witness, Mr. Donald A. Holt, Jr., joint chairman of the boards of directors of the Orange County Sanitation Districts, Calif., accompanied by Mr. Wayne Sylvester, assistant general manager, Dr. Douglas Segar, scientist, and Lee C. White, Washington counsel.

We have that for the record now and we want to welcome you to our hearings.

The full text of your prepared statement will appear in the record at this point.

[Prepared statement referred to follows:]

AUTHORIZING OCEAN DISPOAL OF SEWAGE SLUDGE UNDER THE CLEAN WATER ACT

(Statement by the County Sanitation Districts of Orange County, Calif.)

Summary

Ocean disposal is one appropriate option for sewage sludge management which the National Academy of Sciencies (NAS), National Advisory Committee on Oceans and Atmosphere (NACOA), and other groups have recommended should continue to be used contingent upon the sludge and local oceanographic conditions. Ocean disposal of sewage sludge from barges is permissible under the Marine Protection, Research and Sanctuaries Act, yet the Clean Water Act prohibits identical disposal operations from a shore-based pipeline. A strong case can be made for reconciling this statutory conflict, and we recommend that the Clean Water Act be amended to allow ocean discharge of sewage sludge, provided that it will cause no unreasonable degradation of the marine environment or endangerment of human health. A preliminary step that Congress could take is to authorize the Administrator of EPA to grant a limited number of five-year research permits to coastal publicly-owned treatment works (POTW's) for the purpose of determining under what circumstances, if any, pipeline disposal of sewage sludge can be allowed.

Over the past two years, the County Sanitation Districts of Orange County, California (CSDOC) and the National Oceanic and Atmospheric Administration (NOAA) have jointly funded a research planning study by scientists from the California Institute of Technology (CalTech) and other major marine science institutions in Southern California. Joint municipal-federal research efforts, such as the CalTech study, are an appropriate mechanism for focusing scientific effort on the major waste disposal problems facing many coastal municipalities, and the shared funding arrangement gives the municipality a greater role than it has traditionally played. Under a research permit provision, CSDOC would construct a new ocean outfall to far greater depths than has ever been built before and would support an intensive, seven-year research effort (two years pre-construction and five years post-construction) intended to predict and monitor the impacts of such an outfall on the marine environment. If the marine monitoring program revealed unacceptable deleterious effects, the ocean discharge would be terminated immediately. In any event, while constructing and studying the pipeline discharge, CSDOC would continue its search for the best available land alternative for sludge disposal. The ultimate success or failure of the deep ocean discharge would be judged through a comprehensive multimedium assessment which would demonstrate whether this alternative was preferable to others, including land-based, that may be available to Orange County. This

assessment would take into account human health risks, environmental effects, process economics, and public perception of the alternatives.

I. INTRODUCTION

One of the most troublesome byproducts of our Nation's effort to clean up its waterways is sewage sludge. The major constituent of sewage sludge generated by POTW's is naturally occurring organic material. This organic material is removed from our wastewater effluent streams because the principal pollution problems in inland waters are caused by the biochemical oxygen demand of this material. Sludges also contain trace concentrations of synthetic organic compounds, heavy metals, and some petroleum-related hydrocarbons. These contaminants are often grouped together for the purposes of discussion and legislation under the heading of "toxics."

Recent estimates indicate total U.S. POTW sludge production is on the order of seven million metric tons per year.[1] The costs of sludge management by these POTW's varies from about $20 up to $500 per dry ton.[2] At $130/ton (EPA's "typical" figure), over $900 million per year is estimated to be spent in operating costs nationwide. For many POTW's, sludge management represents over one-half of their operating budgets. Despite this economic burden, an ever-increasing number of POTW's are finding the costs of sludge management to be a relatively minor concern compared to the logistical and public acceptance aspects of sludge disposal. Spurred by the discovery of hundreds of unmanaged hazardous waste sites all over the country, public concern for groundwater contamination is making it exceedingly difficult to obtain new sites for land disposal of sludge or, in many cases, even to continue the use of existing sites, even though sewage sludge is not a hazardous waste.

In the early 1970's, public opinion called for a national policy to restrict or ban all ocean disposal of sludge. At present, we seem to be just as intent in our efforts to restrict or ban many forms of land disosal. In the 70's, EPA and the California Water Quality Control Board took the position that no sewage sludge could legally be disposed in the ocean, without regard to the human health or environmental consequences of the alternative disposal methods and without regard to the quality of the sludge or the assimilative capacity of the ocean. Quite clearly these attitudes were emotional and instrinctive, rather than reasoned and scientifically based. Eighteen months ago, Judge Abraham Sofaer struck down EPA's arbitrary ocean disposal ban under the Marine Protection, Research and Sanctuaries Act (MPRSA) in *City of New York* v. *EPA*.[3]

In the past few years, NOAA, NAS, NACOA, and many prominent members of the marine science community have expressed the belief that the coastal oceans have the capacity to safely receive and disperse some of man's wastes, including sewage sludge, without unacceptable ecological effects: in other words, the oceans have an "assimilative capacity." We submit that the majority of knowledgeable marine scientists would agree that the coastal oceans possess some finite capacity to accept wastes, particularly natural materials such as sewage sludge. The NACOA report, issued in 1981, underscores this weight of scientific opinion in its strongly-worded recommendation:[4]

"NACOA recommends that *ocean disposal of sewage sludge either by barge or through properly designed outfalls should continue to be a disposal option* under appropriate management conditions and with adequate monitoring safeguards in those areas where no unreasonable degradation of the environment results from sludge disposal." (Emphasis added.)

CSDOC believes that coastal POTW's are obliged to consider ocean disposal among the other options for sludge management, and we believe that there are several potentially acceptable options for ocean disposal of sewage sludge off the Southern California coast.

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[1] National Academy of Sciences/National Research Council, "Multimedium Management of Municipal Sludge," Washington, D.C., 1978, 187 pp., at p. 24. (Cited as "NAS Report.")

[2] Hirsch, Allan, Testimony before the Subcommittee on Natural Resources, Agriculture Research and Environment of the Committee on Science and Technology, U.S. House of Representatives, May 27, 1981. [Committee print, at p. 59.]

[3] *City of New York* v. *U.S. EPA*, No 80 Civ. 1677 (ADS), S.D.N.Y., Aug. 28, 1981.

[4] National Advisory Committee on Oceans and Atmosphere, Special Report to the President and the Congress, "The Role of the Ocean is a Waste Management Strateg," NACOA, Washington, D.C., Jan. 1981, at p. 100. (Cited as "NACOA Report.")

II. THE SOUTHERN CALIFORNIA EXPERIENCE

From Point Conception to the Mexican border, a distance of about 250 miles, the largest anthropogenic (man-derived) input to the coastal Pacific Ocean is POTW effluent. In 1979, the five major POTW's in Southern California safely discharged more than one billion gallons of treated wastewater per day into the Pacific Ocean.[5]

In 1969 the five major POTW's in Southern California agreed to fund an ongoing series of environmental studies, designed to measure the effects of ocean disposal of sewage effluent and solids. That agreement produced the Southern California Coastal Water Research Project (SCCWRP), which since 1973 has been headed by oceanographer Willard Bascom. SCCWRP's budget has been augmented over the years with federal and state research grants and their research programs have received critical acclaim from their peers. To ensure theobjectivity of SCCWRP's reports, control of the project was turned over to a commission of local civic leaders and elected officials, all of whom are concerned with environmental quality. The scientific work carried out at SCCWRP is reviewed separately by an independent consulting board of prominent marine scientists. SCCWRP's work, and the other research that has been performed in the region, prompted the former EPA Assistant Administrator for Water, Thomas Jorling, to comment: [6]

". . . [Southern California] is atypical for two reasons. First, it has been the subject of more research . . . than all the others around this country combined, multiplied by several hundred . . . . The second . . . is that going into a California waste treatment system is like into a nuclear submarine; while other waste treatment facilities are more akin to the ironclad Monitor . . . Willard Bascom should feel proud of his work and so should all the communities that have been involved."

Willard Bascom recently published a paper in the peer-reviewed journal Environmental Science and Technology which briefly summarizes the decade of work carried out at SCCWRP. We have attached a copy of the full paper as an Appendix and respectfully request that this paper be printed as part of the record. We will highlight briefly the major conclusions reached by marine scientists in their studies of our 250-mile coastal "laboratory."

Heavy metals.—Heavy metals are found in sewage, with about 90 percent associated with the particulate (solid) phase. About 10 to 12 percent of the metals remain in the vicinity of the discharge; the rest are carried away by the current. Of the portion which remains, the metals are so tightly bound to solid particles that they are practically unavailable to marine organisms.[7] Although there may be elevated levels of metals in marine invertebrates near outfalls, sewage-related metals are not found in any significant concentration in fish muscle tissue (the part eaten by humans). There are some indications that high metal loads in enclosed bays or estuarine systems may result in elevated levels of these metals in invertebrates that could pose a potential hazard to humans, but this is not the case in the open coastal waters of Southern California.[8]

Synthetic organics.—DDT is thought to have been responsible for decimating the brown pelicans on the Channel Islands by adversely affecting their eggshells. Although a major industrial facility discharged DDT into the Los Angeles County sewerage system for years, the DDT discharge was stopped in 1970, and the amount of DDT reaching the Southern California bight through POTW discharges has been reduced to 3.5 percent of its 1971 value. In the same time period, the pelicans have returned to what are believed to be their normal population numbers. Another class of persistent synthetic organic compounds which is of environmental concern nationwide, polychlorinated biphenyls (PCB's), has dropped to 13.6 percent of its 1971 levels in California POTW discharges, even though there was no single source to eliminate, as in the case of DDT.[9] Concern in Southern California is focused on the long-term impacts of the existing deposits of DDT on the Palos Verdes shelf, rather than on current discharges of either DDT or PCB's. As far as both DDT and PCB's are concerned, at least in the open coastal waters of California, marine organisms that take up these compounds appear to be well-equipped to isolate the contaminants within their bodies in such a way as to prevent actual harm to themselves.

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[5] Bascom, W., "The Effects of Waste Disposal on the Coastal Waters of Southern California," Environ. Sci. Technol., 16, 226A-236A (1982). (Cited as Bascom 1982.)

[6] Tippie, V. K. and D. R. Kester, Eds., "Impact of Marine Pollution on Society," Papers presented at the 4th annual conference organized by the Center for Ocean Management Studies, University of Rhode Island, June 1980, Praeger Publishers, New York, 1982, at pp. 259-60.

[7] Bascom 1982.

[8] Bascom 1982, at 228A, 232A-33A

[9] Bascom 1982, at 227A, 232A.

The five Southern California coastal POTW's face dramatic increases in sludge production as they put more secondary treatment facilities on-line. The three largest agencies, along with the U.S. EPA and the State of California, initiated an areawide sludge management study in 1976, called the Los Angeles/Orange County Metropolitan Area Sludge Management Program (or "LA/OMA Project"). The original objective of the LA/OMA Project was to evaluate all land-based options for sludge management, including landfilling, composting, solar drying (in desert areas), and thermal destruction. Because EPA policy, at that time, was that ocean disposal of sludge was illegal under both the MPRSA and the Clean Water Act, EPA would not allow federal dollars to be spent examining ocean options.

As the LA/OMA Project got underway, one of the most attractive land disposal options, from both an environmental and an economic perspective, appeared to be the "solar drying basin" option. In this scenario, sludge in its normal 3-to-5 percent slurry would be dumped over the mountains into desert valleys. Land would have been purchased, and the sludge would have been spread on the land to dry in the sun. After the moisture content reached an acceptable level, the dried sludge would have been mixed with non-productive soil to produce agricultural land. Unfortunately, by the time the LA/OMA Project reached the public hearing stage, the people who lived in those desert counties adopted the now-common "not-in-my-backyard" syndrome, and county after county began passing "no sludge" ordinances.

The solar drying basin option was not the only one to bite the dust as the LA/OMA Project progressed to its conclusion in 1980. In the final LA/OMA report, it became apparent that the only land-based options available to the three POTW sponsors would be those that could be implemented on land already owned by the POTW's. By 1980, public opposition to any new sludge facility siting became unusually intense in all of our service areas. Since the City of Los Angeles and Los Angeles County Sanitation Districts had land available on which to construct at least some kind of facility, the LA/OMA Project was able to develop practicable recommendations for them. However, CSDOC was using 20 acres of space at a county-operated landfill on private property. Therefore, we had to begin searching for a new site on which to build a composting facility, which appeared to be our best land-based option according to the LA/OMA report.

The final LA/OMA Report, adopted by both the U.S. EPA and the State of California as a final Environmental Impact Statement, was not able to make a recommendation for Orange County. We did not then, and we do not now, have an acceptable land site for composting. The third (and last) of a series of public meetings that we held on the subject brought out over 600 people, not one of whom favored our choice for a site. As a result of public pressure, our own County Board of Supervisors went on record in opposition to our plans to site a composting facility near their proposed new county landfill—a siting decision made necessary because of the need to bury the composted sludge in a landfill. CSDOC is still in the process of trying to complete its portion of the LA/OMA Study, but we are now looking at less satisfactory methods (e.g., such as co-combustion with municipal solid waste, mechanical composting, and incineration) that could be implemented on land we already own.

III. THE OCEAN OPTIONS

Because of federal and state unwillingness to consider ocean disposal of sludge, the three POTW sponsors of LA/OMA contributed $75,000 to a study of ocean options that was incorporated into the final LA/OMA report. All the sponsors recognized that the ocean option part of the LA/OMA project was clearly inadequate as the basis for a final recommendation, but, in light of the apparent mindset against ocean disposal, it would have been imprudent at the time to commit a larger amount of local public resources to this end.

There are two basic ocean disposal options: ocean "dumping" from a vessel under the MPRSA, and ocean "discharge" from a pipeline under the Clean Water Act. The former is currently allowed, following the *New York City* v. *U.S. EPA* decision, while the latter was expressly forbidden by this Congress in Public Law No. 97-117, overturning the D.C. Court of Appeals' decision in *NRDC* v. *EPA*, 656 F.2d 768 (1981).

Regardless of whether sludge is barge-disposed or piped offshore, one important feature of our submarine coastal topography is the presence of very deep water in a series of submarine basins just offshore. Scientist believe that biological activity in the deep basins (1,500 to 2,000 feet deep) is only a tiny fraction of what it is on the continental shelf, where all of the existing six discharges are located. Therefore, two research efforts were undertaken with the POTWs' $75,000 contribution to LA/

OMA: (1) a survey of biological conditions in two of the deep basins was prepared by SCCWRP,[10] and (2) the Environmental Quality Lab at California Institute of Technology (CalTech) did some preliminary mathematical modeling to predict the fate of sewage sledge if it were to be placed into the deep ocean basins.[11]

The CalTech analysis concluded that the two best options for deep ocean disposal are: (1) sludge outfalls with discharge depths of about 1,000 feet (compared to the 300 foot depth of the Hyperion sludge outfall), and (2) barge disposal at either a fixed or a "roving" discharge location in deep water using a submerged pump discharge between 150 and 300 feet below the surface (to keep the discharged material below the thermocline, but still several hundreds of feet above the ocean floor). No reputable marine scientist, or sewerage agency for that matter, can say with certainty that deep ocean outfalls are the ultimate solution to our sludge problems. The scientific data base for the deep basins is limited even though they are less than ten miles offshore. One remarkable feature of the basins is that they are very low in oxygen; in fact the 260 square mile Santa Barbara Basin, the northernmost of 14 offshore basins, is essentially devoid of oxygen and has been for thousands of years.[12]

The LA/OMA "mini-study" of deep ocean alternatives has provided us with a hint of what might be one of the safest, least environmentally degrading options for sewage sludge disposal. We cannot now close our eyes, or our minds, to the deep ocean options.

IV. THE ORANGE COUNTY RESEARCH PROGRAM

CSDOC has yet to find a site to complete the EIS process started eight years ago with the LA/OMA Project. We currently landfill about 65 dry tons of sludge per day, and, as more secondary treatment goes on-line and our service population grows, we expect this amount to increase to around 150 dry tons per day by the year 2000. Because public pressure appears to have taken away our opportunity for the "optimum" choices for land disposal, we deem it essential to make a thorough analysis of our ocean options. Clearly, an ocean disposal operation is possible and legal by barge, and we are actively considering that option. However, to be able to put sewage sludge at a particular spot in the ocean by barge (at a high operating cost, we might add), but not to be able to put exactly the same sludge in the same spot via pipeline is an anomalous situation at best. Thus, CSDOC has also been exploring the pipeline option.

In partnership with NOAA (which contributed two-thirds of the $85,000 cost), CSDOC sponsored a second phase of the CalTech study to define the research and monitoring that would be needed if a deep ocean sludge outfall were to be built off Southern California. The resulting research/monitoring plan was finished three months ago, and we have provided copies of that document to the Committee.[13] This research plan is briefly summarized as follows:

Two years of pre-discharge studies and five years of post-discharge monitoring would be performed to determine the viability of the pipeline discharge as a disposal method. The total cost of this research effort has been estimated at $1.5 to 2 million per year for seven years.

The study program has been divided into research groupings organized by tasks. The largest group in terms of effort and cost will be one that will seek to detect and document any effects from the discharge. This group will monitor water quality and benthic parameters near the outfall and at control stations both before and after the discharge begins. This information will be used as input to design of the discharge system and to calibration and refinement of predictive models.

Also used as input to the modeling efforts and to the siting of the outfall will be a pre-discharge survey of the bathymetry and currents. This second group's results

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[10] Mearns, A. J., J. Q. Word and M. D. Moore, "Biological Conditions in Santa Monica and San Pedro Basins," April 1978, 34 pp., reprinted in ref. [11].

[11] Jackson, G. A., R.C.Y. Koh, N.H. Brooks and J.J. Morgan, "Assessment of Alternative Strategies for Sludge Disposal into Deep Ocean Basins Off Southern California," Environmental Quality Laboratory, Report No. 14, California Institute of Technology, Pasadena, CA, September 1979, 208 pp.

[12] Emery, K.O. and J. Hulsemann, "The Relationships of Sediments, Life and Water in a Marine Basin," Deep-Sea Research, 8, 165–180 (1962).

[13] Brooks, N. H., R. G. Arnold, R.C.Y. Koh, G. A. Jackson and W. K. Faisst, "Deep Ocean Disposal of Sewage Sludge off Orange County, California: A Research Plan," Environmental Quality Laboratory, Report No. 21, California Institute of Technology, Pasadena, CA, November 1982, 116 pp.

will be used additionally to design the sampling station network for the continuing studies.

A third group will characterize the nature of the sludge: the quantity and quality of the discharge, the settling or flotation characteristics of the particles in seawater, the degradation of the particles during settling, and the release of contaminants to the water column. This study effort will be used in modeling exercises of the transport, fates, and effects of the sludge in the environment based upon both current sludge production technology and that predicted for the future.

A series of conceptual and computer models predicting the transport and fates of the waste stream in the ocean comprise the next task group. These models will take the discharge plume from its entry into the ocean at the pipeline through the disposition of particles several months after their initial discharge.

Although preliminary modeling by Jackson et al.[14] suggests discharge by the currently proposed pipeline is the best experimental design, a fifth group will, before and after construction, propose a refined location for the outfall and a mode of treatment for the sludge. This group will be considering current technology and costs for various options available in sludge treatment and pipeline engineering.

Group six and seven will explore biological impacts from the discharge, both in the laboratory and in situ. These studies will examine the direct and indirect impacts on the biota from the sewage sludge and its associated contaminants. They will also address the reverse: effects of the biota on the sludge particles and associated contaminants. Laboratory studies will be stressed in the early stages of this effort because of the large expense incurred in in situ deep water research, which is still in its infancy.

The last two groups will concentrate on tasks which are comparative, analytical, integrative, and interpretive in nature. One group will compare the CSDOC discharge with other similar discharges such as LA City's Hyperion outfall which has received extensive investigation. The other group will perform cross-disciplinary interpretation of modeling outputs, compare model predictions with monitoring results, and revise the research plan as information becomes available.

CSDOC is examining the concept that the experimental deep ocean pipeline discharge can ultimately be judged acceptable or unacceptable on the basis of a multimedia assessment of the feasible options. Comprehensive multi-media assessments can be expensive and time consuming since substantial data are required to describe environmetal and human health effects, economics, and social perceptions of a range of waste management options. Fortunately, much of the information required for a multi-media assessment of Orange County sludge disposal already exists in a well-documented form as a result of the LA/OMA Project. The EIS resulting from the LA/OMA Project contains detailed evaluations of a wide range of sludge management alternatives and will form an excellent basis for a comprehensive multimedia assessment which includes the deep ocean pipeline discharge option. The experimental study developed by CalTech will provide most of the essential missing pieces for such as assessment. However, CSDOC will also undertake to continue its studies of land-based alternatives in order to fill data gaps with respect to these options also.

Already we have contracted with SCCWRP to obtain biological, physical, and chemical oceanic baseline data that will be absolutely necessary before any deep ocean sludge disposal option could be implemented. SCCWRP's field investigations began in 1981, at a cost of $165,000 per year which is borne solely by CSDOC.

If one were to be allowed by law how deep an outfall should be built, we cannot say with precision at this point, but we can reach the 1000-foot depth contour about 7½ miles off our present facility. The pipeline would be relatively small (21 to 24 inches in diameter) and would cost between $15 and $20 million in 1982 dollars. CSDOC is prepared to bear the entire cost of building the pipeline, plus any associated sludge conditioning facility that would have to be built onshore. We are treating this effort as a research project, with a large potential savings to our rate-payers if it turns out to be a viable option. If the monitoring program shows deep ocean disposal to be environmentally unsatisfactory, all of the members of our Joint Board (consisting of 40 of the top elected officials in our service area of 1.8 million people) recognize that the pipeline would have to be shut down, and on-site land disposal alternatives implemented expeditiously.

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[14] Jackson, et al., op. cit.

V. RELATIONSHIP TO OTHER MUNICIPALITIES

A word about the relationship of our proposal to the situations of other POTW's, particularly those in Southern California, is in order. A legitimate question is why this research could not be undertaken at the City of Los Angeles' existing sludge outfall. First, the Hyperion sludge outfall was built in the mid-1950's on the continental shelf in about 300 feet of water, for what were good reasons at the time. SCCWRP's studies show that the buoyant plume from the outfall does not reach the surface, but most of the organic matter does rise into the "photic" zone, which are the shallower waters where primary productivity takes place. This allows the organic matter to be beneficially utilized as food by marine organisms, thus producing large numbers of fish and other organisms. SCCWRP reported that the four largest discharges support about 20,000 metric tons of extra benthic "standing stock." [15] This is readily acknowledged and demonstrated by the party-boat fishermen, who frequent the pipeline "reefs" for the demonstrably greater catches that are made there. However, there remains concern that, although there are beneficial effects of the POTWS outfalls in increased biological production, these beneficial effects may be accompanied by more subtle adverse effects that some fear may be caused by pathogens, trace metals and synthetic organic sewage sludge.

The information gathered by SCCWRP and other scientists at the Hyperion outfall over more than the last decade is the basis on which we are suggesting that a move to deeper waters could produce improved results by isolating the sewage sludge from the photic zone. City of Los Angeles scientists themselves have proposed several modifications to the Hyperion sludge outfall, including the deep ocean proposal, as ways to reduce the outfall's adverse environmental effects. However, Los Angeles is party to a consent order with EPA and the state, under which it is progressing towards full implementation of land-based sludge disposal by mid-1985.

Other geographic regions that would be expected to benefit from deep-ocean outfall research conducted by CSDOC include most of the island POTW's (e.g., Hawaii and the western Pacific islands, Puerto Rico and the Virgin Islands). Also included in this list would be several Alaskan communities and a number of cities in southeast Florida, where the Gulf Stream and deep water are only a stone's throw offshore.

One benefit that could accrue from pipeline disposal of sewage sludge is the purely economic one that would flow to inland cities, and coastal cities where ocean disposal is not possible. If one or more coastal cities could eventually turn to ocean disposal of all or some of their sludge, there will be that much less demand for scarce federal dollars under the Title II Construction Grants program. In addition, competition for the limited land and air capacity for sludge disposal would be reduced. Our colleagues in inland states would be as pleased as we if ocean disposal by pipeline is ultimately demonstrated to be an acceptable option.

VI. LEGISLATIVE ACTION NECESSARY

Members of this Committee are aware of the arguments that were raised in 1977, and then again last year, to absolutely ban ocean disposal of sewage sludge. You are also well aware of the overwhelming scientific evidence, and the logic, that says an absolute ban on sludge disposal in *any* medium cannot be justified on either human health or environmental grounds. We have cited the statements of the National Academy of Sciences and the National Advisory Committee on Oceans and Atmosphere in their call for a balanced, multimedium approach to waste disposal.

In 1981, the D.C. Court of Appeals said that sludge discharges could be authorized under § 301(h) of the Clean Water Act. In December of that year, your conferees reversed that decision legislatively. We do not see how it makes any difference what is discharged under § 301(h), as long as the stringent criteria enacted in 1977 are met. We strongly believe that the ocean option must be kept open, for in some instances it might be the best option. We are pleased to see that it remains open under the MPRSA, and we urge the Committee to recommend amending the Clean Water Act to allow ocean disposal of sludge. Since so little is known about deep ocean disposal, the § 301(h) criteria may be inappropriate for sewage sludge discharge permits. The more general "ocean discharge" criteria in § 403(c) should apply to such permits. We think that the § 403(c) criteria are more relevant to the problem at hand, one reason being that they are practically identical to the ocean disposal criteria under § 102 of the MPRSA. If a blanket sludge discharge provision

[15] Bascom 1982, at 231A.

cannot be enacted now, we respectfully request that language be adopted allowing five-year research permits under § 405 of the Act under the § 403(c) criteria.

We are willing to work with the Committee and its staff in developing language that would allow well-planned research efforts such as CSDOC's to continue so that the Nation can have the benefit of an analysis of ocean disposal of sludge based on sound technical and scientific procedures. A matter of this significance should be considered on the basis of rigorous scientific inquiry, not emotionalism.

Mr. ROE. Please proceed.

TESTIMONY OF DONALD A. HOLT, JR., JOINT CHAIRMAN, BOARD OF DIRECTORS, ORANGE COUNTY SANITATION DISTRICTS, ACCOMPANIED BY WAYNE SYLVESTER, ASSISTANT GENERAL MANAGER; DOUGLAS SEGAR, SCIENTIST; AND LEE C. WHITE, WASHINGTON COUNSEL

Mr. HOLT. Good afternoon. Thank you, Mr. Chairman. I am Donald Holt. I am a council member for the city of Placentia, Calif., and also holding the seat of the chairman of the board of directors of the Orange County Sanitation Districts.

As you noted, with me is Wayne Sylvester, the assistant general manager of the Orange County sanitation districts. Also present are Dr. Douglas Segar, a scientist, and Lee White, an attorney, who have worked with us in the development of our project.

We have all worked toward development of this project.

Mr. Chairman, if I may, I have a very lengthy and detailed formal statement which I would like to have incorporated into the record.

Mr. ROE. Your full statement will be incorporated in the record without objection.

Mr. HOLT. Thank you, Mr. Chairman, and I will attempt to describe our project as briefly as possible and will be available for any questions you or the other members of the subcommittee may have.

Those of us who are involved in handling the sewerage problems of a large metropolitan area—we have more than 2 million people residing in Orange County—have to face the problem of handling our success.

When we are successful in cleaning up our waters, our systems produce a product that has the unfortunate designation of sludge. Sludge, which has some positive uses, is not a product of uniform character, but has many different variations depending upon the industrialization of the area served, the effectiveness of pretreatment programs and other factors.

This sludge must be disposed of as it is generated. What we are faced with is finding a long term, environmentally sound solution.

There are a limited number of options: Using it on land as a fertilizer, burying it in land fills, incinerating it, and disposing of it in the ocean. Unfortunately, there is a general attitude among communities that says, "Sure, we generate and have to dispose of sludge, but don't put it near where I live or work or may want to visit."

We, like countless other agencies throughout the country, have expended a lot of time, money and effort attempting to meet this particular problem, and we will continue to do so. One option that we have explored with considerable interest is that of using a pipe-

line to take a preconditioned, nontoxic sludge to the very deep Pacific Ocean, many miles off of our shore, in a carefully controlled project that would offer an opportunity to secure information, data and statistics that would provide a foundation for informed discussions on the merits of using the ocean as a means of assimilating sludge.

In the 1981 amendments to the Clean Water Act, the conference committee adopted a provision which explicitly prohibited the use of section 301(h) for the purpose of transporting sludge to the ocean.

We do not quarrel with that action inasmuch as, clearly, 301(h) was not intended for that purpose but rather to provide a means of disposing of treated waste water effluent when certain criteria were met.

Regardless of whether an amendment to the act is necessary to authorize a research project of the type we propose, we believe it makes sense to do this through legislative action.

We have developed a proposed pipeline project, working with the National Oceanic and Atmospheric Administration, better known as NOAA, that was designed by the California Institute of Technology, also known as Cal-Tech.

NOAA has contributed two-thirds of the develomental costs, and Orange County has contributed one-third. We believe, as do the scientists and technical people who have examined it, that this project, which is estimated to cost $15 million, would over a 5-year period produce a valuable body of data to assist in the evaluation of the use of a pipeline to the deep ocean as an appropriate option for the controlled disposition of sludge.

Orange County would put up the $15 million in construction money from revenues from its operations. Thus, no Federal funds would be required for construction.

We propose that the monitoring be performed by a group of distinguished marine scientists and biologists under terms prescribed by the EPA Administrator in consultation with the NOAA Administrator; thus management of the research project would be independent of the Orange County sanitation districts.

It is also proposed that NOAA participate in providing the annual monitoring costs, expected to be between $1 to $1.5 million; Orange County proposes to pay $1 million each year toward those costs.

As I indicated, we are exploring all sorts of alternatives in disposing of sludge in our county, but this particular option is increasingly regarded by the scientific community as one in which we simply do not have enough information and data.

After all, there are only three repositories—the air, the land, and the water. We believe that selection of the best environmental alternative should be based on sound scientific data.

We further believe that the project that we have developed will move in that direction, and we therefore urge that the Clean Water Act be amended to make it clear that the EPA Administrator has authority, under carefully limited conditions, to issue 5-year research permits under section 405 of the act.

Thank you, Mr. Chairman, and members of the committee. We would be pleased to answer any questions you may have.

Mr. ROE. Is there any other testimony?

Mr. HOLT. Not at this time, Mr. Chairman.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman.

This appears to be a very innovative pilot project that could have significant effects on other parts of the country if in fact it proved to be a feasible process of sludge disposal.

Mr. Holt, what will Orange County's responsibility be in the event that the data acquired through this pilot project would indicate that there were unacceptable characteristics to this process and that the levels of discharge would create problems in the Pacific Ocean? What would be then your responsibility?

Mr. HOLT. Thank you, Congressman Packard.

If during the course of the research project—incidentally, this will be administered as I mentioned by a commission that is independent of Orange County sanitation districts—a preponderance of evidence is found and is accumulated that demonstrates there is human health hazards, risks, and unacceptable environmental impacts, the districts will immediately cease that project.

That is a very strong position that I am voicing in representing the board.

Mr. PACKARD. In your statement you indicated that your board of directors is prepared to commit $15 million to this pilot project requiring no Federal funds. Why are you willing to do that?

What evidence do you have at this time that would permit you in your own mind to make that kind of a commitment?

Mr. HOLT. Congressman, our agency takes very definite pride in its reputation. That reputation is not just the district itself, but the people that operate our district for us.

We, as board members, are very proud of them. We feel it is a very progressive, innovative responsibility of our districts to do this. We have in our budget some $2 million a year for continuing various research projects.

More to the point, during the period of time that this research project would be going on where we would be putting the preconditioned sludge in the deep ocean, there would be certain cost avoidances that we are incurring now that would go to offsetting that.

I should add that based on the engineering and oceanographic responses and work to be done, we are confident—I say that even as a lay person that I am confident because I live there and I am very concerned about protecting it—that what we will find through this very controlled discharge will be something that will not be unreasonable and will not be degrading to the ocean environment.

But I think most importantly, there is no current baseline data today available that has had a research project approach that permits comparisons.

I mentioned the reference to cost. It will indeed be very cost effective for our district alone.

We would anticipate saving $10 million a year in taxpayers' dollars operationally. I think something else we have to look at strongly, I believe, it would provide a savings in the precious energy resources that are needed to otherwise dispose of the sludge.

Mr. PACKARD. I understand you are not, therefore, requesting any funding. You are simply requesting authorization to proceed on this pilot project?

Mr. HOLT. That is correct.

Mr. PACKARD. Is that authorization required within the Clean Water Act amendments? Is that the appropriate document?

Mr. HOLT. I believe so.

Mr. PACKARD. Is that the appropriate place to have this authorization?

Mr. HOLT. It is my understanding we do not need the legislative authorization to do this. This has been the means that we have selected to pursue. Possibly either Mr. Sylvester or Mr. White could address our reasoning behind it.

Mr. PACKARD. The question is, Do you believe the best way to accomplish the goal you have is to change the language of a bill there?

Mr. HOLT. Rather than an amendment?

Mr. PACKARD. Either an amendment or change the language of the bill.

Mr. WHITE. We do, Congressman. Perhaps lawyers could argue that the sentence added to 301[h] was applicable to only that particular technique for being permitted and that the EPA Administrator has authority to enter into research projects under other sections of the act.

But we don't delude ourselves. This is a tender, sensitive issue. The decision was made by Orange County to come through the front door and ask for legislative authority to do it properly.

Orange County does not want to run any risk. After all, if they are going to put $15 million worth of Orange County revenues into this, they ought to be reassured they will not be thrown out by a court before the project has run its course.

Mr. PACKARD. I understand. In your statement you indicate that NOAA would participate.

Do you have confidence in their willingness to participate?

Mr. HOLT. Yes, we do.

Mr. PACKARD. I understand that they can dump in other areas and perhaps even in our area, that you could dump sludge into the ocean by virtue of barging it out.

Why don't you take that step instead of just going to the expense of an outfall pipeline?

Mr. HOLT. That is indeed a good question. And, yes, there is the ability to, under current Federal law, go to ocean disposal via barge under the Marine Protection Research and Sanctuaries Act, but yet we are precluded from going out by pipeline.

Mr. Sylvester might address the operational side.

Mr. SYLVESTER. In the long term, the cost of a land-based pipeline would be significantly less than the barging operation would entail.

Mr. SEGAR. If I may, I think it is also important to realize that the pipeline would discharge the sludge well below the zone in the oceans at which most of the life that supports fisheries and the biological communities that are very valuable to us live their lives.

So any toxic materials that are in the sludge will be put into a totally different zone of the ocean than we have ever put them into before. However, the barge approach would introduce the sludge at

the surface of the oceans and the scientific community has many questions as to which is the better way to go, and we certainly need this pipeline project to demonstrate whether in fact the sludge can be safely placed below that critical zone of the ocean.

Mr. PACKARD. So your project is scheduled to have the pipeline go to the floor of the ocean to deposit and not some point in between the surface and the floor?

Mr. HOLT. That is correct. The present project takes it out some 8 miles at a depth of 1,000 to 1,300 feet.

Mr. PACKARD. You are asking this approval from the Federal agencies. If I remember right, the California State government has some approvals required, also.

Supposing the Federal Government approved, but you did not or could not get approvals from the State level. Then what happens? Where would you then be?

Mr. HOLT. Hopefully, we will get the approvals and support from the State. We are currently working to accomplish just that.

The California Ocean Plan indeed does prohibit disposal of sludge. However, the State under the water resources control board is proposing to amend that plan.

The draft EIR on the Ocean Plan recommended in a footnote a change to accomplish that. The statement really sets forth and affirms the board's intent that sewerage sludge residues shall be disposed of in a manner found in each case to have the least adverse impact on the total natural and human environment.

So I don't believe that precludes us in that respect.

Also, the circumstances under which the regional board with concurrence of the State board and the EPA may consider granting an interim permit for ocean disposal of sludge residues, and the conditions for such disposal should include, as an example, an EIR which shows clearly that any and all available disposal methods would result in a greater adverse impact on a natural or human environment, once again in the proposed project.

This is also a major change—will be a major change—in State policy. I had the opportunity of testifying before the State board 4 or 5 months ago in regards to this.

The State board clearly recognizes that ocean disposal must be assessed to determine if it is indeed the most environmentally sound method.

Mr. PACKARD. My last question is, Mr. Chairman, I assume—I will have to assume, this being an approved Federal pilot project, that you would make available to this committee and to other agencies all the documentation and data that would help to determine whether ocean outfall of sludge is a feasible process that can be used in other areas of the country?

Mr. HOLT. Congressman Packard, we would be more than happy to share that information. As a matter of fact; we, through the administration of this program, are asking that there be on the Commission representatives of NOAA, the EPA, the environmental groups and we would have one representative, but that steering board would be made up of those various disciplines.

Mr. PACKARD. It is interesting, Mr. Chairman. This is my day for projects that are in my district. This is the second one.

I think you recognize that we must have a corner at least for today on some waste disposal problems. Just for today, though.

Thank you.

Mr. ROE. The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

First of all, it was about 2 years ago that the Investigation Oversight Subcommittee of this committee was out visiting a wastewater treatment plant and had an extensive hearing going from 10 in the morning to 8 in the evening or thereabouts.

Mr. HOLT. Correct.

Mr. STANGELAND. We are anxious to see what can be done to facilitate a pilot project of this kind. I would ask if you could please describe for the committee or for the record the amount and type of monitoring you intend to perform.

If you would like to document that for the record, fine. Or if you can briefly give it to us.

Mr. HOLT. I think it is important that you indeed know that because of the type of decision you have to make in putting forth the legislation.

I think the best person to answer is Dr. Segar.

Dr. SEGAR. There is a summary of the proposed program included in the testimony for the record that has been presented. The results of a document produced by Cal-Tech is there. It is 80 pages long, and it fully describes the project and has been provided to the committee, I believe.

The design of the project at the moment has been taken to the stage where a considerable number of members of the scientific community have in fact reviewed that overall design and have suggested changes in the design and many of those changes have been incorporated.

The design of specific activities under the project will, of course, change as the project continues. As of this point in time, NOAA is already doing some prestudy site monitoring in the area where the pipeline would be placed.

So this is a fairly well described program.

Mr. STANGELAND. I am advised we don't have the 80 page Cal-Tech document. If you would provide that for us, we would appreciate it.

[The report received follows:]

EQL Report No. 21

DEEP OCEAN DISPOSAL OF SEWAGE SLUDGE OFF ORANGE COUNTY, CALIFORNIA: A RESEARCH PLAN

by

NORMAN H. BROOKS

ROBERT G. ARNOLD

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EQL REPORT NO. 21

November 1982

Environmental Quality Laboratory
CALIFORNIA INSTITUTE OF TECHNOLOGY
Pasadena, California 91125

20-955 O—84——50

PREFACE

Even though the discharge of sludge into the ocean via an outfall is not now permitted, this research plan has been prepared to show what could be learned with a full scale experimental sludge discharge of 150 dry tons/day by the County Sanitation Districts of Orange County into deep water (over 1000 feet).

To provide a wide range of inputs and evaluation, a broad-based Research Planning Committee was established to advise the Environmental Quality Laboratory on the overall content and details of the research plan. Two meetings were held at EQL on:

March 4-5, 1982: The entire Committee
July 19-20, 1982: A working subgroup of the Committee

The entire Committee is listed in Appendix B, with footnotes to indicate meeting attendance. Those unable to come to a meeting were asked to comment on the drafts by mail or telephone. We gratefully acknowledge the members of the Research Planning Committee for their generous help in formulating the research tasks and reviewing report drafts.

The preparation of this volume has been supported by the National Oceanic and Atmospheric Administration (Grant No. NA81RAC00153) and the County Sanitation Districts of Orange County. We thank the representatives of the sponsoring agencies for their valuable assistance, in particular:

NOAA: Alan Mearns, John Calder, Kilho Park, and Lawrence Swanson

CSDOC: Fred Harper, Blake Anderson, and Gregg Pamson

The opinions and judgments expressed in this report are solely the responsibility of the authors. Concurrence of Research Planning Committee members or the sponsoring agencies should not be presumed.

Finally, we thank the EQL staff for their skillful and devoted efforts in assembling this report, often in the face of never-ending changes, in particular, Marcia Nelson for typing, and Theresa Fall for graphics and editorial work.

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CHAPTER I

EXECUTIVE SUMMARY

A seven-year research program is recommended to study the environmental and possible health effects of a proposed ocean discharge of sewage sludge via a special pipeline to an unprecedented depth of about 1000 to 1300 feet (300-400 meters) off the coast of Orange County in southern California.

Sludge Disposal Problem

Disposal of sludge presents difficult and costly problems for sewage treatment agencies throughout the United States. Land disposal or combustion requires prior extraction of much of the water from the sludge mixture, at a considerable energy expense. Combustion can cause air pollution; land disposal can result in groundwater contamination. Although land and air disposal are usually considered allowable options, ocean disposal is generally not. More specifically, the discharge of sludge through an outfall pipe is prohibited by the Clean Water Act, as amended in 1981, although barge dumping restrictions and prohibitions under the Marine Research, Sanctuaries and Protection Act are being reconsidered in Congress. Despite existing legal and regulatory restrictions, there is nationwide interest in utilizing marine waters for disposal of municipal sludges, as evidenced by a series of recent reports in which such activity is considered (NRC, Commission on Natural Resources, 1978; Goldberg, 1979; NRC, Marine Board, Assembly of Engineering, 1981; NACOA, 1981).

For many coastal cities, ocean disposal is an attractive alternative not only because it is less expensive than land disposal or combustion of sludge, but also because the environmental effects may be less significant than those resulting from other options.

The County Sanitation Districts of Orange County (CSDOC) collects, treats, and disposes of wastewater for two million people. The treated effluent is discharged through a ten-foot (3 m) diameter outfall with a multi-port diffuser more than 4 miles (6.5 kilometers) offshore at a depth of 195 feet (60 meters). The mean flow rate is approximately 200 million gallons per day (760,000 m^3/d). The performance of this outfall has been excellent with minimal adverse effects.

Residual solids from wastewater treatment amount to 150 tons (136,000 kg) per day (dry weight) suspended in three million gallons of wastewater (1.2 percent solids by weight). This material consists

of anaerobically digested sludge from primary sedimentation tanks and raw waste activated sludge from the secondary treatment process.

Proposed Deep-Ocean Discharge of Sludge

The ocean basins a few tens of miles off the southern California coast drop to depths of over 3000 feet (1000 meters). An earlier Environmental Quality Laboratory report (Jackson, et al., 1979) recommended a depth of about 1300 feet (400 meters), on the side slope of a basin, as the best candidate site for further sludge disposal study. It was felt that environmental effects associated with marine sludge disposal would be minimal at that depth. CSDOC now proposes an experimental discharge of its sludge through a small pipeline terminating 7.5 miles (12 kilometers) from the mouth of the Santa Ana River at a depth of 1000-1300 feet (300-400 m). The pipe (about 18-inches in diameter) would be continuously welded and coated both internally and externally; it could easily be laid from a pipe-laying barge.

Savings attributable to this option would be nearly $10 million per year, including the annualized cost of capital as well as annual operation, maintenance, research and monitoring costs.

The environmental impacts of ocean disposal are expected to be slight, based on what is currently known. We do not anticipate any human health impact or risk. If the research plan presented herein reveals unacceptable impacts, CSDOC will modify or discontinue its ocean discharge operations. Upon termination of the discharge, any sludge-related changes in biological communities are expected to be reversed within only a few years.

CSDOC is currently seeking approval to conduct this experiment through special legislation and/or regulatory actions at both state and federal levels.

Need for Research

Because the CSDOC sludge outfall would be about four or five times deeper than existing wastewater or sludge outfalls, there are special research needs for system engineering and evaluation of environmental effects. The specific goals of this research plan are:

1. To characterize the physical, chemical, and biological properties of the sludge.

2. To recommend: (i) depth and location of the end of the sludge outfall; (ii) in-plant processing of sludge before discharge; and (iii) possible modifications in pretreatment (or source control) programs for trace contaminants.

3. To make pre-discharge predictions of sludge-induced

environmental impacts. These would include changes in water-column oxygen concentrations and benthic sedimentation rates.

4. To observe changes in water column and benthic communities and measure the distribution of important chemicals in the water, in the sediment, and in organisms.

5. To find what human health risks (if any) are associated with deepwater sludge discharge, either directly through human contact with seawater or indirectly through consumption of seafood.

6. To determine the mechanisms by which ecological and chemical changes occur.

7. To assess the predictability of the effects of deep sludge discharge by comparing model predictions with monitoring data.

8. To summarize and recommend methodology for designing systems for sludge discharge into the ocean and predicting the effects.

9. To summarize the effects of the Orange County sludge discharge, and evaluate their significance with respect to marine resources.

Research Plan

To satisfy the goals listed above, a comprehensive research plan is presented, consisting of 41 tasks arranged in nine groups:

Task Group 1. Survey for Discharge-Related Effects (pre- and post-discharge monitoring)
2. Site Characteristics
3. Sludge Characteristics
4. Modeling
5. Preliminary Design
6. Biological Impacts--Laboratory Studies
7. Biological Impacts--*In-Situ* Studies
8. Special Studies
9. Integration, Analysis, and Interpretation

Highlights of the research plan are presented in Chapter 3, and detailed descriptions of individual tasks are in Chapter 4.

Project Organization

The research plan describes the work to be done without regard to who will perform which tasks. Although major parts of the proposed work may be done under grants and contracts to universities and private firms, significant portions would be performed by CSDOC (in-house) and by the Southern California Coastal Water Research Project.

An administrative board, consisting of a representative from each of the funding agencies, would be established to set overall policy to be carried out by a project research administrator selected by the board. Except for in-house work by CSDOC, all the research tasks should be funded through a joint administrative agreement of the various funding agencies (such as NOAA, EPA, the California State Water Resources Control Board and CSDOC). Using funds provided by the sponsoring agencies as a single pool, the project research administrator would carry out the research plan by means of grants and contracts; research proposals would be evaluated with peer reviews.

A research review committee would be established to advise the research administrator on priorities, changes in the research plan, and evaluation of proposals. An annual summary and evaluation of the results would be prepared for the regulatory agencies, CSDOC, NOAA, and other sponsors. Additional administrative details are discussed in Chapter 5.

Thus management of the research project would be independent of CSDOC, the agency which is responsible for building and operating the sludge disposal system. The organizational structure is summarized in Figure 5.1 on p. 94. Regulatory agencies would be responsible for specifying the conditions under which the sludge discharge may continue.

Project Cost

The research project would include two years of predischarge work and five more years of study after the discharge begins. The estimated total research cost is approximately $1.5 to 2 million per year. The breakdown by year and task group is shown in Table 5.1, p.98. These R & D costs are in addition to the usual capital, operation and maintenance costs for the sludge outfall system.

National Significance

National policy for sludge disposal is currently being reviewed, especially with regard to permitting ocean disposal. If the experimental deep-water sludge discharge goes forward as proposed, research and monitoring activities recommended in this report will produce results which are potentially very important to policy-makers. For instance, if related environmental effects are found to be very small, then the ocean discharge option may be viewed more favorably vis-a-vis air and land disposal options.

If ocean discharge of sludge is to be permitted in certain cases, then there is need for better predictive modelling and design methods for deep-water sludge disposal systems. Some of the tasks of this research plan are directed toward developing and improving these capabilities.

CHAPTER 2

PROPOSED DEEP-OCEAN SLUDGE DISCHARGE

The research plan presented in this report is designed to investigate the effects of a proposed discharge of sewage sludge into the ocean at 300 to 400 m depth off the Orange County coast in southern California. Although such a discharge is not now legal, the County Sanitation Districts of Orange County (CSDOC) is seeking approval for a unique research and demonstration project to discharge sludge at that unprecedented depth and to fully study its behavior and effects.

The discharge would consist of 3 million gallons per day of sludge containing about 1.2 percent wastewater solids, or 150 dry tons per day. These solids are very small particles derived from sludge digesters or from the activated sludge process. After discharge, they are expected to sink in the ocean slowly over a wide area.

This chapter is a summary of background technical information related to the proposed research project. Section 2.1 describes the Orange County wastewater and sludge treatment facilities. Section 2.2 discusses the physical and chemical nature of sludge. Characteristics of the receiving water are presented in Section 2.3. Section 2.4 provides a description of oceanographic and chemical processes which determine the fates of sludge and sludge constituents in marine waters. Finally, Sections 2.4 and 2.5 consist of an account, based on existing information, of what will probably happen in an environmental sense if sludge is discharged into the ocean.

2.1 ORANGE COUNTY FACILITIES AND SLUDGE DISPOSAL PLANNING

The County Sanitation Districts of Orange County (CSDOC) serves the wastewater treatment and disposal needs of approximately two million people and various industries in the northwestern portion of Orange County (Figure 2.1). CSDOC operates two treatment facilities -- Treatment Plant No. 1 and Treatment Plant No. 2 which together are known as the "Joint Works." The agency collects and treats an average daily wastewater flow of approximately 200 mgd. All wastewater receives at least primary treatment. A flow of about 125 mgd is also provided with some form of biological treatment (trickling filter or activated sludge). Sludges from these processes are now anaerobically digested and dewatered prior to disposal. Section 2.2 provides a more detailed description of sludge sources and characteristics.

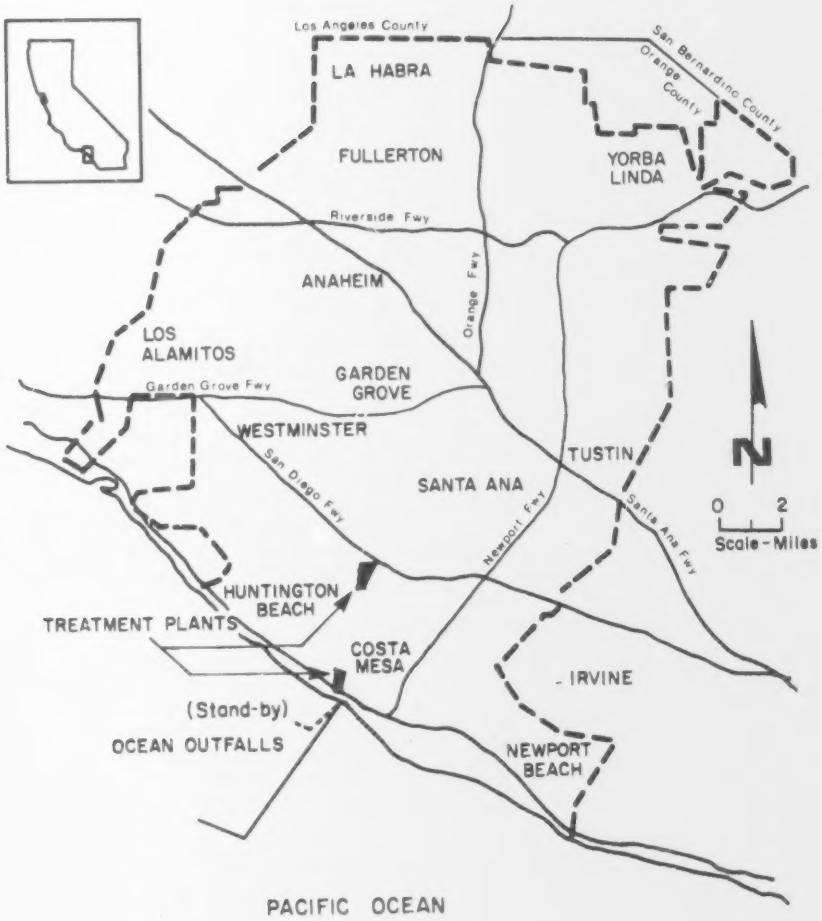

Figure 2.1 Existing CSDOC Boundaries, Treatment Facilities, and Wastewater Outfalls.

Dewatered, dried sludge is trucked to Coyote Canyon Landfill, where the material is further composted to at least 50 percent solids prior to incorporation in the landfill. In 1978, an average of about 120 tons per day of digested sludge (on a dry-weight basis) were disposed of in this fashion. The treated effluent along with centrate from sludge dewatering is discharged to the Pacific Ocean via a 27,400-foot long outfall (including a multiport diffuser which comprises the last 6000 feet of pipe). The discharge depth for treated wastewater is about 195 feet.

In 1974, CSDOC, in concert with other southern California operating agencies, EPA, and the California State Water Resources Control Board, organized the Los Angeles/Orange County Metropolitan Area Sludge Management Project (LA/OMA) to identify and evaluate a wide range of sludge disposal alternatives within the Los Angeles basin. The sludge management program recommended for CSDOC consisted of landfill disposal of digested, dewatered, and composted sludge. The plan carries with it potential environmental costs in terms of land use, groundwater quality, and air emissions associated with truck transport. These and related mitigation measures are discussed at length in the LA/OMA Draft Facilities Plan (1980).

Although much cheaper, ocean disposal alternatives were discarded by LA/OMA (1980) because of (i) federal and state prohibitions against marine sludge disposal (and ineligibility for federal construction grants) and (ii) the need for further monitoring and research to show that environmental impacts would be acceptable. A 400-meter discharge depth was recommended for further study in the EQL report on deep-ocean disposal alternatives (Jackson, Koh, Brooks, and Morgan, 1979).

Research proposed herein will provide a detailed determination of the environmental effects of marine sludge disposal via an outfall to 300 or 400 meters. The program envisioned offers minimal risk of irreversible environmental damage or impacts to human health. Pathways for possible human exposure to trace contaminants or pathogens will be carefully monitored as part of the overall research objective; however, we consider the chances of related health effects to be very remote.

Significant economic benefits would attend marine disposal of sludge instead of land disposal, both to CSDOC and (potentially) to other coastal agencies. Table 2.1 (from Brooks and Krier, 1981) summarizes the estimated capital, annual, and unit costs for land-based and ocean disposal alternatives described previously. The cost of ocean disposal is about one-quarter of estimated costs for the recommended (LA/OMA) land-based alternative.

The reader is cautioned that these are rough cost estimates (in 1981 dollars) which need to be refined by further detailed engineering and planning studies. This report, for instance, estimates that research and monitoring costs would be $1.5-2.0 million

Table 2.1**

Estimated Costs of Digested Sludge

Disposal Alternatives for Orange County

Sanitation Districts* (150 tons/day)†

	Landfill disposal (by truck)	Ocean disposal (by sludge outfall to to 300m depth)
	$ million	$ million
Capital		
Land	$23-36	
Dewatering, screening	6.0	1.0
Storage	4.5	
Trucking	2.0	
Pipeline		5-10
TOTAL CAPITAL COST	35-48	6-11
Annual costs		
Capital#	4.0-5.3	0.7-1.2
Annual operation and maintenance	6.6	0.25
SUBTOTAL, Capital and O & M.	10.6-11.9	1.0-1.5
Special research and monitoring program	-	0.75-1.25
TOTAL, ALL ANNUAL COSTS ($ million)	10.6-11.9	1.75-2.75
COST PER TON† (dollars)	$82-92	$13-21

* Based on preliminary data provided by Orange County Sanitation Districts, Feb. 1981.

\# Based on 10.25% interest, amortized as follows: land, interest only; storage tanks and outfall pipe, 30 yrs; pumping, dewatering and screening equipment, 10 yrs.; trucks, 7 yrs.

† Actual digested sludge discharge is 150 tons/day which is derived from 350 tons/day of raw sludge. For consistency unit costs are given in costs per ton of original raw sludge.

** From Brooks and Krier, 1981.

per year (1982 dollars), which is about twice the cost given in Table 2.1. However, many of the objectives of this research plan go beyond Orange County's disposal problem and serve national needs; thus assignment of only 50 percent to this particular disposal activity is reasonable for purposes of economic comparison. It should also be noted that the research and monitoring expense will drop sharply after the first five years of discharge if the results are favorable.

The proposed sludge outfall for the Orange County deepwater sludge disposal experiment planned herein will consist of a single pipeline (probable diameter 18 to 24 inches) extending from the shoreline a distance of about 12 km to a depth of 300 to 400 m, as shown schematically in Figure 2.2. The exact depth and location will be determined during preliminary design (Task Group 5). The sludge discharge rate will be approximately 3 mgd (million gallons per day), consisting of a mixture of digested primary sludge (0.8 mgd), unthickened waste activated sludge (2.2 mgd) and a small amount of digested trickling filter humus (0.02 mgd). This material may be prediluted with secondary effluent before discharge (perhaps one or two parts per part of sludge). Predilution will both decrease the resulting concentrations of sludge contaminants and simplify the logistics of maintaining a minimum flowrate through the pipeline.

Under present federal laws (the Clean Water Act) and EPA regulations, the proposed sludge discharge (by ocean outfall) is not permitted. California's Ocean Plan (1978) also prohibits ocean discharge of sludge. Nonetheless, the CSDOC is seeking permission for an experimental discharge over a five-year period. The research plan presented in this report is recommended to evaluate the effects of such a discharge and to produce new scientific and engineering information for national use. If the effects are judged to be acceptably small, CSDOC would continue to dispose of sludge in the ocean. On the other hand, if environmental impacts are considered unacceptable by regulatory agencies, the agency would discontinue or modify its sludge discharge.

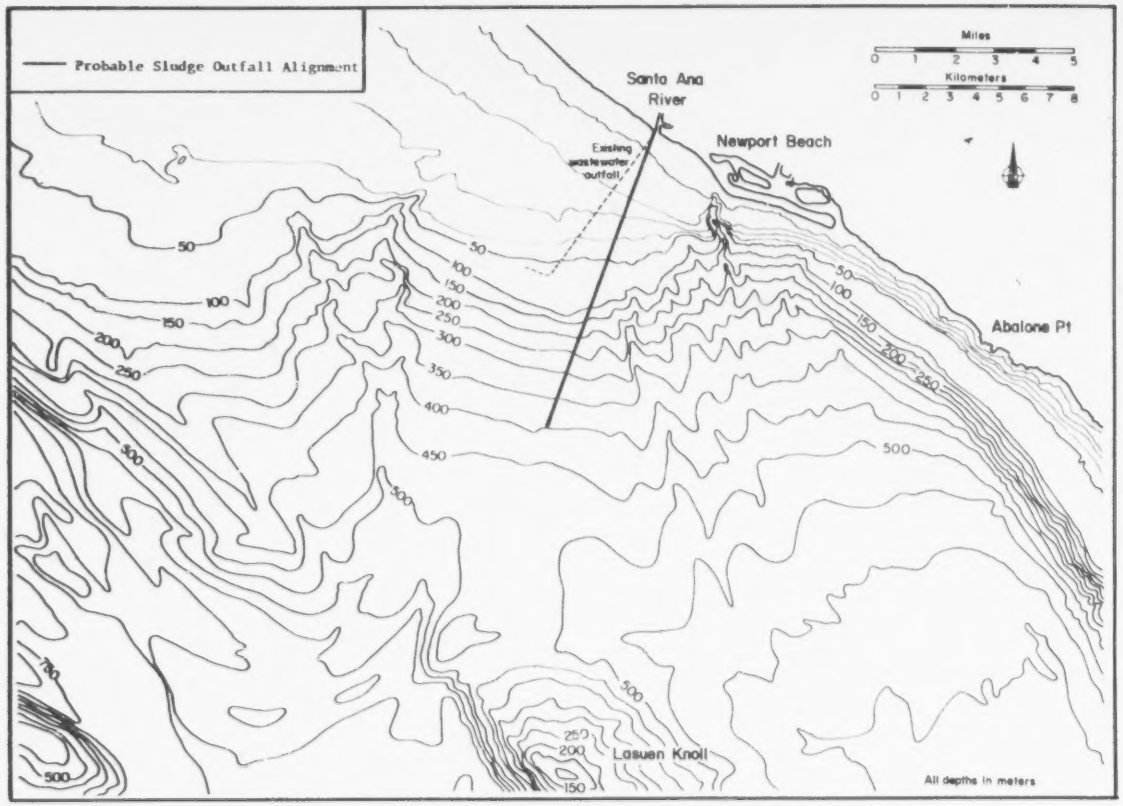

Figure 2.2 Basin Bathymetry off Orange County, California. Existing CSDOC Wastewater Outfall and Candidate Sludge Outfall Alignments.

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2.2 THE NATURE OF SLUDGE

As indicated earlier, sewage sludge contains the solids removed during wastewater treatment. Digested sewage sludge is a black liquid containing 2 to 5 percent suspended solids consisting of small organic and inorganic particles in a size range of about 5 to 50 microns. Anaerobic digestion is frequently followed by dewatering and composting. Well composted sludge resembles dark, coarse earth and is sometimes used as a soil amendment.

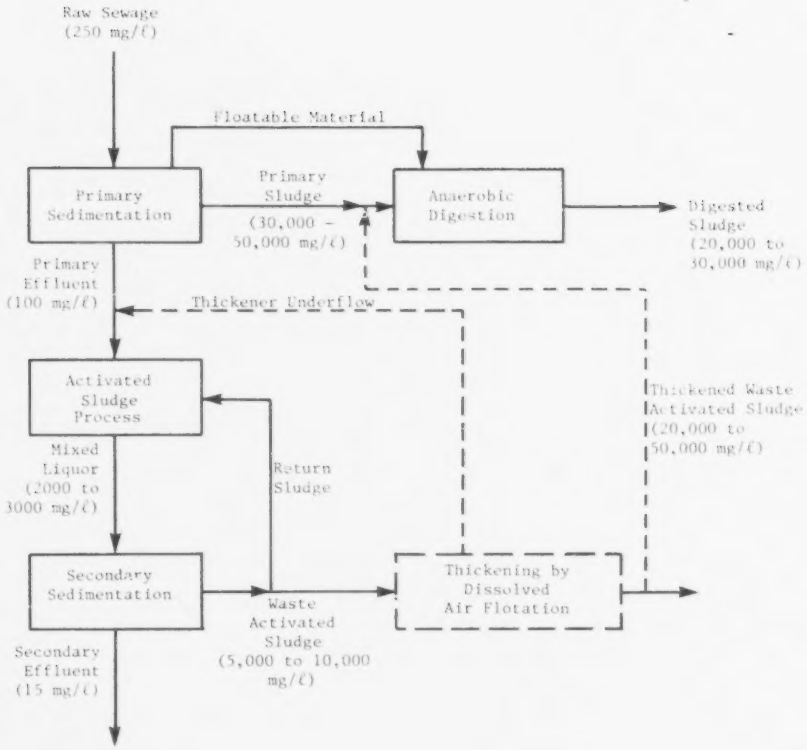
Most municipal sludges, including Orange County's, contain measurable amounts of trace metals and such refractory organics as pesticides and industrial solvents. Neither dewatering nor anaerobic digestion effectively reduces these contaminants. Marine disposal methods would rely on rapid dispersal to ensure that seawater concentrations of such materials are maintained below potentially harmful levels.

2.2.1 Sludge Sources

Wastewater treatment processes produce a variety of different sludges. Figure 2.3 is a schematic representation of the major process train now used by CSDOC. Typical concentrations of wastewater and sludge solids are indicated at key points. Primary sedimentation removes settleable organic and inorganic materials from wastewater via quiescent settling in large tanks. Floatable materials such as oil and grease are skimmed from the primary sedimentation tanks.

A portion of the primary effluent is treated biologically to capture or oxidize dissolved organic matter and fine particles; resultant biological solids are separated in secondary clarifiers. Secondary sludges (waste-activated sludge and humus from trickling filters) are further thickened and then stabilized by anaerobic digestion in combination with the raw primary sludge prior to dewatering and disposal.

The volume and chemical composition of sludges contributing to the proposed CSDOC ocean discharge are summarized by source in Table 2.2. (Table 2.2(a) gives concentrations, while Table 2.2(b) gives mass emission rates.) CSDOC has proposed to discharge undigested waste activated sludge, but another option would be to thicken and digest waste activated as well as primary sludge before ocean discharge. The latter alternative will be adopted if warranted by projected (estimated) receiving water or sediment oxygen reductions.



Note: Dashed items required only for land disposal of sludge.

Figure 2.3 Simplified flow schematic for activated sludge secondary treatment. (Numerical values represent suspended solids concentrations which are typical of CSDOC system.)

2.2.2 Chemical Properties of Sludge

Sludge chemistry depends upon the nature of materials discharged to the sewer system (i.e., the degree of industrialization within the service area) and the processes used to treat wastewater and sludge. Typically, raw sludge solids within CSDOC are 70 to 80 percent volatile. (Volatile solids are those materials which can be volatilized at 550°C.) Most volatile solids are organic.

Some important contaminants in wastewater are removed by physical, chemical, or biological treatment processes and concentrated in the sludge. More than 90 percent of some trace metals and trace organics from the raw wastewater are found in the sludge. The majority of these, in turn, are associated with particles. Table 2.3 provides typical ranges for trace metal concentrations in sludge as well as data specific to CSDOC. In general, the CSDOC sludges contain levels of major and trace metals which are representative of sludges derived within major U.S. municipalities. Mass emission rates of trace contaminants in CSDOC sludges to be expected following construction of additional secondary treatment capacity are summarized in Table 2.2(b). As indicated in Figure 2.4, mass flow rates of specific trace contaminants have decreased in the CSDOC sewerage system due to recent improvements in industrial waste pretreatment measures.

Nutrients such as nitrogen, phosphorus, and organic carbon are also important sludge constituents. Existing sludge nutrient data are included within Table 2.4.

2.2.3 Physical Properties of Sludge

The physical properties of sludge particles (density, particle size, and settling characteristics) influence their fate subsequent to marine discharge (Koh, 1982; Kavanaugh and Leckie, 1980). The bulk specific gravity of liquid sludge ranges from slightly greater than 1.00 to about 1.02, depending on the solids concentration and type of sludge. Particulate materials within sludge have specific gravities ranging from slightly above 1.0 (biological solids) to about 2 7 (fine sand, silt and clay).

The range of particle sizes in a sludge sample stretches over several orders of magnitude -- from colloids of less than 1 μm in diameter to visible material in the range 50 to 100 μm.

The distribution of particle sizes can vary greatly between samples, depending upon the sludge source and treatment it receives. Figure 2.5 shows a typical cumulative distribution of total volume versus particle size for digested primary sludge. About half the volume of sludge solids (or mass if densities are assumed to be

Table 2.2(a) Projected Quality Characteristics in Various CSDOC Sludge Streams[a]

SLUDGE STREAM	Vol. MGD	TSS mg/l	VSS mg/l	BOD mg/l	Ag mg/l	Cd[c] mg/l	Cr mg/l	Cu mg/l	Ni mg/l	Pb mg/l	Zn mg/l	PCB µg/l	CMC Pesticides µg/l
Plant No. 1, Primary, Digested[b]	0.30	25,000	13,000	2,500	2.0	3.1	14	55	6	17	70	200	5
Plant No. 2, Primary, Digested[b]	0.50	25,000	13,000	2,500	2.5	3.1	10	35	4	17	50	70	9
Plant No. 1, WAS Unthickened, Undigested[b]	0.90	5,000	3,800	1,000	0.15	0.5	3	6	0.3	1.5	7	40	1
Plant No. 2, WAS Unthickened, Undigested	1.30	8,000	6,000	1,600	0.3	0.8	3	7	0.3	2.5	7	20	3
Trickling Filter Humus, Digested[b]	0.02	20,000	16,000	2,000	1.5	8	25	50	2	18	80	500	50
TOTAL	3	11,500	7,000	1,700	0.8	1.4	5	16	1.5	6	20	50	4
Total (mg/kg Dry Weight Basis)					70	110	440	1400	130	500	1700	5	0.4

[a]Projections are based on 1981 influent quality and operational parameters assuming that planned secondary treatment capacity at CSDOC Plant No. 2 is on-line. Source of figures: Enclosure II to Orange County Sanitation Districts' letter, dated 25 November 1981.

[b]Figures are based on data representative of the period July 1979 to June 1981.

[c]The cadmium figures provided are based on current plant operations and reflect industrial waste source control improvements implemented after November 1981. Source control measures planned for 1982-83 are expected to reduce the average cadmium concentration in CSDOC sludge (combined) to approximately 85 mg/dry kg before the end of 1983.

Table 2.2(b) Projected Mass Emission Rates of Sludge Contaminants in Various CSDOC Sludge Streams[a]

SLUDGE STREAM	Volume MGD	TSS MT/day	VSS MT/day	BOD_5 (20°c) MT/day	Ag kg/day	Cd[c] kg/day	Cr kg/day	Cu kg/day	Ni kg/day	Pb kg/day	Zn kg/day	PCB kg/day	CHC Pesticides kg/day
Plant No. 1, Primary, Digested[b]	0.30	28	15	2.8	2.3	3.5	16	63	6.8	19	80	0.2	0.006
Plant No. 2, Primary, Digested[b]	0.50	47	15	2.8	4.7	5.9	19	66	7.6	32	95	0.1	0.017
Plant No. 1, WAS Unthickened, Undigested[b]	0.90	17	13	3.4	0.5	1.7	10	21	1.0	5.1	24	0.1	0.003
Plant No. 2, WAS Unthickened, Undigested	1.30	39	29	7.9	1.5	3.9	15	34	1.5	12	34	0.1	0.015
Trickling Filter Humus, Digested[b]	0.02	1.5	1.2	0.2	0.1	0.6	1.9	3.8	0.2	1.4	6.1	0.0	0.004
TOTAL DAILY MASS EMISSION RATE	3.0	133	73	17	9	16	62	190	17	70	240	0.5	0.045

[a]Projections are based on 1981 influent quality and operational parameters assuming that planned secondary treatment capacity at CSDOC Plant No. 2 is on-line. Figures are calculated based on flows and sludge quality characteristics provided in Table 2.2(a).

[b]Figures are based on data representative of the period July 1979 to June 1981.

[c]Source control measures planned for 1982-83 are expected to reduce the average cadmium concentration in CSDOC sludge (combined) to approximately 85 mg/dry kg before the end of 1983. This represents a reduction of about 23 percent below the cadmium figures provided here.

Table 2.3

Trace Metal Concentration Ranges
(mg/kg dry solids)

METAL	CONCENTRATION RANGE	TYPICAL RANGES	TYPICAL CSDOC COMPOSITE
Ag	4 - 150	10 - 50	70
Cd	2 - 1500	20 - 1000	220
Cr	16 - 40000	100 - 1000	440
Cu	52 - 10400	400 - 2000	1400
Fe	6000 - 74000	10000 - 30000	no data
Mn	73 - 39000	100 - 500	no data
Ni	7 - 5300	100 - 500	130
Pb	52 - 26000	200 - 2000	500
Zn	570 - 49000	1000 - 3000	1700

Note: The extremes of concentration on the high side can be traced directly to industrial discharges. The low values generally come from plants receiving only domestic sewage. Values typical of existing CSDOC sludge quality are shown in the third column.

Sources: Camp, Dresser, McKee, 1975; East Bay Municipal Utilities District, 1975; Page, 1974; Shipp and Baker, 1975; Van Loon, et al., 1973; Van Loon and Lichwa, 1973. CSDOC composite figures based on routine Orange County Sanitation Districts monitoring results.

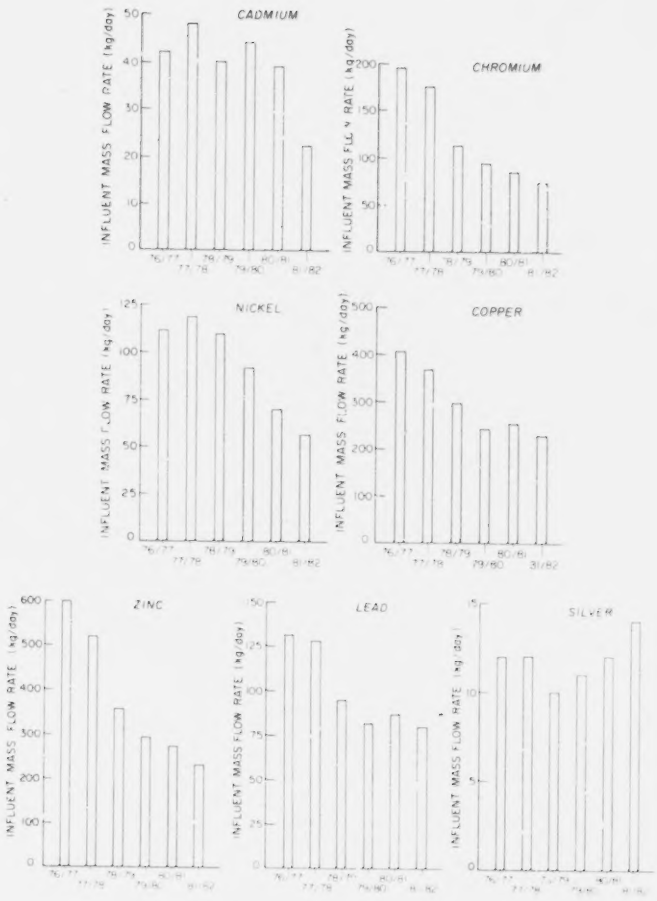


Figure 2.4 Recent Trends in County Sanitation Districts of Orange County Influent Mass Flow Rates (Daily Average) of Selected Trace Metals.[1/][2/]

[1/] Figures are based on routine wastewater monitoring conducted by County Sanitation Districts of Orange County's personnel.

[2/] Observed reductions in influent metals mass flow rates generally attributable to source control improvements among industries tributary to the CSDOC wastewater collection and treatment system.

Table 2.4(a) Typical Concentrations of Volatile Solids, Fat and Grease and Nutrients for Various Sludges

Typical values, percent dry solids				
Type of Sludge	Volatile Solids	Fat and Grease	Nitrogen, as N	Phosphorus as P
Raw primary	75	6 to 35	2.5	0.7
Waste activated	81	5 to 12	5.6	3.1
Trickling filter solids	64 to 86	6	5 to 15	1.2
Digested sludge	50 to 60	3.0 to 17	2 to 5[a]	1 to 3

a. Includes particulate and dissolved nitrogen.

Sources: (1) US EPA: Process Design Manual for Sludge Treatment and Disposal, September 1978, EPA 625/1-79-001

(2) WPCF Manual of Practice No. 2: Utilization of Marine Wastewater Sludge, 1971.

Table 2.4(b) Typical Concentrations of Volatile Solids, Fat and Grease and Nitrogen in Various CSDOC Sludges

Typical values, percent dry solids				
Type of Sludge	Volatile Solids	Fat and Grease	Nitrogen, as N	Phosphorus as P
Raw primary	75	25	2.5	
Waste activated (undigested)	80	8		
Waste activiated (digested)	77	6	No data	No data
Trickling filter	65	11		
Digested primary	55	8	3.0	

Sources: Personal communication with Gregg Pamson of CSDOC.

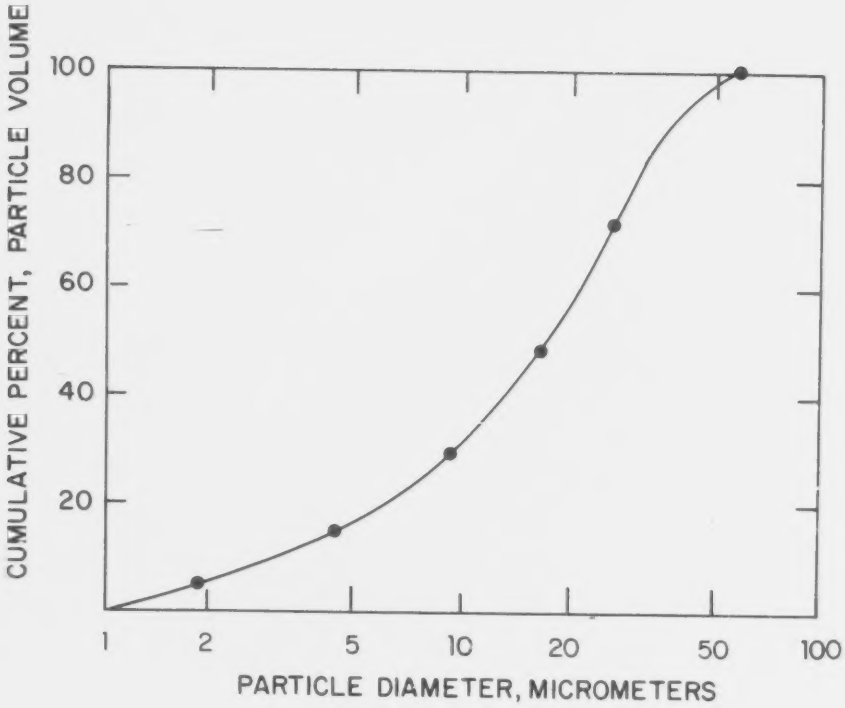


Figure 2.5 Typical particle size distribution for digested primary sludge (Faisst, 1976).

constant) is comprised of particles less than 20 μm in diameter; particles 50 μm and smaller comprise 90 percent of the particle volume.

Prediction of sludge behavior and impacts subsequent to ocean discharge requires information on sludge settling characteristics. Settling is affected by both particle size and density. Measurement of these parameters, however, is difficult, and particle sedimentation is usually characterized with simple settling column experiments. Starting with a uniformly mixed column, sludge concentrations in seawater are sampled over time at a fixed point in the settling column. Changes of solids concentration are then used to develop settling velocity distributions, such as those shown in Figures 2.6 and 2.7 (Faisst, 1980). Figure 2.6 indicates that the mean settling velocity decreases with increased dilution, perhaps due to reduced coagulation effects. They also show that 35 to 70 percent of the sludge particles (by weight) settle with velocities of less than 10^{-3} cm/sec -- less than one meter per day. Thus sludge may spread over wide areas prior to reaching the bottom. It is important to note, however, that two mechanisms participate in the downward migration of sludge particles: (i) gravity settling and (ii) downward diffusion. The second mechanism is significant for particles with small fall velocities ($<10^{-3}$ cm/sec).

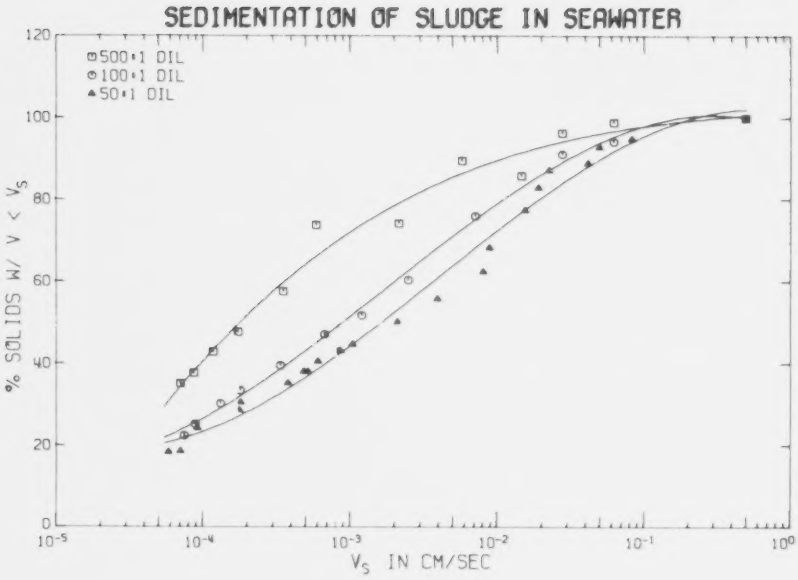


Figure 2.6 Fall velocity distributions for digested primary sludge. Sludges were obtained from the County Sanitation Districts of Los Angeles County and diluted as indicated prior to the start of settling column experiments (from Faisst, 1980).

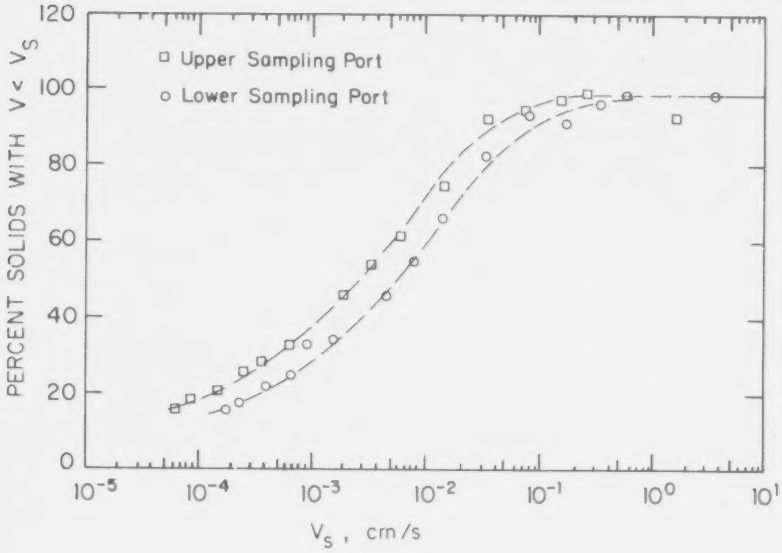


Figure 2.7 Fall velocity distributions for CSDOC digested primary sludge diluted 100:1 with seawater, as determined from samples at two ports along the settling column (Faisst, 1980).

2.3 CHARACTERISTICS OF THE SITE

2.3.1 Bathymetry

The underwater topography off southern California mimics the rugged mountains onshore. The bathymetry is characterized by a number of deep basins with depths of about 1000 meters (Figure 2.8). Deeper portions of these basins are completely surrounded by steep slopes below the sill depths. The various sills connecting the basins vary in depth but are generally several hundred meters deep.

The bathymetry off the Santa Ana River mouth is shown on a larger map in Figure 2.9. Alignments of both the existing Orange County ocean outfall and a candidate deep-water sludge outfall are also shown. The CSDOC effluent outfall is located on a shelf with the diffuser at an average depth of 60 m. Because of the flat slope of the shelf (0.75%), the discharge is nearly 8 kilometers offshore. Beyond 100 m depth, however, the bottom slope becomes much steeper (5%) so that a sludge outfall terminating at 300-400 m depth need only be 12 km in length or about 50 percent longer than the wastewater outfall. Profiles along the lines indicated in Figure 2.9 are shown in Figure 2.10. It is evident that in the alongshore direction (line ABOKL), the candidate sludge outfall terminus is situated on top of a rise, while in the onshore-offshore direction, it is along the slope. Note also that vertical distances are exaggerated 25 times compared to the horizontal scale. One expects advective transport to be mainly in the alongshore direction, i.e., parallel to the bottom contours.

2.3.2 Profiles of Water Properties

Vertical profiles of water properties were measured near the candidate discharge site within the California Cooperative Oceanic Fisheries Investigation (CalCOFI) at their Station 90.28 (in the vicinity of the proposed discharge site) and more recently by the Southern California Coastal Water Research Project (SCCWRP). Profiles representing statistical summaries of CalCOFI data at Station 90.28 (as analyzed by Dr. Tareah Hendricks of SCCWRP) are presented in Figure 2.11. Calculated values for the mean and standard deviation of station measurements, as well as the full range of values encountered within the sampling program, are provided for each parameter. SCCWRP measurements within the preliminary survey described in Appendix A generally fell within the ranges shown in Figure 2.11.

Density stratification in the deeper layer below 150 meters is quite small; the typical gradient of relative density is $2 \times 10^{-6}\ m^{-1}$, and exhibits little temporal or spatial variation within the basins. The dissolved oxygen concentration decreases steadily with increasing depth to over 400 m. At depths between 300 and 400 meters, concentrations range from 0.5 to 1.5 ml/l (0.7 to 2.1 mg/l).

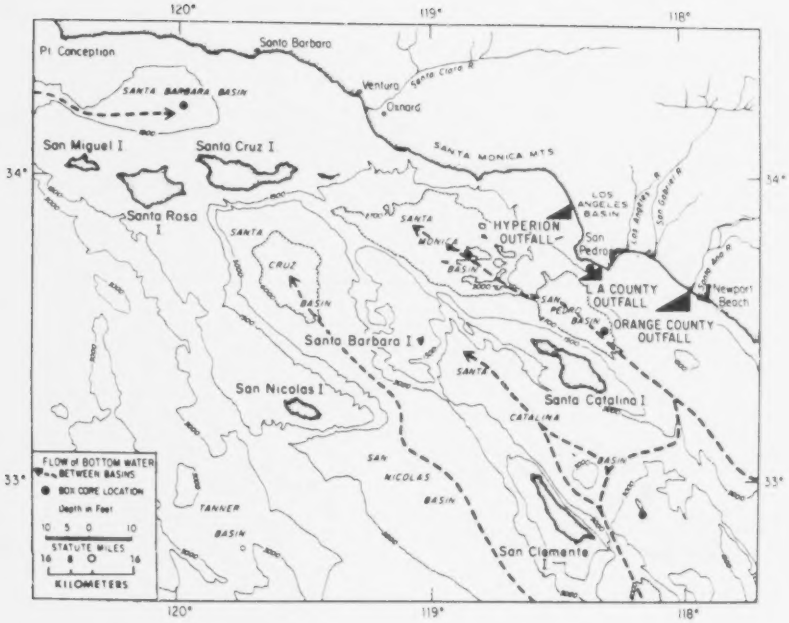


Figure 2.8 The Marine Basins of Southern California (from Bertine and Goldberg, 1977).

2.3.3 Currents

The rugged bathymetry and the hydrodynamic separation of the southward flowing California Current at Point Conception combine to make the current structure in the Southern California Bight very complex. Satellite imagery has revealed clear evidence of large southward migrating eddies shed off Point Conception. Deep drift currents through the deep basins are generally northward (see Figure 2.8).

Data from the depth range of interest for the sludge outfall experiment are scarce, but measurements are in progress at the proposed discharge site. A special set of current measurements was undertaken by SCCWRP during a previous study by the Environmental Quality Laboratory (EQL) (Jackson, et al., 1979). The current meter depth was at 430 m, 40 meters above the bottom, in the Santa Monica Basin. Results are summarized in Figure 2.12. Currents are predominantly parallel to bottom contours. The onshore-offshore motion constitutes almost white noise with only a small peak in the spectrum at the semidiurnal frequency. In contrast, the along-isobath current component exhibits a marked diurnal peak, with an apparent spring-neap cycle, and a peak amplitude of about 0.1 m/s. In addition, flow "events" of a few days' duration occur, with an amplitude of order 0.3 m/s. The latter are presumably topographic waves propagating along the isobaths. Both the diurnal tide and topographic waves may well be general features of the flow in the depth range where the measurements were taken and may be expected to affect the advection and dispersal of sludge at the proposed outfall site. In particular, pollutant transport and dispersion should be much more intense parallel to the bottom contours than normal to them.

The current sequence shown in Figure 2.12 was not measured at the proposed discharge site, but at a similar location in a neighboring submarine basin. Latest measurements at the proposed discharge site during Spring 1982 (personal communication, T. Hendricks) show that there is a persistent upcoast drift flow on the order of 8 cm/sec, or 7 km/day, at 50 m above the bottom. This indicates that advection will disperse sludge particles over a wide area and minimize buildup in the vicinity of the discharge.

2.3.4 Chemistry and Biology

The chemistry of seawater is closely tied to biological processes. The production of plant matter near the ocean's surface causes a depletion of major nutrients and trace metals; it also releases oxygen into the water. The settling of organic matter and its biodegradation in deeper waters produces opposite effects: concentrations of metals (such as copper, cadmium and nickel)

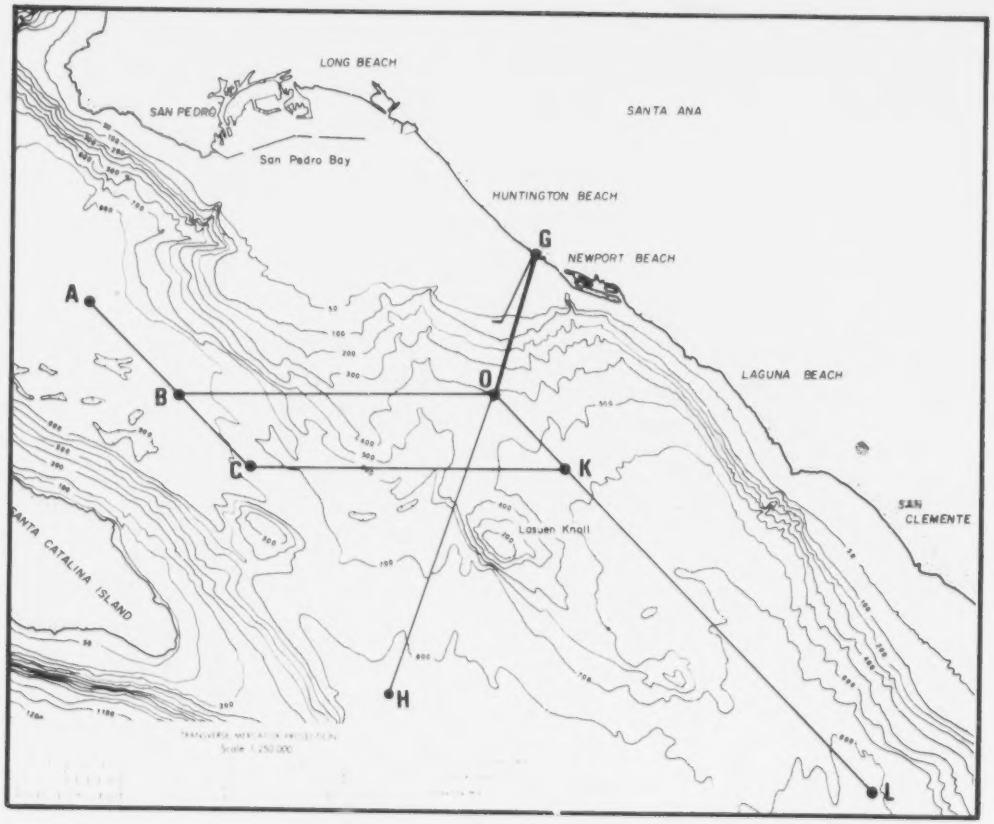


Figure 2.9 Bathymetry of basins near the proposed sludge outfall site. For profiles along the marked lines see Fig. 2.10.

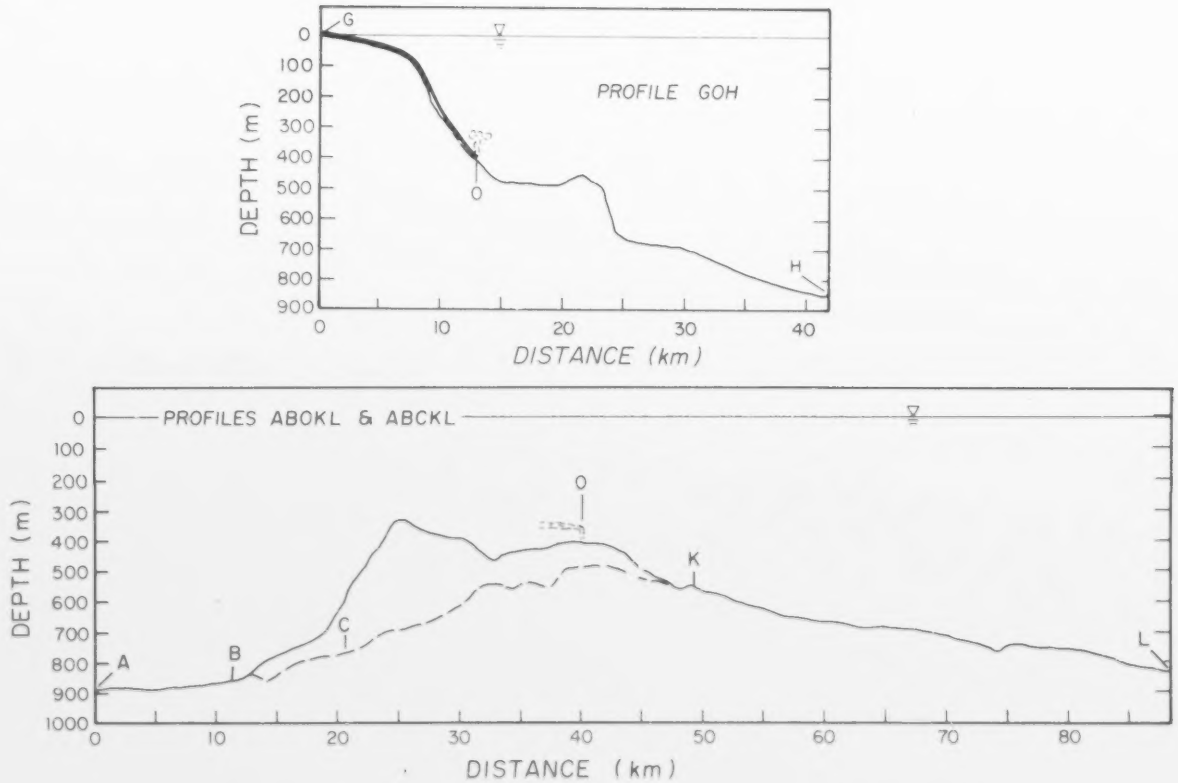


Figure 2.10 Bottom profiles along chosen lines at probable site of deep water sludge outfall experiments (see Figure 2.9 for locations of profiles indicated).

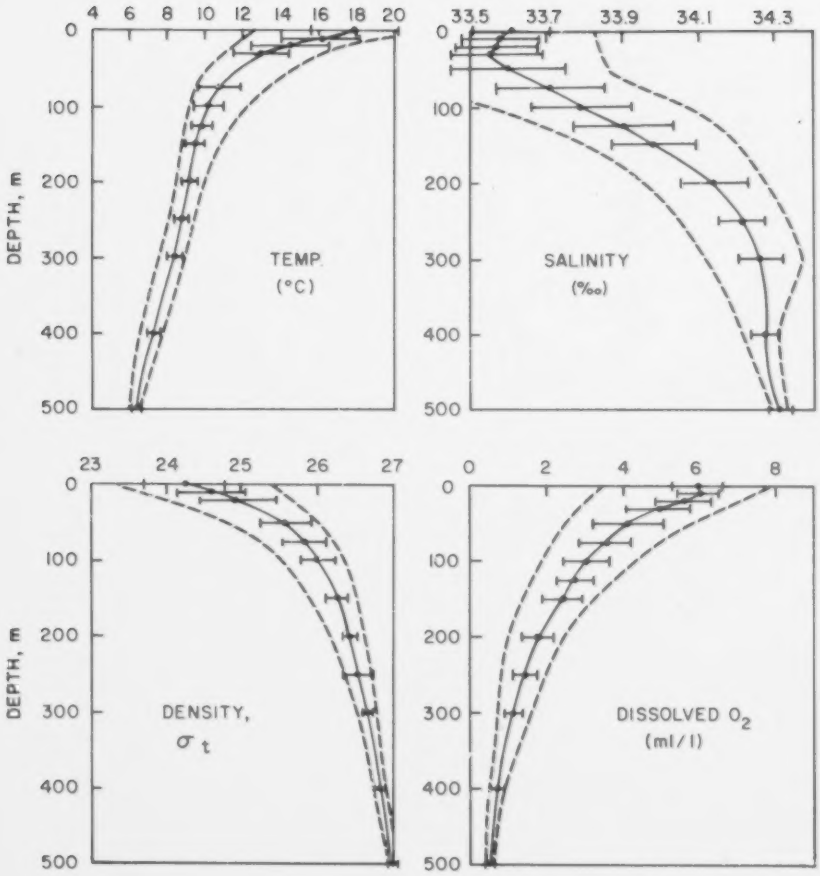
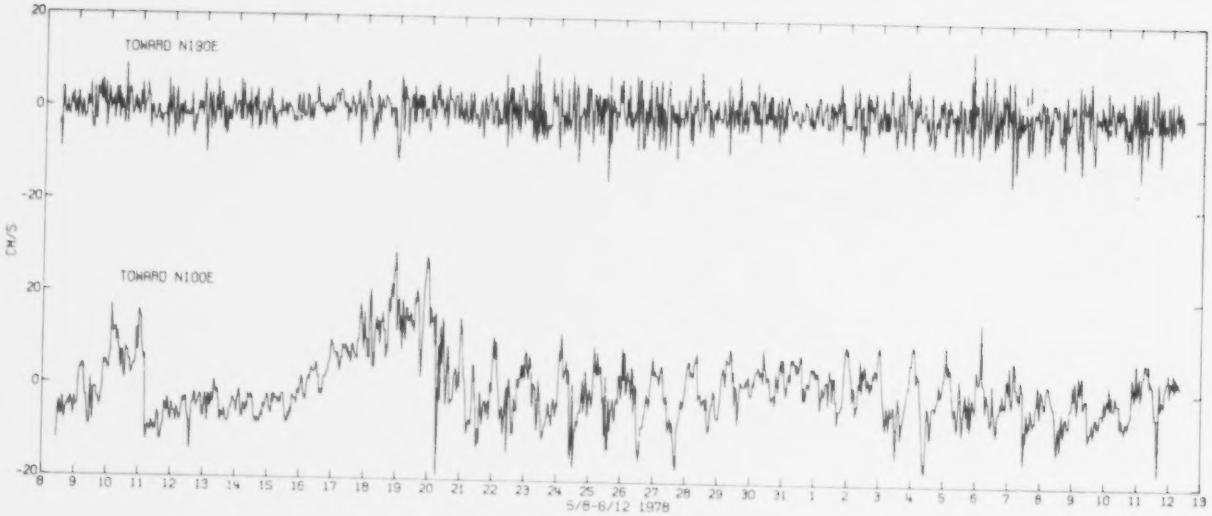


Figure 2.11 Vertical distributions of water properties at CalCOFI Station 90.28 (lat. 33° 29.1'N, long. 117° 46.1'W) near site of proposed deep water sludge outfall experiment. (From analysis by Hendricks of SCCWRP.) Note: Dashed lines indicate range of values observed in experimental programs; ⊢•⊣ indicates width of two standard deviations; and • indicates mean value.



Figures 2.12 Ocean currents measured on Santa Monica Basin slope in water of 470 meters depth. Meter depth 430 meters. (Jackson et al, 1979.)

generally increase with depth; concentrations of oxygen generally decrease. In the southern California region there is an oxygen minimum in the depth range of 400 to 800 m. Oxygen concentrations at the minimum are about 0.4 ml/l (0.6 mg/l), compared to typical surface concentrations of 6 ml/l (8.5 mg/l) (Figure 2.11). Some of the submarine basins in southern California such as the Santa Monica, San Pedro and Santa Barbara Basins draw their deep water from the oxygen minimum layer, have low exchange rates with outside waters, and have high natural oxygen demand. Consequently, their dissolved oxygen concentrations are at times nearly zero. Waters at the proposed Orange County sludge discharge site are less topographically constrained, leading to higher local exchange rates and oxygen concentrations (typically 0.5-1.0 ml/l (0.7-1.4 mg/l) at 400 m and 1.0-1.5 ml/l (1.4-2.1 mg/l) at 300 m). There is some evidence that trace metal concentrations in this region are higher than expected, a consequence of large anthropogenic inputs. The sediments around the proposed outfall site do not contain significant concentrations of sulfide.

The maximum depth for photosynthesis in the Southern California Bight is about 60 m. As a result, the presence of a sludge plume at 300 to 350 m will probably not affect plants or photosynthetic processes. However, some organisms at 300-400 m do depend on the surface layers for food. Some deepwater pelagic fishes and invertebrates feed directly near the surface, rising up during the night and returning to depths during the day. Others feed directly or indirectly on organic matter settling down through the water column.

Preliminary data collected by SCCWRP (Figure 2.13) show no simple depth-related trend for epibenthic organisms collected between 300 and 627 m depth. The benthic fauna in the area of the proposed outfall are not depauperate.

There are no major fisheries at the depth and location of the proposed outfall site. There is a small sable-fishery in the area, focussed primarily at Lasuen Knoll to the south.

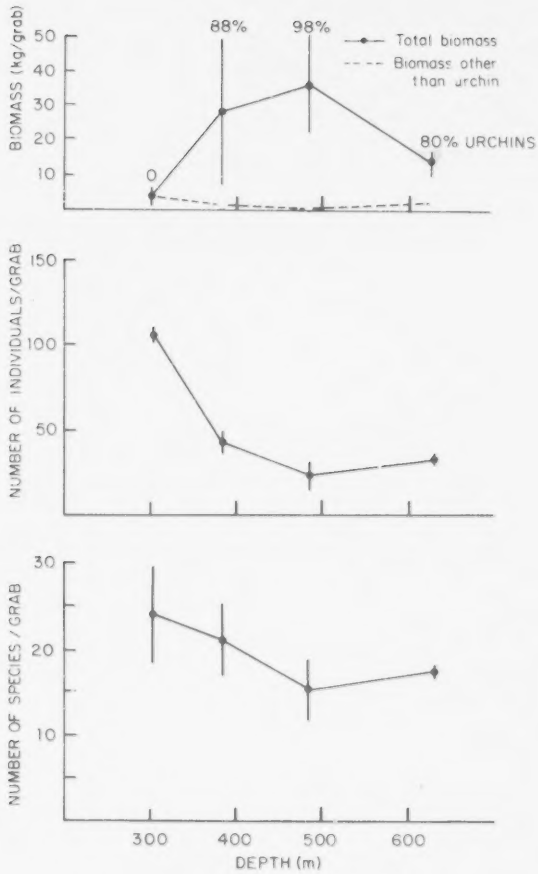


Figure 2.13(a) Depth-Related Trends in Benthic Invertebrate Community Parameters

Notes: (a) Percentages shown indicate the fraction of total biomass which was comprised of urchins.
(b) Figures are the result of Van Veen sediment grabs taken at depths shown along a transect which intersects the expected discharge point.
(c) Vertical bars represent one standard deviation on either side of the mean value (shown as a dot) for parameters indicated. Data were collected within the SCCWRP preliminary site survey.

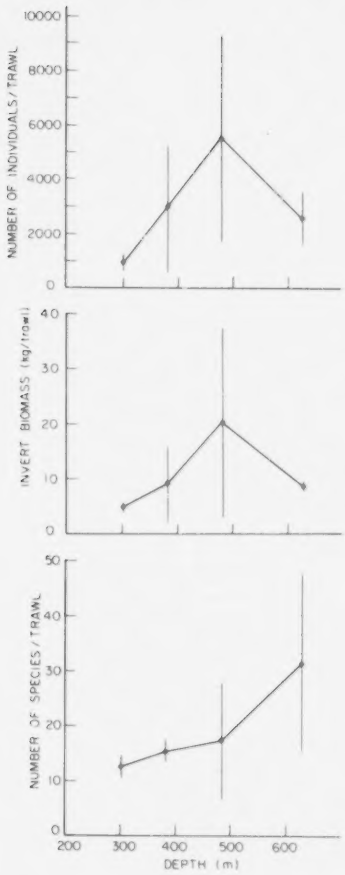


Figure 2.13(b) Depth-Related Trends in Benthic Invertebrate Community Parameters

Notes: (a) Figures are the result of trawl surveys conducted at depths shown along a transect which intersects the expected discharge point. (b) Vertical bars represent one standard deviation on either side of the mean value (shown as a dot) for parameters indicated. Data were collected within the SCCWRP preliminary site survey.

2.4 OCEAN PROCESSES DETERMINING TRANSPORT, FATE AND EFFECTS

2.4.1 The Process-Oriented Approach

In the preceding sections we have described characteristics of the sludge to be discharged and the ocean receiving waters. In this and the following section we describe what we think will happen to the sludge after it is discharged.

Environmental scientists analyze problems like this in terms of processes -- physical, chemical, and biological. Some processes, such as the turbulent mixing in the discharge jet, happen very rapidly and in a small space (in just a few minutes over a few tens of meters), and others, like bioaccumulation in the food web, may take years and affect many square kilometers. The rough classification of processes according to "near-field" vs. "far-field", and "short-term" vs. "long-term" emphasizes the range of length and time scales to be considered.

To understand the overall effects of sludge discharge in deep-water in any meaningful way, we must distinguish among the various processes at work. Safe, intelligent use of the ocean for waste disposal will ultimately depend upon mathematical characterization of important oceanographic processes in terms of their effects on waste dispersal and assimilation. The research plan is directed, in part, toward that goal.

As used here, the phrase "transport, fates, and effects" is a shorthand reference to such a process-oriented perspective on waste assimilation. Naturally, our discussion will focus on processes relevant to sludge discharge in the ocean. "Transport" includes those phenomena that move suspended or dissolved materials from one place to another; "fates" is the group of processes that convert water constituents from one form to another and/or cause them to be removed from the aquatic system of interest; and "effects" covers all the biological responses (including those involving human health) which are in some way related to the discharge.

Out of this focus on processes comes the method of analysis called "critical pathways." As the various processes are identified and understood, we can determine which are the most important ones linking a source with an effect -- i.e., the critical pathways. This approach has been used successfully in setting environmental standards for radioactivity, and is now being widely used for other persistent contaminants (e.g., control of PCBs in fish for human consumption).

2.4.2 Description of Potentially Important Oceanographic Processes

This subsection is a qualitative overview of the various processes which may materially affect marine sludge disposal at 300 to 400 m. Although the research plan presented in Chapter 4 consists of 40 separate tasks, it is important to remember that they are all designed either to directly measure environmental impacts in the CSDOC sludge disposal setting or to characterize physical, chemical, and biological processes which bear on these impacts. Figure 2.14 may help in visualizing both the mechanisms described and inter-relationships among the processes of interest; however, this figure is not intended to be all-inclusive, nor is it drawn to scale.

(1) Initial dilution is the immediate entrainment of ambient seawater into the turbulent, buoyant jet issuing from the end of the pipe. The process is normally considered complete when the initially buoyant jet either achieves neutral buoyancy and ceases to rise in the water column, as shown in Figure 2.15, or the plume reaches the surface. Plume submergence (trapping below the surface) depends upon ambient density stratification. For the deep-water sludge disposal experiment, the plume would always be trapped because an adequate degree of density stratification persists throughout the year. Both the magnitude of initial dilution and the maximum height of plume rise can be predicted with reasonable accuracy using discharge and receiving water characteristics as inputs to existing mathematical models (Fischer, et al., 1979). At the completion of the initial dilution process, the sludge-seawater mixture is a neutrally buoyant, drifting cloud, hereinafter referred to as a wastefield.

(2) Passive advection due to ocean currents is the primary means by which the wastefield is transported away from the discharge site following initial dilution. The strength and persistence of currents at the maximum height of plume rise will have profound effects on the ultimate fate of sludge and, in turn, on the viability of the proposed disposal scheme.

(3) Lateral spreading and additional wastefield dilution accompany the advection process. Spreading and diffusion of the sludge-seawater cloud is caused by: (a) gravitational effects (the cloud gets thinner as it pushes out horizontally at the level of neutral buoyancy); (b) shear dispersion (the current speed and direction vary with depth, tending to pull the sludge cloud apart); and (c) diffusion due to turbulent eddies. These three effects are not easily separated, but they all contribute to dilution and dispersal of the waste.

(4) Sedimentation of sludge particles occurs simultaneously with passive wastefield advection and lateral spreading. While sedimentation further reduces the wastefield concentration of particle-affiliated contaminants, the process leads to accumulation of those materials among marine sediments. The particles essentially

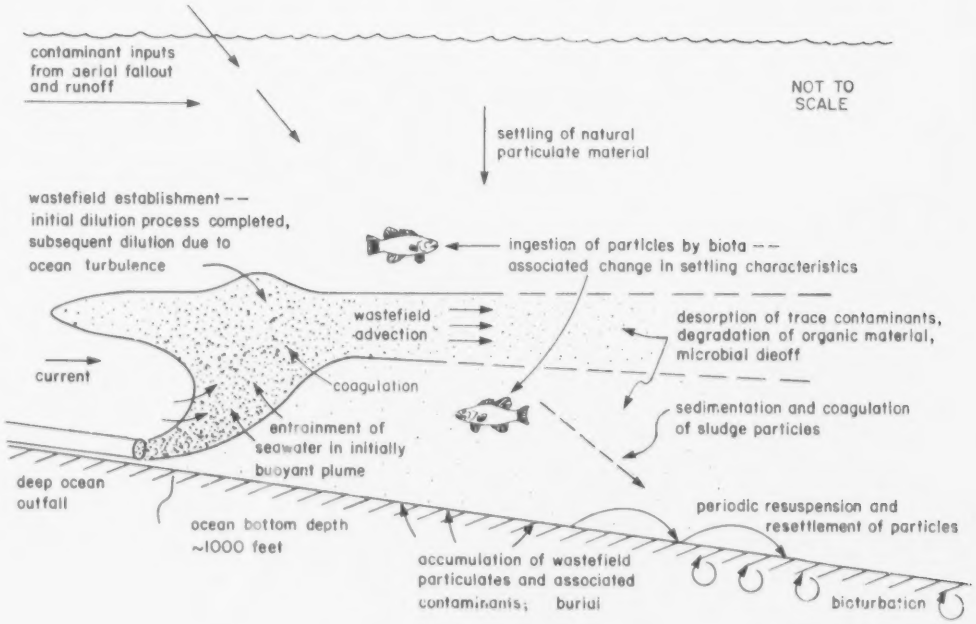


Figure 2.14 Factors affecting particulate fluxes and contaminant fates in marine waters.

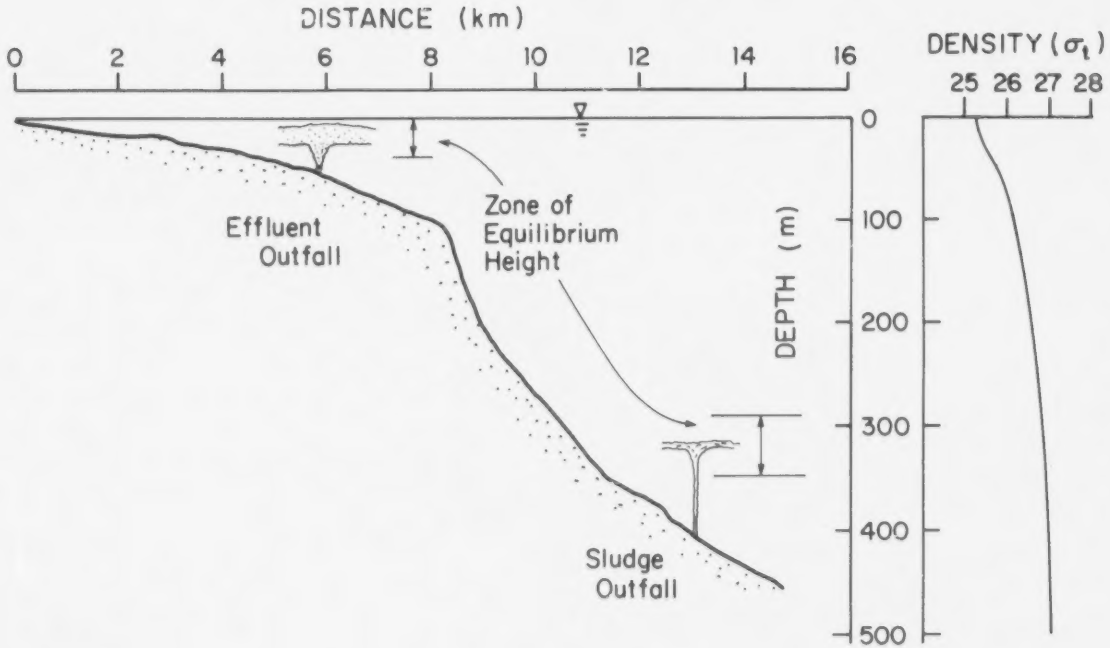


Figure 2.15 Implication of Proposed Discharge Depth on Wastefield Height of Rise and Intrusion of Waste Into Surface Waters -- Contrasting Geometries between Proposed Sludge Outfall and Existing Wastewater Discharges at 60 meters

"rain out" of the dilute wastefield as it drifts downcurrent. Under the conditions envisioned, fifty percent (by weight) of discharged sludge solids will have fall velocities of less than 10^{-3} cm/sec (<1 m/day). Therefore, it is likely that the process occurs over a long period, during which particles may be transported tens of kilometers. Although sludge particle sedimentation is expected over a large area, sediment accumulation rates will be low outside a small region near the outfall terminus (perhaps within one kilometer) where the small percentage of relatively large, fast-settling particles (>10^{-1} cm/sec or 100 m/day) will collect.

Any particles or oil droplets lighter than seawater will of course rise toward the surface. There is a small fraction of such material in sludge (as yet not determined), but efforts will be made in the treatment plants to eliminate floatable material to the maximum extent possible.

(5) Coagulation (or flocculation) of sludge particles (or sludge with natural marine particles) is a process whereby small particles coalesce into larger, faster settling solids. Coagulation is poorly understood in the ocean, but shear currents and small-scale turbulence enhance the process, whereas high dilution impedes it (because of lower particle concentration and less frequent collisions). The increased ionic strength resulting from the dilution of sludge with seawater probably favors coagulation and accelerates particle sedimentation.

(6) Microbial dieoff (or disappearance) occurs in marine waters due to the combined effects of sedimentation, wastefield dispersion, and bacterial or viral mortality (the sea is a hostile environment to many microorganisms). Because the proposed discharge site is about 12 km offshore and the plume will not immediately impact the surface, there is almost no credible avenue by which pathogens can reach shore, except by gradual upwelling and mixing over periods of days or weeks. During such a period, pathogen concentrations would be reduced to very low levels. Microorganisms attached to particles will be co-transported--gradually sinking for the most part; if there is buoyant material in the sludge discharge (e.g., oil and grease), associated pathogens may reach the ocean surface, and then be advected toward shore by wind-driven currents.

(7) Zooplankton feeding on sludge particles at depth may impact the plankton community or associated food chain in ways which are as yet unidentified. Zooplankton feeding may also accelerate the deposition of sludge constituents by "packaging" them in rapidly settling fecal pellets. The resultant sedimentation pattern for these constituents would be smaller in area, but peak fluxes of particulates and outfall-related contaminants would be higher.

(8) Bacterial degradation of particles and dissolved organics of sludge origin will consume dissolved oxygen in the water column. If currents carry sludge into the deeper basins, particles may have to

settle several hundred meters in order to reach the bottom. During this long settling period, a significant fraction of the particulate organic carbon discharged may be oxidized to carbon dioxide with attendant oxygen consumption (Jackson, 1982).

Oxygen consumption kinetics at the relatively cold temperatures (<10°C) typical of the proposed discharge depth are not yet characterized. Laboratory tests will yield data needed to develop water column dissolved oxygen predictions. The proposed discharge depth (300 to 400 meters) represents a compromise. Based on previous analyses (Jackson, 1982), this is the deepest water in which ambient dissolved oxygen levels assure satisfaction of discharge-related oxygen demand without risking unacceptably low water column oxygen concentrations.

(9) Mobilization of trace contaminants from sludge particles into the water column will probably result from dilution of sludge with seawater. The oxidation of some environmentally significant trace metals (present in anoxic sludge in their reduced forms) favors dissolution of insoluble metal-sulfide and metal-hydroxide compounds with release of metals into the water column. Desorption and mobilization of metals and refractory organics are also promoted by waste dilution and breakdown of particulate organics. Although this sounds ominous, the net environmental effect of contaminant mobilization may be positive. Expected fluxes of various trace contaminants in CSDOC sludge would be modest (see Table 2.2 (b)), and mobilized metals, etc., could be transferred from the Southern California Bight to the open ocean before unacceptable concentrations develop among local waters or sediments. That is, mobilization of trace contaminants into the water column reduces the rate at which these materials accumulate among local sediments.

(10) Sediment resuspension and bioturbation also play important roles as determinants of sediment character in the vicinity of the discharge. Bottom currents at the discharge site will periodically reach speeds capable of resuspending surface sediments. Such events will tend to destroy the chronology of sediment deposition (by winnowing away or redepositing lighter material on the top), oxygenate surface sediments, deplete bottom-water dissolved oxygen levels and gradually transport sludge materials away from the discharge point toward deeper sediments. Bioturbation by burrowing animals reduces the degree of vertical stratification among sediments and permits sediment oxygenation and other exchanges with the water column by increasing sediment porosity. Together, resuspension and bioturbation may greatly accelerate the release of contaminants from the sediments to overlying waters.

(11) The benthic community structure changes in response to sludge-enriched substrate, favoring a few species at the expense of less pollution-tolerant organisms. Echinoderms and crustaceans are expected to be negatively affected in the vicinity of the outfall terminus. Total biomass may be enhanced significantly

and species diversity reduced over a considerable area. Local patches of surface anoxia may develop in the most highly impacted areas if the transport of oxygen from the overlying water to the sediment surface is insufficient for the requirements of aerobic respiration. Under such circumstances, hydrogen sulfide (toxic to most marine species) may be generated.

(12) Sludge constituents may be a source of chronic toxic effects among populations of organisms which live or feed on the bottom near the discharge site. Signs of chronic toxicity which have been attributed to existing southern California marine outfalls in the past include the incidence of fin erosion and liver enlargement among fish. Acute toxic effects are not expected because of high dilution and wide dispersal of sludge solids.

(13) Although bioaccumulation of specific trace contaminants (e.g., DDT and PCBs) is anticipated among marine organisms exposed to sludge contaminants, the relatively low levels of critical contaminants in CSDOC sludge are not expected to result in unacceptable fish tissue concentrations (in excess of FDA limits, State standards, etc.). Neither will there be adverse ecological effects due to biomagnification in the marine food chain. DDT emissions from the Whites Point outfall system, which endangered local pelican populations a decade ago (prior to elimination of the industrial inputs to the sewer system), were about 6000 times greater than the anticipated mass emission rates from the proposed sludge outfall (Goldberg, 1979, and Table 2.2(b)).

The physical, chemical, and biological processes enumerated above are interconnected in terms of their relevance to marine disposal and waste assimilation issues. Some of them will prove to be unimportant as determinants of contaminant fates and effects in the context of this study. The research proposed in Chapters 3 and 4 will improve our understanding of important natural marine processes so that intelligent decisions can be made in other ocean waste disposal settings, as well as off Orange County.

2.5 ANTICIPATED EFFECTS OF PROPOSED SLUDGE DISCHARGE

With the qualitative discussion of fates and effects (Section 2.4) as background, we can provide a quantitative description of environmental conditions following initiation of the proposed sludge discharge. In this section, we will emphasize near-field mixing behavior, which at this point is more predictable than other aspects of pollutant transport, fates, and effects. Since we do not have the data necessary (currents and fall velocities) to make far-field predictions, our discussion of the far-field is limited to the results of order-of-magnitude calculations.

Figure 2.2 indicates a candidate alignment for the proposed deep-water sludge outfall. It terminates at a depth of 400 m, and will probably consist of a single open-ended pipe of interior diameter 18 or 24 inches. The flow rate of sludge will be 3 mgd (million gallons per day) containing a mixture of digested primary sludge (0.8 mgd); unthickened, undigested waste activated sludge (2.2 mgd); and a small amount of digested trickling filter humus (0.02 mgd). Treated wastewater may be mixed with the sludge to maintain flow velocity and prevent solids deposition in the outfall.

The bulk density of the mixture will be slightly greater than that of fresh water, perhaps 1.005 to 1.01 gm/cc. Nonetheless, it will rise in the midst of the denser seawater at the discharge depth as a buoyant plume. Due to ambient density stratification (see Figure 2.11), the plume will stop rising after reaching its neutral buoyancy level, as illustrated in Figure 2.15. Because of ambient density stratification, the dilute sludge cloud will always be trapped in deep water, never intruding into shelf waters (less than 100 meters deep and within 8 km of shore). The location of the CSDOC wastewater outfall terminus and its rising plume are also shown in Figure 2.15 for purpose of comparison; the wastewater plume remains submerged, again due to density stratification, except during occasional periods in winter.

Calculations using the measured density profile, projected sludge characteristics, and assumed range of predilution (mixing sludge with secondary effluent) indicate that under weak current conditions the plume will rise to a height on the order of 100 meters above the discharge point. The dilution at that point would be on the order of 500:1. When there is a current, the equilibrium height of rise would be smaller and the dilution larger. Over longer periods (it takes only a few minutes for the plume to rise to its equilibrium height), it seems evident that the diluted sludge will spread into the receiving water column over a range of depths due to varying currents. In the expected range of current speeds (see Figure 2.12), the height of plume rise will vary from about 40 meters (relatively strong current, no predilution) to 110 meters (no current, one-to-one predilution with secondary effluent). The dilution of the discharge jet with seawater is found to be relatively insensitive to the degree

of predilution.

Assuming a one-to-one predilution, the diluted sludge is expected to rise in the receiving water to between 50 and 110 meters above the discharge point or, equivalently, to depths of 350 to 290 m (for discharge at 400 m). Seawater dilution of the already prediluted sludge would vary between 450 and 750. If we take a value of 600 and assume that secondary effluent has negligible BOD while the sludge has a five-day BOD of 1700 mg/l, then the BOD in the layer due to the sludge discharge would be 1.4 mg/l (~1 ml/l). Total oxygen consumption given unlimited time might be 50 percent greater, or 2.1 mg/l (1.5 ml/l). As indicated in Figure 2.11, the dissolved oxygen content at those depths is of the same approximate magnitude, indicating that local impacts might be significant. Other sludge constituents will also be reduced by a factor of 2x600=1200; for example, suspended solids will be reduced from about 12,000 to 10 mg/l, a value which is probably several times background.

Following plume rise, further mixing occurs as the plume drifts with the current. We expect the motion to be largely horizontal, and parallel to local bottom contours. Turbulent diffusion at those depths is likely to be slower than near the surface. If we assume that the horizontal diffusion coefficient at depth is 10 percent of surface values, then, using results from Brooks (1960), turbulent mixing will provide additional dilution by a factor of two or three within 12 hours, and a corresponding further reduction of BOD to 0.5 to 0.7 mg/l.

Jackson, et al. (1979) estimated sludge degradation rates under these temperature conditions as 1 percent per day. If the ambient oxygen concentration is 0.5 ml/l, total BOD is 1.5 ml/l, and no mixing occurs subsequent to initial dilution, biological degradation would halve the oxygen concentration of the sludge-seawater mixture in 18 days. Particle removal by settling and mixing processes will decrease this impact on oxygen concentrations.

Based on these calculations, it seems possible that the naturally low ambient dissolved oxygen concentrations will be slightly depressed locally in the diluted sludge field near the discharge point. However, the sludge discharge system will be specifically designed to prevent significant oxygen depletion by various methods during the design phase as more predischarge oceanographic information becomes available. Among the methods of controlling DO depletion are: (1) the BOD mass emission rate can be reduced by digesting the waste-activated sludge component; (2) the outfall depth can be reduced to get the plume into water with more dissolved oxygen; and (3) larger predilutions of sludge with effluent can be employed.

The areal extent of discharge-related impacts among local benthos will depend on many factors, only some of which are now understood. At present, we can state that sludge particles will be widely dispersed in the environment. The bulk of this material may be

dispersed throughout the Southern California Bight since typical particle fall velocities are of the order of 1 meter per day, while characteristic rates of net horizontal advection at the plume height-of-rise are about 7 km per day. Hence benthic impacts are expected to be minor except in a relatively small region near the discharge point. However, we do not have enough information to make quantitative predictions regarding changes in sediments due to sludge particle deposition.

In summary, we can estimate reasonably the short-term fate of sludge near the discharge point. Our capacity for long-term estimation of fates and effects is much poorer and will benefit greatly from information generated within the accompanying research plan.

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CHAPTER 3

OVERVIEW OF THE RESEARCH PLAN

3.1 GOALS OF THE RESEARCH PROJECT

The motivation for discharging sludge at an ocean depth three-to-four times deeper than any previous project is to place this material in a location which is farther removed from biologically productive waters and more isolated from human interaction. The proposed location at 300 to 400 meters depth presents possible risks because biota there are less understood than those near the surface and because the low ambient oxygen concentration at that depth (~1 mg/l) could make the high BOD of the sludge (1700 mg/l, 5-day demand at 20°C) more disruptive there than near the surface.

The research project should be designed to clarify aspects of the behavior and effects of the deep sludge discharge and to provide information to make future decisions regarding sludge discharge to the ocean. The specific goals are:

1. To characterize the physical, chemical, and biological properties of the sludge.

2. To recommend:

- depth and location of the end of the sludge outfall;
- in-plant processing of sludge before discharge; and
- possible modifications in pretreatment (or source control) programs for trace contaminants.

3. To make pre-discharge predictions of sludge-induced environmental impacts. These would include changes in water-column oxygen concentrations and benthic sedimentation rates.

4. To observe changes in water column and benthic communities and measure the distribution of important chemicals in the water, in the sediment, and in organisms.

5. To find what human health risks (if any) are associated with deepwater sludge discharge, either directly through human contact with seawater or indirectly through consumption of seafood.

6. To determine the mechanisms by which ecological and chemical changes occur.

7. To assess the predictability of the effects of deep sludge

discharge by comparison of model predictions with monitoring data. Effects to be determined from the monitoring program include sedimentation patterns, alteration of biota, and changes in water and sediment chemistry. It is pertinent to ask how well the fate of discharged materials can be accounted for in mass-balance analyses.

8. To summarize and recommend methodology for designing systems for sludge discharge into the ocean and predicting the effects.

9. To summarize the effects of the Orange County sludge discharge, and evaluate their significance with respect to marine resources.

3.2 RESEARCH PLAN HIGHLIGHTS

3.2.1. Task Groups

With the overall goals described above in mind, we have developed a research plan of 41 tasks arranged in nine groups according to the general objectives. The detailed enumeration and descriptions of tasks are presented in Chapter 4. The research plan has been developed on the basis of the work to be done without regard to which organization would be performing which tasks (for further discussion of administration, see Chapter 5).

The major task groups, which are interrelated as shown in Figure 3.1, are briefly summarized below:

Task Group 1. Survey for Discharge-Related Effects (9 Tasks)

Comparison of important water quality and benthic parameters measured near the outfall and at control stations, both before and after discharge starts, is the basic method for detecting and documenting the effects of the discharge. With this monitoring data, predictive models can be calibrated and improved. Predischarge monitoring data also contribute to the design of the sludge discharge system. In terms of total effort and cost, this group will be by far the largest.

Task Group 2. Site Characteristics (3 Tasks)

In addition to the usual water quality monitoring data, a predischarge survey of bathymetry and currents is necessary for siting the outfall and the network of sampling stations and for interpreting and modelling the observed discharge-related effects (Task Group 1).

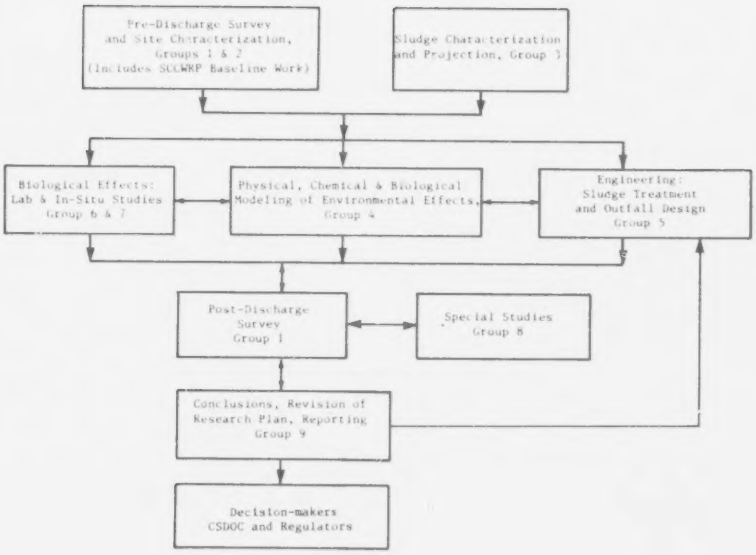

Figure 3.1 Relationships among Generalized Tasks Comprising the Overall Sludge Disposal Experiment.

Task Group 3. Sludge Characterization (4 Tasks)

To understand the transport, fates, and effects in the ocean we must know the quantity and quality of sludge being discharged; the settling (or flotation) behavior of the particles in seawater; the degradation of the particles during their slow descent; and release of trace contaminants within the water column. The properties of the sludge may change with time due to population and industrial growth, pretreatment or source control measures, and improvements in treatment processes.

Task Group 4. Modeling (5 Tasks)

The behavior of the waste stream in the ocean is predicted by a series of conceptual and computer models; each model focuses on particular processes and scales. For example, the initial dilution model covers only the first few minutes following discharge, during which the buoyant plume rises from the end of the outfall, producing initial dilutions of several hundred to one; on the other hand, particle deposition models attempt to describe a process that probably takes months. Such models form a basis for predicting effects, not only for this project but also for future projects.

Task Group 5. Preliminary Design (2 Tasks)

Before the demonstration experiment can proceed, decisions must be made regarding treatment of the sludge and the location and terminal depth of the outfall. These choices involve treatment and pipeline technology and costs, as well as water-quality effects predicted with the models and pre-discharge surveys. Preliminary modeling (Jackson, et al., 1979) favors discharge at approximately 300-400 m depth through an 18 to 24-inch diameter pipe.

Task Group 6. Biological Impacts -- Laboratory Studies (4 Tasks)

Because routine field surveys are not sufficient to understand biological processes, specific laboratory experiments are necessary to investigate biologically-mediated pollutant transformations and biological sensitivities to pollutants. Results of such experiments yield important parameters which are needed for developing good predictive models for sludge effects.

Task Group 7. Biological Impacts -- In-Situ Studies (5 Tasks)

The purpose of field experiments is similar to that for Task Group 6, but there are some experiments which simply cannot be done outside the natural system (e.g., benthic oxygen consumption). Because of the large depths involved, in-situ experiments are difficult and costly, and can be pursued in the latter part of the research program as required, funds permitting. In the next few years, there may also be significant advances in experimental techniques and equipment.

Task Group 8. Special Studies (4 Tasks)

This group includes special studies and unanticipated tasks which do not fit in other categories. Tracer studies and extrapolation from the Hyperion sludge outfall experience at 100 m depth are examples. Very near to the outfall discharge (within about 200 m) the similarity with the Hyperion discharge will be closest, and the Hyperion experience provides a valuable qualitative insight into the sedimentation of the larger particles and the resuspension and flushing process.

Task Group 9. Integration, Analysis, and Interpretation (5 Tasks)

The results of individual tasks and task groups do not stand alone, but must be woven into an overall picture to fulfill the goals of the project and summarize the results. This group of tasks includes cross-disciplinary interpretation of modelling data, comparison of model predictions with data, and revision of the research plan. Summaries and recommendations will be prepared annually to assist the regulatory agencies and Orange County Sanitation Districts in making decisions about continuation of the sludge discharge.

3.2.2. Strategy and Priorities.

The various tasks have to be done in a logical sequence, and will have different priorities at different times. After the project is approved by Congress and/or the cognizant regulatory agencies, we estimate a seven-year duration for this research program including 2 years of pre-discharge work, and 5 years after the start of discharge. Some work is now being done and will continue on an ad hoc basis pending project approval.

Estimates of cost by task group and year are given in Chapter 5 (Table 5.1). The total cost is estimated at approximately $1.5 to 2 million per year for seven years (in 1982 dollars). Not all of this expense is incremental because some activities (e.g., sludge

characterization) have to be done anyway. It is absolutely essential to emphasize that these costs are not based on actual proposals or task-by-task estimates, but represent only educated guesses to assist the funding agencies. Furthermore, as the project progresses there may be very substantial additions and/or deletions of research tasks or changes in priorities, depending on results obtained in earlier research.

CHAPTER 4

DESCRIPTION OF RESEARCH AND MONITORING PROGRAM

INTRODUCTION

The individual research tasks, presented in this chapter, are divided into nine broad categories or areas of effort as explained in Chapter 3. These are functionally related as indicated in Figure 3.1. Elements from several of these areas might be focused on specific environmental questions such as biological impacts attributable to oxygen depletion in the vicinity of the proposed discharge.

It is not possible to specify each task with the same degree of detail. Where monitoring or modeling techniques are well established, a relatively complete task description is provided. On the other hand, in a few cases we are able to specify only a research objective and suggest means for its pursuit. Research tasks which are in advance of existing experimental or analytical procedures are included only if they serve project goals and have a reasonable probability of being successfully carried out.

In arriving at these individual tasks, emphasis was placed on those areas in which discharge-related effects are more likely to be detected. During the course of the study, investigators should recommend changes in the program whenever: (1) measurements specified in the research plan offer no further utility for understanding environmental impacts or verifying model predictions; or (2) monitoring stations are found to be incorrectly located, or sampling frequency is improper.

All the individual tasks are listed in Table 4.1.

Table 4.1

List of Research Tasks

Task No.	Title	Page No.
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1.6	Age Dating and Chemical Analyses of Sediment Cores by Layers	58
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4.3	Estimation of Particulate and Trace Contaminant Fluxes to Local Sediments	74
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4.5	Biological Models	76

Table 4.1 (continued)

Task No.	Title	Page No.
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9.3	Effects of Organic Enrichment on the Dynamics of Midwater plankton Communities	91
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9.5	Annual Summaries of Project Results, Conclusions and Recommendations	92

Task Group 1 SURVEY FOR DISCHARGE-RELATED EFFECTS

The heart of the sludge disposal experiment lies in comparison of pre- and post-discharge oceanographic survey data as an indicator of environmental impacts. In addition, baseline (pre-discharge) monitoring data will be used to develop rational environmental models, without which generalization of observations would be very difficult, and post-discharge data will permit model verification.

Some of the baseline work listed herein is already underway, chiefly due to efforts of the Southern California Coastal Water Research Project (SCCWRP). A description of the SCCWRP predischarge sampling program is provided as Appendix A. To maintain program continuity, uniform sampling and analytical techniques will be employed whenever practicable throughout the monitoring programs specified in this section. Surface waters should be examined for sludge particles, oil and grease, and coliforms. Sampling stations will be selected to ensure that survey results generated during the course of the experiment satisfy program objectives at minimum cost. Post-discharge data will include measurements within suitable control areas.

The California Cooperative Oceanic Fisheries Investigation (CalCOFI) has an extensive record of hydrographic and biological properties in southern California waters. There are plans to change the CalCOFI sampling program, increasing the frequency and intensity of measurements and reducing the number of grid points. CalCOFI monitoring and this program should be coordinated with respect to sampling times, stations, and methods of analysis. Such cooperation may assist in estimation of any sludge-related, far-field effects within the water column.

Task 1.1 Measurement of Water Quality Characteristics

Purpose: To measure receiving water quality before and after the initiation of sludge discharge. For convenience, water quality measurements are considered either "routine" or "non-routine". The former category is comprised of general parameters influencing nutrient and dissolved oxygen status of the water column (e.g., nutrients, temperature, DO, etc.). The latter consists of trace contaminant concentrations potentially influencing ecosystem and human health (e.g., selected trace elements, chlorinated hydrocarbons, etc.). Pre-discharge measurement of these parameters in the study and control areas will permit evaluation of baseline conditions and

seasonal variations in DO status, nutrient-influenced productivity, and trace-contaminant concentrations. Post-discharge water-column measurements seek to identify discharge-related impacts on DO, nutrient enrichment, and trace contaminant availability. In addition, mathematical techniques for estimating wastefield dilution and dissolved oxygen concentration rely upon data related to several receiving water quality parameters. A special measurement program will acquire data needed to verify initial dilution and water column dissolved oxygen models. (See Task 9.2.)

Because water column oxygen depletion or eutrophication may accompany marine sludge disposal, receiving water oxygen concentrations will be monitored carefully throughout the study. Although some oxygen depression may not be harmful to marine life, water column monitoring will provide a prompt warning should waters in the vicinity of the discharge threaten to become anaerobic (which is considered unlikely).

Description: Routine water-column measurements will be made quarterly over at least a two-year pre-discharge period. To the extent possible, cruises should be coordinated with those of the CalCOFI program. During periods of outfall operation, water-column parameters are to be monitored seasonally. Pre- and post-discharge measurements will provide bottom-to-surface profiles of salinity, temperature, DO, and indicators of water clarity (e.g., turbidity). Parameters to be measured in near-bottom waters, 50 meters and 100 meters above the bottom, and above and below the thermocline include dissolved organic nitrogen, particulate organic nitrogen, dissolved organic carbon, particulate organic carbon, nitrate, nitrite, total ammonia, total phosphorus, soluble reactive phosphorus, soluble reactive silica, total and fecal coliforms, and pH. Surface waters should be examined for sludge particles, oil and grease, and coliforms. Sampling stations will be selected to cover the full extent of sludge-related water quality impacts anticipated on the basis of water quality modeling results. Appropriate control stations will also be selected, although station positions cannot be recommended at this time.

Based on water quality monitoring experience in other marine disposal settings, the station grid will extend perhaps 25 km in the westerly (downcurrent) direction and 15 km eastward from the discharge point. It is anticipated that post-discharge water column stations will outnumber those in the pre-discharge monitoring grid.

Water quality data should be analyzed for evidence of intrusion of sludge constituents into local surface waters. Aerial surveys for chlorophyll among surface waters should be considered in this regard.

Non-routine measurements of selected trace metals and trace organics should be made two (2) times per year (∿March and September)

over a reduced sampling grid consisting of perhaps six stations. Samples should be taken from the depths described above.

Prevention of sampling error and post-sampling contamination will be critical in this program. Analytical techniques must be state-of-the-art to provide needed sensitivity, accuracy, and precision. An appropriate quality assurance plan will be adopted.

Samples will be taken at two sites (study area and control) in each season at prescribed water-column depths to determine the distribution of trace metals and organics between particulate and dissolved phases. These measurements will permit determination of biotic exposures, loss terms, and transport characteristics. Trace metals and organics to be considered will include at least those listed in Table 4.2. Additional measurements may be required on the basis of sludge analyses for priority pollutants and pesticides. As in other areas of the research program, elements of the water column monitoring effort may be dropped if it is evident that they are not necessary to protect marine biota or assess compliance with applicable water quality criteria.

TABLE 4.2

Trace Constituents

Group I: Trace Elements		Group II: Trace Organics
Arsenic	(As)	PCBs
Cadmium	(Cd)	t-DDT (and derivatives)
Chromium	(Cr)	BHC
Copper	(Cu)	
Iron	(Fe)	Toxaphene
Lead	(Pb)	Hexachlorobenzene
Manganese	(Mn)	Chlorinated benzenes
Mercury	(Hg)	
Nickel	(Ni)	
Silver	(Ag)	
Tin	(Sn)	
Zinc	(Zn)	

Trace contaminants listed will form the basis of routine chemical measurements in CSDOC sludge, receiving waters, and sediments. They are included by reference at numerous points in the accompanying text. Additional analyses may be required based on measurements of priority pollutant concentrations in CSDOC sludges.

Task 1.2 Water Column Biological Monitoring

Purpose: To establish levels of discharge-related impact among local communities of zooplankton and pelagic fish.

Description: Routine midwater biological monitoring will consist of zooplankton capture and hook-and-line fishing programs. Plankton will be taken at two depths -- near-bottom and 50 meters above the bottom -- at each of four stations. Zooplankton biomass will be measured routinely, individuals counted, and samples archived. In a few samples only, animals will be classified to the species level. The catch should always be examined for gross unexpected features or signs of environmental impact. Individuals will be preserved for possible subsequent trace contaminant analyses. All fish taken will be identified, counted, and measured, and stomach contents will be sampled and preserved for subsequent analyses. Pre-discharge zooplankton and hook-and-line surveys will be conducted. Post-discharge monitoring of zooplankton will be semi-annual, and the fishing program will be carried out annually.

The CalCOFI program has produced a 30-year record of zooplankton biomass at midwater depths. Spatial coherence among these data indicates that, in the absence of local perturbations, measurements of zooplankton biomass throughout California Current waters exhibit a uniform pattern of variation. That is, vast areas apparently respond to the same environmental stimuli in the absence of overwhelming local influences. The CalCOFI record may be used to advantage to illustrate the magnitude of natural variation among southern California zooplankton populations. Furthermore, CalCOFI data collected concurrent with water column biological monitoring for sludge-related effects may provide useful control information.

Task 1.3 Inventory of Local Sport and Commercial Fishing Activities

Purpose: To compare pre- and post-discharge fishing success as a measure of environmental impact. Sport and commercial fishing are obvious beneficial uses of shelf waters and must be protected. Comparison of pre- and post-discharge commercial and sport fishing success will provide a reasonable estimate of fishery impacts.

Description: Records of the California Department of Fish and Game will be examined biennially throughout the experiment for significant changes in sport fishing and commercial catches taken near the proposed sludge outfall. Observed variation will be normalized via comparison with catch figures in one or more control areas to separate

effects unrelated to sludge discharge.

Task 1.4 Trawl Monitoring Program

Purpose: To establish levels of discharge-related impacts among trawl-caught fish and invertebrates.

Description: The pre-discharge trawl program is to be a one-time effort conducted at two depths (bottom and 50 meters above the bottom -- see Appendix A, Figure A-3 for station locations). After start of discharge, trawl stations will be selected based on the probable extent of sludge-related impacts, direction of bottom contours or prevailing currents, and the positions of pre-discharge trawl stations. In light of associated expense and environmental damage, trawls should be conducted infrequently, perhaps annually, at two depths during each year of post-discharge study. Trawl-caught animals will be identified, counted, measured and weighed. Results will be analyzed to identify, if possible, any outfall-induced changes in fish and invertebrate assemblages. Gut contents of one or two indicator species will be analyzed. Trawl-caught fish will be examined for external signs of diseases such as fin rot, tumors, discoloration, etc. One or more control sites will be sampled at the same time as the discharge area to test hypotheses relative to the source of observed changes.

Levels of trace metals and chlorinated hydrocarbons (Table 4.2) will be analyzed in liver and muscle tissue of three trawl-caught species. If tissue levels prove to be uniformly low, routine monitoring for body burdens of trace contaminants will be discontinued. Liver tissue from the same species will be sectioned and examined for indications of disorder at the cellular level. Investigators will devise a set of qualitative standards based upon experience in other monitoring efforts or early results in this program for use in this regard. An effort should be made to correlate histopathological observations with tissue levels of specific trace contaminants. Tissue preparations will be photographed and photos archived as slides to permit convenient reference and comparison among sequential observations.

To the extent practicable, common trawling equipment, procedures, and analytical measures will be used throughout the program.

Task 1.5 Benthic Surveys

Purpose: To establish the intensity and extent of changes in the local benthic environment attributable to marine sludge disposal practice. Activities described under this task heading are arbitrarily limited to analyses of sediment surface samples and cores measuring physical, chemical, and biological conditions in marine sediments surrounding the outfall site. Post-discharge bottom trawls and near-bottom chemical measurements are described elsewhere (Task 1.4 and 1.1, respectively).

Description: There should be an intensive survey area around the discharge site plus an extensive line of stations along the 350 m isobath, up and down the coastline for perhaps ± 30 km or more. The stations used by SCCWRP in the initial baseline survey are shown in Appendix A, Figure A-2; to this near-outfall array, it will be necessary to add a line of far-field stations up- and down-coast.

Sediment samples will be obtained using equipment which satisfactorily preserves the order of material taken without losing the lighter sediment at the top of the sample. Physical and chemical measurements will include grain size analyses (at selected stations) and more extensive measurement of volatile solids, total organic carbon, total organic nitrogen, selected hydrocarbons, and selected trace metals per Table 4.2 (indicators of sediment organic enrichment or the presence of sludge-related contaminants). A few (e.g., three) deep cores will be extracted and stored for subsequent age-dating and analysis. The existing community of benthic macroinvertebrates will be characterized via a set of bottom sediment samples. The same set of samples will serve as the basis for chemical measurements. Parameters representative of community structure (e.g., biomass, number of species) will be generated for comparison with subsequent monitoring results.

Pre-discharge sediment redox conditions will be characterized via a one-time sampling program consisting of surface sediment (top 5 cm only) samples and analyses for indictors of sediment DO status. Prior to the introduction of sludge into the area, there is little reason to expect a significant degree of seasonal variation in these parameters, and a baseline program designed to expose natural variation of longer time scale is not feasible. Samples for redox measurements are to be taken from about 12 stations comprising a subset of baseline sediment sampling points. Stations will be sufficiently widespread to provide a broad sampling of locations and natural environmental conditions.

Throughout the discharge period, representative sets of sediment samples (at least the top 5 centimeters) will be taken from potentially impacted sediments at six-month intervals. In addition, a

one-or-two-time sampling program may be required to augment routine measurements immediately following discharge initiation, during the period when related changes in sediment quality are expected to change most rapidly. The sampling grid will overlay, to the extent practicable, the pre-discharge grid (Appendix A, Figure A-2) although the number and location of stations will be selected to reflect the full intensity and extent of predicted outfall-related effects. Sediment quality models will be consulted in the selection of stations. Because of the suspected influence of bottom topography on currents, it is anticipated that sampling points will follow bottom contours up- and downcoast from the discharge transect. A trade-off is necessary between extensive spatial mapping with few replicates versus limited spatial coverage with greater sample replication. As in the pre-discharge survey, care will be taken to preserve sediment order and avoid loss of material at the top of the core in all sediment samples. Physical and chemical tests will include, as a minimum, analyses of grain size and measurements of the sediment surface layer volatile solids, total organic carbon, total organic nitrogen, selected hydrocarbons and trace metals. Both sediment particulate material and pore water will be analyzed for trace organics and metals in order to answer remobilization questions. In addition, indicators of DO status measured in the pre-discharge program will again be monitored to characterize post-discharge redox conditions.

Benthic infauna taken in the samples will be identified, counted, and weighed. Results will be analyzed using such parametric indicators as biomass, species diversity, number of species, and other appropriate measures.

Gonadal tissue from prominent urchins taken from both impacted and control areas will be sectioned and examined microscopically for evidence of abnormality at the cellular level. Investigators will devise a qualitative scale with which to evaluate the histopathological well-being of organisms studied in this fashion. In this area, initial monitoring results will be used to devise an appropriate strategy (in terms of geographic extent, frequency, and repetition) for subsequent measurements. Efforts should be undertaken to correlate these results with measured physical and chemical sediment characteristics. Tissue preparations will be photographed and photos archived as slides to permit convenient reference and comparison among sequential observations.

Task 1.6 Age Dating and Chemical Analyses of Sediment Cores by Layers

Purpose: To compare pre- and post-discharge sediment cores as an indication of sludge particle deposition rate and fate. Bioturbation depth may also be determined from profiles of isotope concentrations.

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A number of natural processes play potentially important roles in determining the local rate of sediment deposition and degree of stratification within a given sediment core. In addition to the numerous factors affecting sedimentation rates, bottom currents periodically achieve strengths necessary for sediment resuspension. Such events may cause a winnowing of fine or organic particles from the accumulating sediment and upset the chronology of deposits by restratifying particles in a way which favors redeposition of relatively light or fine material at the surface.

Description: Comparison of pre- and post-discharge core characteristics will permit estimation of net solids accumulation rates as a function of position relative to the discharge point. The pre-discharge cores may reveal geological markers beyond the reach of surface sediment disturbances which will prove useful as reference points. In this regard, full advantage will be taken of existing cores and results of previous sediment measurements. A sequence of analyses will shed light on the relative importance of natural processes, such as sediment resuspension, biological mixing, and contaminant mobilization in pore water, as determinants of sediment quality. Sediment quality models can be calibrated on the basis of core data and routine benthic surveys (Task 1.5). Comparison of core data with the CSDOC sludge quality records will provide the basis for mass balances and first-order estimates related to the fates of specific contaminants in the marine environment (see Table 4.2).

Appropriate age-dating techniques (e.g., Pb-210, Cs-137, C-14 concentrations) should be used to date layers in both pre- and post-discharge cores. The post-discharge coring grid will cover the full geographic extent of sludge-related impacts. Changes in sediment quality characteristics will be most apparent in the direction of the prevailing sub-thermocline current at the discharge depth. However, the foci of chemical and biological changes may gradually shift offshore due to sediment resuspension and redeposition.

Box-coring devices will be used to collect sediments for chemical analyses. During the first two years after discharge initiation, cores will be taken annually. Thereafter, a full set of samples need only be taken every three years. The overall program should include a one- or two-time core extraction following significant storms to assess the importance of isolated events as determinants of overall sediment quality characteristics. Selected cores are to be age dated, and all will be analyzed by layers for trace metals and selected hydrocarbons known to be present within the CSDOC sludge (Table 4.2). The output of the sediment analyses should include estimation of sedimentation rate, depth of mixed zone, and profiles of trace contaminant concentrations.

Layer thickness may be varied within the sediment column but should be selected to minimize the number of separate analyses without sacrificing resolution of variation in important parameters. Naturally, intervals should be smallest where the rate of change in contaminant concentration is greatest. It is also anticipated that at some point in the program, analysis of material from below the mixed zone can be discontinued since this material may be considered permanently buried (barring some catastrophic event) and subsequent analyses would provide only duplication of previous findings.

Task 1.7 Measurement of Sedimentation Rate via Sediment Trap Deployment

Purpose: To compare the sludge-related fluxes of organic and inorganic material with background sedimentation rates. Near-bottom sediment traps will provide the means for estimating gross solids accumulation rates. Similarly, trapped material provides a reasonable estimate of the upper limit of deposition rates for oxygen-demanding materials and/or potentially deleterious trace contaminants. Differences between pre- and post-discharge sediment trap data will provide the basis for estimating outfall-related sediment enrichment of these contaminants.

Sediment traps may also support development of dissolved oxygen models for receiving waters and local sediments. Traps deployed within the water column can be used to estimate natural or discharge-related fluxes of oxygen-demanding material as a function of depth.

Description: As part of the pre-discharge monitoring program, midwater sediment traps will be deployed via attachment to current meter moorings. Traps will be placed at 100-meter vertical intervals from 100 meters below the surface to the bottom. The upper traps will measure "natural" particle fluxes while the lower traps will help in determining particle resuspension rates. At each mooring, a trap will be placed in the near-bottom waters to provide an estimate of gross sedimentation rate as a function of position relative to the proposed discharge site. Although there is little reason to expect strong lateral gradients in the pre-discharge distribution of particulate flux, the post-discharge sedimentation pattern should clearly reflect the position of the outfall and local current characteristics. For this reason, the sediment trap program should be enlarged during the post-discharge monitoring period. Because current meters will be removed after local currents have been adequately characterized, deployment of post-discharge traps will require additional moorings. Sampling stations will be oriented about the discharge point to highlight effluent-related variation in sedimentation rate in directions parallel and perpendicular to local bottom contours. Trap contents collected at selected moorings will be analyzed for trace

contaminants known to be present in the CSDOC sludge (see Table 4.2).

The continuation of this task will be contingent upon a demonstration that the experimental technique is working properly for this application.

Task 1.8 Bioaccumulation of Trace Contaminants

Purpose: To measure the bioconcentration of trace contaminants (Table 4.2) in the marine food web during pre- and post-discharge periods. Although persistent chemicals represent one of the areas in which a marine sludge disposal is potentially linked to human health, mechanisms for trace contaminant accumulation in marine biota are not well understood. Bioconcentration studies to be carried out in this research are empirical in nature. They are based on measurement of pre-discharge biotic burdens and water/biota partitioning of trace contaminants, prediction of post-discharge burdens based on bioconcentration partitioning theory, and post-discharge biotic measurements to evaluate predictions and assess discharge effects. Predictions based on various discharge scenarios and post-discharge measurements should provide a clear warning if contaminant problems are to occur. The approach taken should provide a framework with which to anticipate food web impacts in other marine disposal settings.

Description: Selected species of dominant phytoplankton (surface waters only), zooplankton, benthic macroinvertebrates and commercial fish will be analyzed for specific trace contaminants present in CSDOC sludge and potentially accumulated in the food web. Historical studies should be considered in designing this program, as well as the several related measurements carried out in the SCCWRP baseline survey (Appendix A). Pre-discharge monitoring will consist of annual measurements to determine biotic burden, and will be tied to water-column analyses for selected trace contaminants (Table 4.2). In this way, bioconcentration factors and ecological magnification can be assessed. Post-discharge sampling will be conducted annually at sites in the study and control areas not yet determined. Based on a review of bioconcentration and magnification literature (including relationships between bioconcentration factor and other measures of trace organic accumulation - i.e., octanol water partition coefficient), contaminant partitioning coefficients and biotic burdens resulting from sludge discharge will be estimated. Post-discharge measurements will be used to verify projections and complete model development.

A review of the literature on bioaccumulation and existing data for the Southern California Bight, coupled with the relatively low fluxes of trace contaminants in this discharge (see Tables 2.2 and 2.3), may indicate that this task should be reduced in scope.

Task 1.9 Designation of Control Sites for Water Column and Sediment Monitoring

Purpose: To select, if possible, one or more control sites for measurement of natural fluctuations in water and sediment quality during the post-discharge period. Identification of a control site is critically important if variation in environmental conditions due to sludge disposal is to be separated from other potential sources of variation in the marine environment. Control sites should be minimally impacted by the sludge discharge and by any other source of pollutants which does not affect the study site in a similar fashion. Furthermore, the physical characteristics of the control site should be essentially identical to the pre-discharge features of the study site. That is, the control location should have similar depth and bottom characteristics (e.g., sandy, silty, etc.), dissolved oxygen profile and other water mass characteristics, prevailing current, and so forth.

Description: The pre-discharge monitoring program will include an abbreviated benthic and water column sampling effort designed to expose the general characteristics of potential control locations. Control areas will be sought primarily in the downcoast (southerly) direction. Areas sampled should be unaffected by other major sources of pollutants such as oil seeps, river or harbor discharges, or marine discharges. The abbreviated sampling program should include such parameters as sediment organic content and biomass and water column profiles of temperature, salinity, density, and dissolved oxygen concentration. Water column monitoring at the control site should be conducted at approximately the same time as the measurement of water-column characteristics at the study site.

Since selection of a true control site may prove difficult, several potential sites should be examined. In this regard, pre-discharge sediment monitoring at the far-field stations described in Task 1.5 may provide helpful data. Furthermore, a control area for water column measurements may be inappropriate as a control for benthic monitoring. Designation of control sites cannot precede at least the initial results of the post-discharge monitoring programs.

Task Group 2 SITE CHARACTERISTICS

Major portions of the pre-discharge survey described in Task Group 1 are devoted to characterization of the proposed sludge discharge site. To avoid duplication, these monitoring efforts are included here only by reference (Tasks 1.1 through 1.8). The only new work described in this section consists of the investigation of ocean currents and bottom conformation in the outfall region. If an adequate record is obtained during the pre-discharge period, additional detailed current measurements may be unnecessary because sludge discharge effects on the current structure will be negligible.

Task 2.1 Measurement of Local Currents

Purpose: To characterize the movement of water masses in the vicinity of the proposed outfall. A comprehensive current monitoring program is recommended to characterize currents in terms of intensity, persistence, and temporal and spatial variation. This information is necessary for modeling the transport and fate of discharged sludge, and interpreting post-discharge monitoring results.

Description: Stations and meter depths described subsequently may be modified by those drafting the final current monitoring program provided such changes are designed to satisfy monitoring objectives at minimum cost. An uninterrupted (so far as practicable) series of current measurements will be obtained at 3, 4, or 5 depths at each of at least four different moorings. See Figure 4.1 for approximate mooring locations. Three moorings should be deployed at the 100-meter, 350-meter, and 500-meter isobaths on a transect which intersects the proposed discharge site. A fourth string of four current meters should be placed approximately 15 km west of the proposed outfall terminus on the 350-meter isobath. Depth permitting, meters should be placed two meters above the bottom, 350-meter depth (500-meter isobath only), 200 meters, 100 meters, and near-surface (about 10 meters below the surface). The shallow (100-meter) mooring will carry only three meters -- surface, mid-depth, and bottom. Proven equipment which is generally accepted within the oceanographic community is to be utilized.

Thermistor chains should be placed on the 350-meter and 500-meter moorings in the main transect, covering the top 200 meters with thermistors at 10 to 15-meter intervals. Sediment traps should also be provided at several depths along each of the moorings (see Task 1.7 for details).

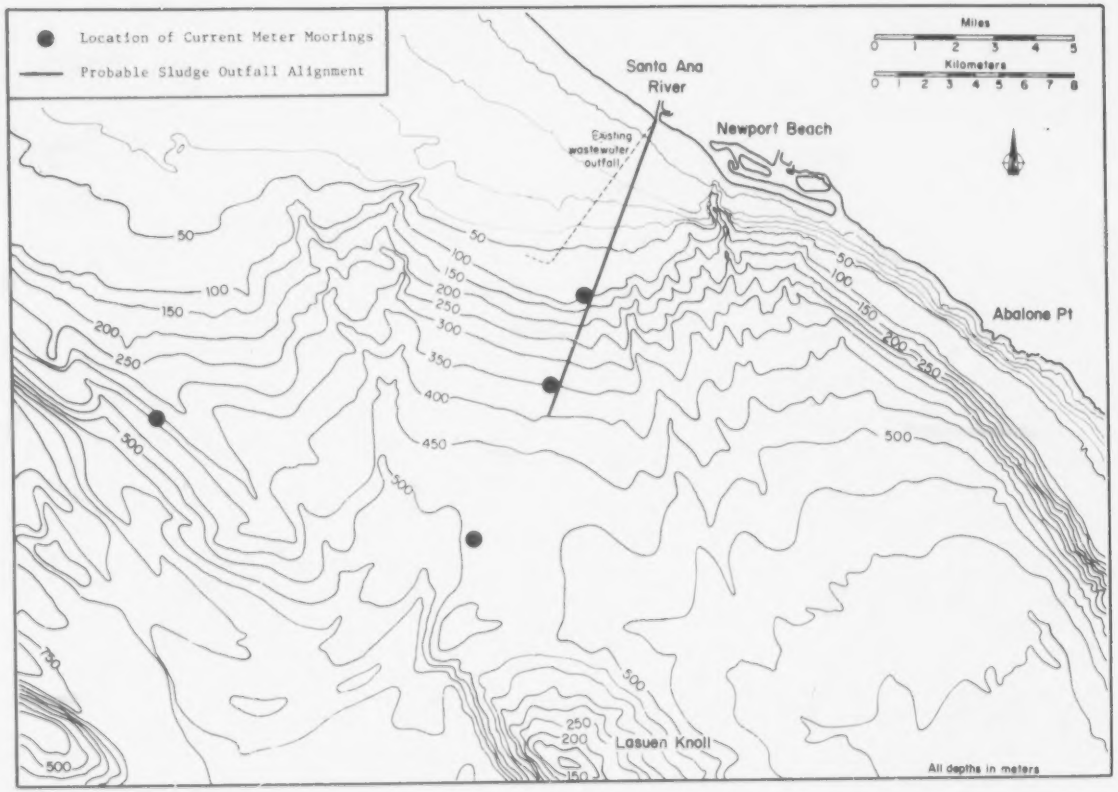

Figure 4.1 Proposed Current Meter Mooring Locations.

Half-hourly (vector) averaged data are to be collected and analyzed statistically for inferred daily excursions, displacements during periods of unidirectional flow, joint distributions of current speeds and directions, vertical isotherm movement, and such other characteristics as may clarify the circulation, advection, and density structure of the water column.

A much less extensive current meter sampling program (e.g., one or two current meters at the discharge site) should be continued throughout the discharge period to characterize long-term variations.

Task 2.2 Hydrographic Surveys for Determination of Geostrophic Currents

Purpose: To calculate the geostrophic currents in a broad region surrounding the discharge site by measurement of water column density transects. Such information will complement the current meter records and assist in estimating the direction and extent of discharge-related, far-field effects within the water column and on the bottom.

Description: The distribution of salinity, temperature, density, and such other properties as may be of interest should be measured along at least three transects perpendicular to the depth contours. Cruises are envisioned to sample water properties from the ocean surface to the bottom. At least three transects are to be located at such positions as

(1) along the proposed outfall alignment out to approximately 40 km offshore,

(2) about 30 km north i.e., approximately off Point Fermin out to the shelf on Santa Catalina Island, and

(3) about 30 km south of the outfall, i.e., approximately off Dana Point.

Each of the transects should be surveyed at least two times per year (March and September). This should be done at least once, and preferably in two successive years to indicate year-to-year variations.

An adequate number of observations should be made to resolve the horizontal and vertical structure of property distributions. The data should be presented in contoured cross-sections. Geostrophic velocities perpendicular to the transects should be calculated relative to the bottom.

In addition, measurements should also be made at several stations located at each of the basin sill areas to facilitate data interpretation.

Task 2.3 Site Bathymetry

Purpose: To establish bathymetric characteristics in the vicinity of the proposed outfall. Accurate bathymetric information is essential to the design of any submarine works. Available bottom soundings may be inaccurate and should be updated using modern survey equipment.

Description: A bathymetric survey will be carried out covering the area surrounding the proposed outfall location. The survey should encompass all the sampling sites in the monitoring effort and extend at least 20 km up- and downcoast from the discharge point and to the middle of the basin in the offshore direction. Equipment chosen will be capable of accurate determination of both depth and horizontal positioning. The survey lines may be set quite far apart initially (e.g., 0.5 km). If results check with existing charts, additional measurements will be unnecessary until design is initiated. If discrepancies are found, however, then additional lines should be surveyed to obtain the correct bathymetry.

Task Group 3 SLUDGE CHARACTERIZATION

Experiments described in this task are designed to characterize sludges from the CSDOC treatment plants in terms of selected, environmentally significant parameters; determine how sewage treatment and industrial waste pretreatment (source control) alternatives might impact those sludge characteristics; and finally, to investigate the behavior of sludge particles and associated trace contaminants when placed into marine waters. Of special interest are the settling properties of sludge particles and the fractionation of trace contaminants such as metals and pesticides between the dissolved and particulate phases. Each subtask is designed to promote a rational understanding of transport and transformation processes (see discussion, Chapter 2) which actively determine the fates of pollutants discharged to the marine environment or to provide input data for predictive water and sediment quality models described in Task Group 4. Sludge characteristics are requisite to development and application of such predictive models and to rational analysis of events observed following initiation of sludge discharge.

Task 3.1 Measurement and Projection of Sludge Quality Parameters

Purpose: To characterize CSDOC sludge mass flow and chemistry throughout the life of the experiment. Determination of discharge characteristics is the first step in estimating water quality impacts associated with marine sludge disposal. Historic sludge quality analyses carried out by CSDOC will be considered in specifying additional study. Detailed information, including estimates of central tendency and variation, should be developed for each contaminant of potential environmental or health-related import. Factors affecting sludge quantity and quality projections at Orange County include (a) industrial waste pretreatment regulations on industries tributary to the CSDOC wastewater treatment system; (b) planned growth in the Orange County service area including projected industrial growth; (c) wastewater treatment processes; and (d) sludge treatment processes (e.g., digestion, screening). Studies to evaluate (c) and (d) are proposed in Task 3.2.

Description: The results of previous CSDOC sludge quality analyses will first be collected, evaluated, and parameterized. The ongoing, routine analytical program will be scrutinized and augmented as necessary to provide a minimum data base. Whenever possible analyses are to be conducted on sludge samples receiving treatment comparable to that anticipated for sludges destined for marine disposal.

(i) Sludge volume will be measured daily for at least 12 consecutive months. Because sludge production is dependent upon the level of wastewater treatment provided, sludge volume and other measurements described subsequently are strictly valid only under operational conditions similar to those anticipated during the conduct of the sludge disposal experiment. However, when projected operational conditions cannot be created as part of the sludge characterization program, extrapolation from existing quality data will be necessary.

(ii) Sludge concentrations of total and volatile solids, important trace metals, common pesticides and synthetic organics, major anions, chemical oxygen demand, five-day biochemical oxygen demand (BOD), organic nitrogen, ammonia, and pH will be measured in 24-hour composites taken several times per week during the first three to six months of sampling. Thereafter, single 24-hour composites will be taken monthly. Measurements will be made on both particulate and dissolved fractions.

(iii) Initially, monthly grab samples of treated sludge will be analyzed for total and particulate organic carbon and for fatty acids and carbohydrates in dissolved and particulate fractions. The program will be discontinued when observed variation in these parameters is considered well characterized.

(iv) On at least three occasions prior to the initiation of sludge discharge, sludge samples will be analyzed for the complete list of priority pollutants, as designated by current EPA regulation. Analyses should be carried out in both dissolved and particulate fractions.

(v) Appropriate toxicity testing will be carried out on at least two occasions.

(vi) The effect of temperature on BOD kinetics will be investigated by monitoring oxygen demand in seawater-diluted sludge maintained at a series of temperatures ranging from minimum ambient seawater temperature at depth to 20°C. Experimental results should permit development of a functional relationship between the first-order rate constant for BOD exertion and temperature.

In projecting sludge quality characteristics at CSDOC, efforts will be made to (i) extrapolate from past trends, (ii) consider the effect of planned changes in treatment levels or operational procedures anticipated at CSDOC wastewater treatment plants, and (iii) estimate the impact of EPA industrial waste pretreatment regulations and/or industrial growth on sludge quality. Reasonable efforts will be made to identify major point sources of priority pollutants tributary to the CSDOC treatment system. The effect of specific discharge prohibitions will be estimated for pollutants felt to play a potentially critical role as determinants of marine environmental health. Despite obvious uncertainties, Orange County sludge quality

characteristics should be projected over at least a ten-year period.

Task 3.2 Evaluation of In-Plant Unit Operations Affecting Sludge Characteristics

Purpose: To develop relationships between sludge treatment processes and sludge volume and quality. A number of in-plant sludge treatment operations will be considered including anaerobic digestion, sludge screening to remove the largest particulate fraction, and skimming of quiescent sludge to remove floatables. Exclusion of specific sludge fractions from digestion (e.g., waste activated sludge) or separate disposal of particularly worrisome material (e.g., skimmings from primary clarifiers) is also possible. When practicable, full scale operations should be utilized directly for related studies. If such facilities do not exist or experiments are impractical, bench scale tests may be used to estimate attendant sludge quality improvements.

Description: The effect of anaerobic digestion on sludge characteristics will be investigated directly by comparing the qualities of digested versus undigested waste-activated sludges in full-scale operation. In at least six consecutive months, raw and digested waste activated sludges should be analyzed across a single, representative digester for total suspended solids, trace metals, pesticides, specific anions, five-day BOD, COD, organic nitrogen, and ammonia. Raw sludge samples should consist of flow-weighted, 24-hour composites of digester influent. Digested sludge samples may be flow-weighted composites over any period representative of digester pumping operations. Trace metals and pesticide concentrations will be measured in both the particulate and dissolved fractions of raw and digested sludge samples.

During at least six consecutive months, grab samples of raw and digested sludges are to be analyzed for concentrations of total organic carbon (TOC), particulate organic carbon (POC), fatty acids and carbohydrates. The effect of digestion on critical priority pollutants (those observed in high concentrations during analyses for priority pollutants, per Task 3.1) should also be investigated via analysis of raw and digested sludge grab samples.

Bench scale or pilot studies are recommended for evaluation of sludge screening and skimming benefits. Care should be taken to ensure that studies are representative of full scale capabilities in terms of screen size, period of quiescence for separation of floatables, etc. Screenings and skimmings are to be analyzed directly for total solids, trace metals, pesticides, five-day BOD, TOC, POC, fatty acids and carbohydrates.

Task results will be used in water quality models to generate a rational basis for sludge processing decisions.

Task 3.3 Measurement of Sludge Particle Size Distribution, Settling Characteristics, and Coagulation Effects

Purpose: To determine particle fall velocities in seawater for subsequent use in predictive models and interpretation of post-discharge monitoring results. Most sludge particles are heavier than seawater and will sink slowly back toward the seabed following establishment of a passive wastefield. Consequently, the rate at which waste materials accumulate among local sediments should depend upon (among other things) the settling characteristics of sludge particles following initial dilution with seawater. Since discrete settling velocity is primarily determined by the density difference between a particle and its surroundings (hard to measure) and particle size (relatively easy to measure), experiments should be constructed to determine both settling velocities and particle size distributions following seawater dilutions representative of the initial dilution process. The program should be sufficiently extensive to permit establishment of relationships between particle size distribution and settling velocity and to characterize variation in particle size distribution.

The role of coagulation as a determinant of time-dependent particle size distribution within the established wastefield is not well understood. Introduction of an essentially freshwater waste into a saline environment is expected to destablize particles by at least partially offsetting their mutual repulsion. Thus the marine environment provides circumstances favorable to particle growth and accelerated deposition. Understanding how coagulation affects particle settling will permit more rational estimation of particulate fluxes to local sediments.

Description: Bench-scale column experiments are recommended for establishment of particle settling characteristics and investigation of coagulation effects. Experiments will be run on representative dilutions of sludge samples. Techniques for such experiments have not been thoroughly worked out, and latitude must be afforded the experimenter. Technical difficulties have typically attended attempts to initiate particle settling from a single vertical position in the column, as opposed to starting the sedimentation process within a well-mixed column. Particle size distribution measurements should be conducted within the fluid mixture representing wastefield conditions immediately following completion of the initial dilution process. Because turbulent shear which accompanies sludge discharge and mixing of the initially buoyant jet is expected to enhance coagulation and

change the distribution of particle sizes in the passive wastefield, column experiments and particle size measurements will be conducted on samples subjected to rates of shear typically encountered within the initial dilution process. (For description of previous fall velocity studies of digested sludge diluted in seawater, see Faisst (1976).)

Task 3.4 Mobilization of Trace Contaminants within the Water Column

Purpose: To measure the exchanges of various trace contaminants between particulate and dissolved phases when sludge is diluted with seawater. The extent to which decomposition and desorption processes will favor the liberation of sludge-related trace contaminants in the water column is not well understood. The discharge of sludge into the marine environment represents a major discontinuity in redox conditions for particles and associated trace contaminants. The rapid shift from anoxic to oxic conditions may cause an environmentally significant change in equilibria governing the distribution of metals and potentially toxic refractory organics between the dissolved and particulate phases. Previous work indicates that higher oxidation state tends to favor the desorption of several (though not all) trace metals present among sludge particulates. The situation is complicated by the dependence of toxicity (exhibited by some metals) on oxidation state and poorly understood desorption kinetics.

Description: Experiments designed to investigate the mobilization of trace contaminants from discharged sludges will be preceded by a survey of related scientific literature. Reliable analytical results generated elsewhere will be used to limit the scope of original research undertaken within this program. Necessary chemical desorption or adsorption studies will be carried out using well characterized sludges maintained under anoxic conditions until rapidly mixed with seawater in a manner which simulates the initial dilution process. Following dilution the sludge-seawater mixture will be maintained as a well mixed aerobic solution. The distribution of trace contaminants between dissolved and particulate phases will be measured periodically to characterize the extent and time dependence of the desorption reaction (or adsorption, as appropriate). Experiments will also yield estimated degradation rates for specific synthetic organics in the marine environment.

Task Group 4 MODELING

Predictive models are useful tools for understanding processes, mechanisms, pathways, and cause-and-effect relationships in complex phenomena. They often form a basis for integration and synthesis of information from several sources or disciplines. Within the present research plan, mathematical models will be used to

(i) estimate mixing and transport of discharged sludge within receiving water,

(ii) estimate values of water quality indicators such as dissolved oxygen concentration in the water column,

(iii) predict the fallout pattern of sludge particles among local sediments, and

(iv) calculate trace contaminant concentrations and oxygen distribution in the sediment.

The baseline survey and sludge characterization studies will provide input data for model development. Since improvement in existing modeling procedures is expected to be an outgrowth of the overall program, model configurations cannot be fully anticipated at this time. Predictions will be utilized in both outfall design and selection of appropriate sludge treatment operations and industrial waste pretreatment measures.

Task 4.1 Initial Dilution and Height of Plume Rise

Purpose: To calculate the magnitude of initial dilution and height of plume rise during the first few minutes after discharge. Several good models exist for estimating dilution under specified conditions of receiving water density stratification, current strength, outfall configuration, discharge characteristics, etc. Such models also predict the equilibrium height of rise of the wastefield — the height at which the diluted sludge discharge achieves the same average density as its surroundings. Thus initial dilution models can be used to predict wastefield concentrations of sludge contaminants and locate the wastefield within the water column when initial dilution is complete. Because dilution and equilibrium height of rise depend on several variables within the control of the design engineer, these models should be run to develop a disposal strategy during preliminary outfall design. Model output will be used as initial conditions for

other water quality models.

Description: Any one of several models may be used for estimation of initial dilution and equilibrium height of rise. The sensitivity of results should be tested by varying input data (currents, receiving water density stratification, sludge flow) throughout their feasible ranges. Pre-discharge water column measurements (Task 1.1) will provide necessary input data. Care should be taken to identify and model worst case conditions.

Model results are to be combined with projected sludge characteristics to predict wastefield concentrations of specific contaminants. Wastefield concentrations so calculated will serve as the basis for predilution and industrial waste pretreatment recommendations.

Task 4.2 Estimation of Water Column Dissolved Oxygen Concentrations

Purpose: To predict changes in water column dissolved oxygen concentrations for impact assessment and comparison with post-discharge measurements. Since maintenance of receiving water dissolved oxygen levels is biologically important, development of a midwater dissolved oxygen model will receive priority within the project. A successful predictive oxygen model would be of general value for estimating water column dissolved oxygen deficits within other marine waste disposal scenarios. The effects of dissolved oxygen reductions on zooplankton respiration will be investigated separately in Task 6.2.

Description: Development of a midwater dissolved oxygen model of the following form is anticipated:

(i) Model inputs will consist of initial wastefield concentrations of dissolved oxygen and oxygen-demanding materials (outputs from the initial dilution model) in addition to ambient dissolved oxygen concentrations and temperature from predischarge monitoring.

(ii) The model should consider the kinetics of oxygen demand (including temperature effects) and dilution due to turbulent diffusion subsequent to wastefield establishment.

(iii) Model output will include minimum wastefield dissolved oxygen concentration as a function of time following initial dilution (i.e., following a patch of the passive wastefield in the Lagrangian sense). The model should also be run assuming that the discharge has no associated biochemical oxygen demand. Comparison of these cases will

permit estimation of oxygen deficit due to the exertion of waste-related oxygen demand, as opposed to plume-induced upwelling of low dissolved oxygen bottom waters.

Task 4.3 Estimation of Particulate and Trace Contaminant Fluxes to Local Sediments

Purpose: To predict the outfall-related pattern of particulate deposition in the vicinity of the proposed sludge discharge. Dissolved oxygen in bottom waters and trace contaminants in sediments depend upon deposition rates of outfall-related particulates. The flux of particulates and associated contaminants to the ocean floor is governed by processes such as sedimentation, diffusion, advection, particle dissolution and aggregation, and contaminant mobilization from particles in the water column.

A series of current measurements can be combined vectorially to simulate the position of advecting water masses as a function of time. This form of analysis is limited geographically by the proximity of current meters and spatial coherence of currents. By repeating the procedure a sufficient number of times, one can estimate the probability of finding a puff of wastewater at any position (x,y) from the discharge point, given that time t has passed since discharge of the puff. Such information can be combined with discharge characteristics, settling velocity data, effects of eddy diffusion, particle decomposition rates, and contaminant remobilization data to estimate average rates of gross particulate and trace contaminant deposition as a function of position relative to the discharge point.

Description: Current meter and settling velocity data will be used to simulate wastefield trajectories. A set of probability density functions representing the probability of sludge particles reaching the sediments at any position (x,y) from the discharge point will be developed from the wastefield trajectories. The number of potentially important phenomena which can be handled rationally within this model is not yet known and will depend upon results generated elsewhere within the sludge outfall study. The model is to consider, as a minimum, the concurrent effects of wastefield advection and particle settling. Should the data base support their mathematical treatment, ocean turbulence, coagulation, decomposition of particulate organics, and desorption of specific contaminants will be included. Model calibration will be based on sediment trap data collected as directed elsewhere in this report (see Task 1.7).

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Task 4.4 Sediment Concentrations of Dissolved Oxygen and Sludge-Related Contaminants

Purpose: To develop modeling techniques and predict sediment and pore water concentrations of dissolved oxygen and sludge-related contaminants in the vicinity of the proposed outfall site; and to predict the areal extent of sulfide bearing sediments.

Sulfide generation results from the bacterial oxidation of organics in the absence of molecular oxygen and oxidized nitrogen forms. Oxygen depletion leads to reductions in species diversity and biomass. Only a few specialized benthic organisms persist in the presence of hydrogen sulfide. Development of a sound sediment dissolved oxygen model will also provide an important boundary condition for the water column dissolved oxygen model (see Task 4.2).

Contaminants such as trace metals and synthetic organics are possible sources of biological anomalies in the vicinities of several major marine outfalls in southern California. As such, prediction of sediment concentrations of such materials could improve pre-discharge estimates of environmental impacts in a variety of disposal settings.

Description: Factors to be considered in sediment dissolved oxygen and trace contaminant models include:

(i) the fluxes of oxygen-demanding materials (natural and outfall-related) or trace contaminants (Table 4.1) to local sediments as a function of position from the discharge point (output from Tasks 1.7 and 4.3);

(ii) rates of BOD exertion at the sediment-seawater interface (necessary in DO model only) as a function of benthic biomass, sediment organic content, and dissolved oxygen concentration at the interface (see Task 7.1);

(iii) effects of biological mixing and periodic sediment resuspension on sediment profiles of dissolved oxygen, organics, and Table 4.1 trace contaminants;

(iv) diffusion of molecular oxygen through the oxygen boundary layer and pore water near the sediment surface;

(v) chemical mobilization of trace contaminants from sediments including the effect of redox potential on mobilization; and

(vi) temperature effects.

Several of these processes have resisted rational mathematical representation in the past. Should rational dissolved oxygen models prove ineffective, it may be possible to correlate local surface oxygen deficit with the flux of outfall-related, oxygen demanding material to the sediments. Monitoring results from the City of Los Angeles' Hyperion sludge outfall and the Los Angeles County Sanitation Districts' Whites Point outfall system may be used for this purpose.

Dissolved sulfide concentrations among sediment pore waters will be predicted using a chemical equilibrium model, input data from the monitoring program (Task 1.5), and sediment quality models discussed above. Under reducing conditions, the formation of metal-sulfide precipitates can limit dissolved concentrations. Consequently, iron content will be measured within the sediment quality monitoring program.

Task 4.5 Biological Models.

Purpose: To develop methods for predicting the intensity and geographic extent of sludge-related changes among local biota. Several other important tasks are devoted to characterizing the fauna in the vicinity of the proposed discharge site and developing exposure data (receiving water or sediment concentrations of sludge contaminants) via model application or direct measurement. Task 1.8 may yield relationships between exposures and tissue concentrations of these contaminants. It remains, then, to relate estimates of waste-related exposures, body burdens of contaminants, or dissolved oxygen depression (also calculated -- see Task 4.2) to changes in population characteristics observed within the monitoring program. Models capable of predicting the severity and extent of biological anomalies attributable to a given waste disposal scenario will permit comparison of marine disposal impacts with those of other alternatives (land, air) on a more rational basis. The environmental impacts of other disposal methods should be developed via parallel studies.

Description: Development of rational, predictive biological models is encouraged although techniques cannot be suggested at this time. An effort should be made to understand the methods by which individuals and populations of organisms protect themselves against adverse environmental conditions and the limitations of those mechanisms. Previous biological models have been premised on empirical relationships between waste discharge and/or receiving water characteristics and observed biological anomalies, and additional effort along these lines is encouraged. Post-discharge monitoring should be constructed to yield such relationships.

Task Group 5 PRELIMINARY DESIGN

Characteristics of both the discharged sludge and the initial mixing process in the ocean are within the control of the design engineer. Available alternatives, both in the treatment plant and in the submarine discharge structure, will be examined in terms of their effects on sludge quality, initial mixing, and sludge behavior subsequent to discharge.

Discharge depth is of prime importance in outfall design. Based on previous modeling (Jackson, et al., 1979) the anticipated sludge discharge depth is in the 300-400 m range. At such a depth, the resultant plume will be trapped well below the surface under all oceanographic conditions, and surface water quality will be protected. At the same time, the discharge will be shallow enough to avoid oxygen exhaustion among naturally low DO waters of the deep basins.

Task 5.1 Evaluation of In-Plant Design Alternatives

Purpose: To evaluate various treatment and control processes which affect sludge quality characteristics and recommend measures appropriate to marine sludge discharge. For example, trace contaminant concentrations in sludge can be reduced through discharge prohibitions and pretreatment requirements. The sludge solids content and the concentrations of oil and grease and large solids may be manipulated by controlling materials added to the digester or sludge processing subsequent to digestion. The amount of degradable organic carbon in the discharge is functionally related to digester detention time and fraction of discharged solids which have been anaerobically digested. All of these sludge characteristics carry implications for receiving water quality. A more complete list of treatment and control measures to be evaluated is provided in Task 3.2.

Description: In this task, we will estimate sludge quantity and quality characteristics resulting from several feasible wastewater treatment and industrial waste pretreatment combinations. Planned secondary treatment facilities within the CSDOC sewerage system will be considered as well as sludge quality improvements attributable to treatment operations such as anaerobic digestion, sludge screening, skimming, etc. These evaluations will be based on experimental results generated in Task 3.2. Here we will recommend source control and in-plant treatment measures designed to produce a sludge of acceptable quality for marine disposal.

Task 5.2 Selection of Discharge Site and Submarine Pipeline Technology

Purpose: To make a final recommendation on outfall location and depth. The technology required for construction and operation of a deepwater sludge outfall has been developed over the past two decades, both through the construction of submarine oil and gas pipelines and from the operation of the Hyperion sludge outfall. This task is focused on defining engineering design criteria for the proposed discharge and selecting a suitable discharge location.

Description: The proposed discharge site will be selected after a review of available oceanographic data and model applications. Initial and subsequent dilution calculations and related modeling will be carried out to simulate plume behavior after discharge. Maintaining dissolved oxygen at acceptable levels is a key objective. Sludge flow rates and gross density will reflect a degree of predilution of sludge with wastewater effluent. Preliminary calculations will be carried out to size the outfall and determine pumping requirements. Deepwater submarine pipeline construction techniques will be reviewed to select appropriate technologies for laying pipe to the anticipated 300-400 meter depth.

Requirements of the discharge permit (to be established by regulatory agencies) will, of course, be met by a combination of in-plant processes and outfall design.

Task Group 6 BIOLOGICAL IMPACTS -- LABORATORY STUDIES

Supplementary biological studies will be used to investigate biologically-mediated pollutant transformations and biological sensitivities to pollutants. Biological experiments are divided into two groups -- those which can be carried out effectively under laboratory conditions and those which must be performed *in situ* on natural systems. Laboratory studies are proposed in this section and field studies in Task Group 7.

Sludge particle-organism interactions will start in the water column when planktonic animals and bacteria first encounter the freshly mixed sludge-seawater mixture and continue in the sediments following particle deposition. Water-column and near-bottom particles might act as food, as poisons, or simply as environmental "noise" to the plankton overwhelming chemical cues used to find food. In turn, numerous biological factors affect the fates of sludge constituents in the environment.

A brief explanation of chemical and biological determinants of contaminant form and behavior in the marine environment is provided within Chapter 2 of this report.

Task 6.1 Effect of Sludge Particles and Organics on Zooplankton Feeding

Purpose: To determine how sludge particles affect zooplankton feeding. Sludge particles could supplement the zooplankton food supply or interfere with normal feeding activity by masking chemical cues. If zooplankton ingest sludge, they could reduce the concentration of water column particles by "packaging" material in rapidly settling fecal pellets. The mechanisms could change sediment quality characteristics near the discharge. Experiments can show the importance of these interactions and provide information for sediment and water quality models.

Description: Zooplankton used in these experiments will be captured in the vicinity of the sludge plume. Animals used should include demersal zooplankton collected near the sediment/water boundary. Maintenance of these animals following capture will depend upon temperature and perhaps pressure control. Captured, acclimated zooplankton will be exposed to a range of sludge particle concentrations in the presence and in the absence of food. Disappearance of sludge particles from the water and their appearance as fecal pellets would indicate feeding on the sludge; change of regular feeding activity with increased sludge concentration would

indicate interference. Zooplankton will be observed for outward signs of physical or behavioral anomalies and analyzed for body burdens of sludge-related contaminants at the close of the experiment.

Task 6.2 Dependence of Zooplankton Respiration on Ambient O_2 Concentration

Purpose: To investigate relationships between midwater organism metabolisms and dissolved oxygen concentration. A potentially important impact of sludge disposal at 400 m is depression of relatively low ambient oxygen concentrations. Experiments designed to see if midwater organisms can adapt to a low dissolved oxygen environment are also described.

Description: As in Task 6.1, experiments depend upon the capture and acclimation of suitable zooplankton species. In all cases, relationships will be sought between oxygen concentration and rates of oxygen consumption. It may be possible to carry out a crude adaptation test using zooplankton taken from the outfall-affected region at various times following initiation of marine sludge disposal. Oxygen consumption experiments conducted on these specimens can then be compared with the results of pre-discharge experiments.

Task 6.3 Microbial Decomposition of Water Column Organics

Purpose: To measure the rate of organic decomposition as a function of bacterial biomass, temperature, dissolved oxygen, pressure, and level of organic material present. Rates of microbial decomposition and related oxygen demand will provide data for development of a water column oxygen model.

Description: Marine water samples will be taken from midwater, near the proposed discharge site, and maintained at *in situ* temperature throughout the course of the experiment. While it is recognized that maintenance of ambient pressure under lab conditions will require specialized equipment, a few such experiments should be included within a minimum program. If it becomes apparent that pressure effects are not critical to microbial respiration, high pressure tests should be discontinued. Sludge additions to a series of water samples will bracket the range of expected sludge strengths following initial dilution. Periodic measurements in all samples will include concentrations of organics, dissolved oxygen, and microbial biomass (or an acceptable substitute parameter). The rate of sludge decomposition will be calculated from these data.

Task 6.4 Sea Urchin Toxicology -- Lab Study

Purpose: To investigate the toxic response of deepwater sea urchins upon exposure to sludge constituents. The benthic community over much of the southern California slope, including the proposed discharge site, is dominated by two species of sea urchin, *Brissopsis pacifica* and *Allocentrotus fragilis*. Marine waste disposal experience in southern California indicates that sea urchins endemic to shallower waters are particularly sensitive to waste discharge, despite the fact that under some conditions sludge particles sustain urchin populations when their preferred food sources are exhausted. Toxicological studies will be designed to establish the response of dominant urchins (both adult and larval forms) to varying concentrations of sludge-related contaminants.

Description: Methods must be developed to capture and sustain viable deepwater urchins. Maintenance of *in situ* temperatures may be critical to their survival under lab conditions. Urchins will be exposed to a series of sludge/seawater dilutions of strength designed to induce both acute and chronic toxic effects. Oxygen concentration may be varied in any or all of the dilutions. Experiments should yield an estimate of the 96-hour LC_{50} as well as levels representing the onset of such pathological and behavioral effects as loose spines, eviscerated organs, reduced feeding and oxygen consumption, etc. LC_{50} determinations should be conducted on *Allocentrotus* larval and adult forms. Organisms used in chronic toxicity tests should be analyzed for body burdens of specific contaminants known to be present in sludge. These results should be used as the basis of experiments designed to test the response of the same species to specific toxicants. Urchins will be exposed over long periods to a range of concentrations of these contaminants and observed for physiological or behavioral anomalies, as above. Body burdens of trace contaminants will again be established in an effort to correlate observed effects with exposure and bioaccumulation data.

During the course of chronic toxicity tests, organisms will be removed periodically for histopathological study involving tissue (gonadal) sectioning and observation at cellular level. An effort should be made to relate such observations to the qualitative scale devised on the basis of benthic monitoring results (see Task 1.5). Investigators should try to correlate histopathological information so obtained with exposure and bioaccumulation data.

Task Group 7 BIOLOGICAL IMPACTS -- IN SITU STUDIES.

Field studies allow one to observe the effects of sludge on a community of organisms as opposed to individuals or single species. Direct *in situ* manipulation permits ecologists to study the mechanisms of ecological change.

The technology for working at 300 to 400 m depth is not totally established. Well developed systems are available for such proposed experiments as the benthic respiration measurements of Task 7.1 and baited camera observations in Task 7.3. In other experiments, however, such as the various manipulations discussed in Task 7.5, related technology is changing rapidly. Late developments include such systems as one-atmosphere dive suits. This equipment is expensive but may permit a more direct investigation of mechanisms behind sludge impacts. Decisions relative to manipulation studies that rely on the one-atmosphere dive suits or other recent technological developments should be postponed pending accumulation of monitoring results.

Task 7.1 Benthic Oxygen Consumption

Purpose: To find relationships between physical, sludge-related impacts and rate of oxygen consumption in the benthic environment. Sediment oxygen demand is an important component of the overall oxygen balance among marine bottom waters. Sludge discharge will increase the rate of sediment oxygen demand, decreasing bottom water and sediment pore water dissolved oxygen concentrations. Direct measurement of pre- and post-discharge sediment oxygen demand will improve the qualities of sediment and near-bottom dissolved oxygen models and, ultimately, improve our ability to predict biological impacts in similar waste disposal settings.

Description: The proposed program for monitoring benthic oxygen consumption will be carried out using grab respirometers equipped with oxygen probes and syringes for sample withdrawal. Benthic monitoring stations will be selected based on preliminary modeling results to cover the full range of expected impact intensities. A typical respirometer measures dissolved oxygen concentration continuously over an incubation period withdrawing samples for calibration at the beginning and end of the monitoring period. At the close of the experiment, the sampling device removes a grab sample of sediment for chemical and biological measurements and identification of species. Based on these results, correlations will be developed between such

parameters as total biomass or oxygen concentration (independent variables) and rate of oxygen consumption (dependent variable).

Task 7.2 Rates of Particle Ingestion by Macrobenthos

Purpose: To observe the effects of sludge and dissolved oxygen concentration on particle ingestion rates. Important sediment characteristics such as grain size and organic content are dependent upon rates of sediment ingestion and particle degradation by macrobenthos. Here we propose to measure particulate ingestion rates as a function of sludge and dissolved oxygen concentration. Results may be used in sediment quality or dissolved oxygen models described elsewhere in this report.

Description: Per Task 7.1, grab respirometers will be used to carry out related experiments. Here, however, dye or isotope-labelled sludge particles will be injected into the respirometer chamber. A representative period will follow for ingestion of labelled substrate, after which samples will be retrieved and the gut contents of organisms analyzed for tracer. Dissolved oxygen concentration will be measured throughout the experiment and surface concentrations of total organic carbon will be determined in sediment grabs. Measurement of total benthic biomass is also required. Although not expressly described in Task Group 6, *in situ* particle ingestion experiments described here should be supplemented with a laboratory study constructed along the same lines.

Task 7.3 Effect of Sludge Particles on the Feeding Habits of Marine Fauna -- Baited Camera Experiments

Purpose: To observe directly the effects of sludge discharge on feeding habits of marine fauna. Baited camera experiments are the *in situ* counterparts of laboratory efforts to observe sludge impacts on fish and microinvertebrate feeding and will serve the same overall purpose.

Description: A dead fish bait in the presence and absence of sludge will be used to determine scavenger feeding preferences among midwaters 50 to 100 meters above the proposed discharge depth. It has been suggested that at sufficient concentration sludge particles interfere with chemical cues upon which zooplankton and fish depend for finding food. Baited camera experiments will be designed to test that hypothesis.

Task 7.4 Field Observation of Zooplankton Feeding in the Presence of Sludge Constituents.

Purpose: To determine whether or not zooplankton are inclined to feed on sludge particles.

Description: Comparison of gut fullness and analyses of gut contents in zooplankton taken from study (proximate to the outfall) and control areas offer the most direct sources of evidence. The Hyperion sludge discharge could be studied in this regard during the pre-discharge period.

Task 7.5 Other Biological Experiments

Purpose: To be defined as needed based on the results of post-discharge monitoring.

Description: The monitoring program described in Task Group 1 of this report is designed to register unanticipated as well as anticipated impacts of marine sludge disposal. Consequently, monitoring results will, in all probability, suggest additional field or laboratory manipulations which are not warranted at this point. The class of experiments in which divers directly manipulate elements of the local benthic environment has already been noted. Due to the expense of equipment rental and because potential advantages are not well defined at present, tasks which require the use of deep water diving equipment have been at least temporarily omitted. Monitoring results may justify their reconsideration during program revisions.

Task Group 8 SPECIAL STUDIES

In a broad multidisciplinary research effort, it is expected that the research plan may have to be modified periodically as the need for new tasks becomes apparent. As such, Task Group 8 will grow during the course of the experiment. This section contains those tasks which do not fall into any other category, including:

8.1 Identification of Sludge Tracers
8.2 Remote Tracking of Wastefield
8.3 Extrapolation from Hyperion Sludge Disposal Experience
8.4 Assessment of Potential Public Health Impacts.

Additional tasks may be included within this group in future program revisions.

Task 8.1 Identification of Sludge Tracers

Purpose: To identify tracers for direct tracking of sludge plumes and positive delineation of the depositional area. Recent advances in dilution modeling have not been matched by improved field verification techniques. Field measurements are impeded by the lack of an effective tracer. An ideal tracer should:

(i) behave in the same way as the material of interest,
(ii) not be found under natural conditions,
(iii) be detectable in very low concentrations, and
(iv) be harmless to the environment.

Dyes, radioactive tracers, and other measures all fall short in terms of these criteria. Other possibilities should be investigated.

Description: A number of substances have been suggested as tracers of wastefield dispersion and particle fallout in the marine environment. The feasibility of using these and other tracers for the purposes outlined above will be examined.

(i) Relatively heavy substances found in sludge (e.g., tomato seeds, gritty contaminants) but not in unimpacted sediments have been suggested to trace the fallout pattern in the immediate vicinty of the outfall.

(ii) Sludge refractory organics detectable in low concentrations may

be used to determine the lateral and vertical limits of effluent-related suspended materials and sediment deposits. Suggested tracers which fit this description include halogenated hydrocarbons, natural hydrocarbons such as aromatic or other cyclical compounds, and coprostanol.

(iii) Similarly, the trajectories and sediment distribution of sludge particulates can be measured using isotope ratios (e.g., $^{13}C/^{12}C$, $^{15}N/^{14}N$, $^{34}S/^{32}S$). The utility of such measurements lies in differences between ratios characteristic of natural and sludge-related particulates.

(iv) Inorganic materials present at higher concentrations in sludge than in nature, e.g., trace metals, may be used to estimate the contribution of effluent particles to local sediments. The utility of trace metals in this regard has been fairly well established through wastewater monitoring. Unfortunately, metal concentrations after initial dilution are normally so close to background levels or so near detection limits that their use as tracers of dissolved contaminants is not promising.

(v) Artificial tracers may be added to the sludge discharge if they can be detected in very low concentrations. Candidates include fluorescent plastic beads a few microns in diameter. While such tracers may have the advantage of detectability, the interpretation of related data is nebulous because the sludge discharge can only be "marked" during some relatively short time interval. The site at which measurements are taken always holds a mixture of marked and unmarked sludge. Such experiments offer a qualitative indication of the area invaded by sludge particles, provided that the beads and sludge solids are transported in the same way.

Task 8.2 Remote Tracking of Wastefield

Purpose: To locate the near-field sludge plume using an acoustic device. Among detection methods, remote sensing is by far the most efficient. Acoustic tracking may provide a convenient means for locating the established wastefield. Because marine zooplankton can be detected in this manner, zooplankton avoidance or attraction to the wastefield may be monitored acoustically.

Description: The feasibility of locating the wastefield from shipboard using acoustic equipment will be investigated during water quality monitoring cruises. If successful, the technique can be used during field verification of initial dilution and water column dissolved oxygen models.

Task 8.3 Extrapolation From Hyperion Sludge Disposal Experience

Purpose: To apply oceanographic data and insight gained via monitoring efforts at the City of Los Angeles sludge discharge site in Santa Monica Bay. For years, Los Angeles has operated an outfall dedicated to the discharge of digested sewage sludge to the marine environment. The structure, known as the Hyperion sludge outfall, terminates 11 kilometers from shore near the head of the Santa Monica Canyon at 100 m depth. Keeping in perspective the similarities and differences between the Hyperion sludge outfall and the proposed deep water outfall for Orange County, it is natural to extrapolate from the Hyperion experience to the present situation.

Description: A number of field surveys and evaluation studies have been conducted on the impact of the Hyperion sludge outfall (SCCWRP, 1974 through 1978; Bascom, 1981; Koh, et al., 1977). These data and all relevant publications will be reviewed to extract information which can be applied to the Orange County situation. Hyperion sludge is discharged in shallower water with greater potential for transport and mixing in waters of higher dissolved oxygen concentrations. Consequently, Hyperion field survey results should not be applied within the context of the Orange County study without considering these and other differences (e.g., current patterns). Los Angeles monitoring experience will permit rough projection of impact magnitudes at the Orange County site.

Task 8.4 Assessment of Potential Public Health Impacts

Purpose: To insure that no significant public health impacts result from sludge disposal practice. The primary avenues for potential discharge-related impacts to human health involve either direct contact of humans with waste and associated pathogens or ingestion of contaminated seafood from an impacted area.

Description: There is reason to expect, largely based on marine wastewater disposal experience, that detrimental effects related to direct human exposure to pathogens will not result from deepwater sludge disposal. The flux of pathogens to the environment (total number of organisms) due to sludge disposal will be significantly lower than that which results from wastewater disposal. The proposed sludge outfall is about five times deeper than the existing CSDOC wastewater outfall and will terminate farther from beaches and shellfishing areas. It is anticipated that the sludge plume will be trapped well below the ocean surface for long periods of time -- considerably longer than is necessary for destruction of enteric microorganisms. A modest program of water column coliform sampling

will be carried out to confirm that hypothesis (see Task 1.1). In the event sludge-related coliforms are found to persist among receiving waters, the program can then be expanded to include sampling over a broader area and measurement of pathogen concentrations. Consideration will also be given to potential pathogens such as pathogenic amoebae.

The potential for human exposure to toxicants of sludge origin will be assessed using monitoring and bioconcentration data developed in Tasks 1.5 and 1.8, respectively. That program should be expanded to include periodic measurements of liver and muscle concentrations of Table 4.2 contaminants among species known to be taken (commercially or for sport) from potentially impacted areas. Annual sampling frequency is recommended. Results can be compared with FDA limits for edible tissue, state standards, EPA guidelines, etc., in light of commercial and sport fishing catch statistics to determine the significance of related impacts on human health.

Task Group 9 INTEGRATION, ANALYSIS AND INTERPRETATION

As explained in Chapter 3, the research tasks fit into a conceptual structure designed to develop information on important coastal oceanographic processes and effects of the proposed deep-water sludge discharge. Task Groups 1 through 8 above will produce a wealth of related information. The purpose of this ninth group of tasks is to integrate the new knowledge within the existing scientific framework, draw conclusions, make recommendations, and revise the study plan based on the research results. Group 9 include the following individual tasks:

Task 9.1 Analysis and interpretation of survey data
Task 9.2 Comparison of model predictions with observations
Task 9.3 Effects of organic enrichment on the dynamics of midwater plankton communities
Task 9.4 Revision of research plan
Task 9.5 Annual summaries of project results, conclusions and recommendations.

Task 9.1 Analysis and Interpretation of Survey Data

Purpose: To correlate data from various tasks and develop an overall understanding of the interplay among physical, chemical, and biological processes important to the transport, fates, and effects of the sludge contaminants. Although investigators will be encouraged to interpret the results of individual tasks, integration of their findings is an indispensable function without which the overall study objectives cannot be satisfied.

Both individual investigators and those groups or individuals responsible for synthesis and interpretation of project results are to review related scientific findings generated outside the CSDOC research project to avoid duplication of effort, assist in formulation of hypotheses and experimental techniques, and interpret new information within the most relevant and complete framework possible.

Description: Accumulated data will be integrated into a suitable data bank and library collection for archival purposes, available to all investigators for work on their respective tasks. However, in this task the investigator(s) should expressly search for causal relations between observed effects and characteristics of the sources and the ocean. For example, is the observed depositional zone (or

"footprint") consistent with current measurements and particle fall velocities? Or, is the lack of detectability of some trace contaminants due to unexpected sinks, or are the dilution and dispersion so great that the expected concentrations are below the measurement thresholds?

Mass balances will play an important role in the synthesis of program results. Can we develop overall scenarios of how and where the BOD of the sludge particles is exerted? What fraction of the organic carbon in the particles is oxidized before the particles reach the bottom? Does the integral of the areal distribution of carbon deposits match the input minus losses within the water column? What fraction of discharged metals is trapped in the sediments compared to that which is flushed out of the area?

These questions are intended to be suggestive, as the most pertinent issues for study should not be predetermined. Part of the interpretation of the post-discharge monitoring data will entail identifying measurements or sampling stations which may be discontinued and, conversely, defining areas in which the research effort can be profitably expanded.

Task 9.2 Comparison of Model Predictions with Observations

Purpose: To verify predictive models using observations of dilution, transport, fates and effects of the sludge discharge. The future success and acceptance of marine discharge of any waste depends on good predictive models, so that engineered disposal systems may be undertaken with reasonable understanding of what the environmental impacts will be. This task will provide model calibration and opportunities for further model development in an effort to reach that goal. The results will thus have national significance for future waste disposal policy.

Description: Mathematical models developed in Task Group 4 will be evaluated both step-by-step and in terms of their overall accuracy. Input data will be adjusted in light of new research results, and models rerun as needed. If predicted results still disagree with observations, some parametric studies may be undertaken to see what input values yield better predictions. For example, it may not be possible to get a proper laboratory evaluation of particle fall velocities including the effects of shear-induced coagulation. Under these circumstances, it may still be possible to back-calculate the settling velocity using the sedimentation model described in Task 4.4 and sediment trap data obtained per Task 1.7.

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Overall, this may be a large task, and may illustrate the need for modifications or additions in other tasks in order to achieve a predictive capability which is adequate for engineering purposes.

Task 9.3 Effects of Organic Enrichment on the Dynamics of Midwater Plankton Communities

Purpose: To assess carbon balance impacts among local receiving waters attributable to the discharge of sludge. The effect of sludge-related organic carbon on midwater zooplankton community ecology should be investigated quantitatively (to the extent feasible) in light of both (1) the scale of the carbon source represented by the proposed discharge and (2) the scarcity of existing data relevant to waste-related impacts among marine zooplankton. Disruption or alteration in the flow of carbon within the plankton community may be one of the primary effects of sludge (nutrient) enrichment in the pelagic ecosystem.

Description: Results of several related tasks described elsewhere will be integrated to yield a carbon budget within the potentially impacted zooplankton community. Analytical and/or experimental work to be considered in devising such a budget includes results of the following tasks:

Task 1.1 -- Measurement of water quality characteristics (dissolved organic carbon, particulate organic carbon, nutrients, etc.).

Task 1.2 -- Water column biological monitoring (changes in the distribution and abundance of zooplankton in relation to the presence of sludge-related materials within the water column).

Task 6.1 -- Effect of sludge particles and organics on zooplankton feeding (laboratory measurement of carbon utilization by zooplankton in the presence of sludge particles).

Task 6.3 -- Microbial decomposition of water-column organics (laboratory measurement of microbial organic carbon decomposition in the presence of varying sludge particle concentrations).

Task 7.4 -- Field observation of zooplankton feeding in the presence of sludge constituents.

Task 9.4 Revision of the Research Plan

Purpose: To revise the research plan annually (approximately) accounting for new scientific information, changing needs and priorities, and availability of funds.

Description: The research plan must be sufficiently flexible to respond to changing circumstances -- i.e., to permit "mid-course corrections". Examples of situations which will necessitate adjustments include:

1. Changes in water quality regulations governing this proposed sludge discharge;

2. New scientific discoveries elsewhere;

3. Unexpected research results ("surprises") which need more investigation;

4. Evidence that environmental effects are geographically restricted to the near-field and undetectable in the far-field;

5. Changing research priorities and availability of funds;

6. Changes in sludge quality or volume due to source control (or pre-treatment) and unit processes in contributing treatment plants;

7. Research results which indicate that further work on a particular task is not needed or, conversely, that program expansion is required.

Because of all these factors, a group or committee should be formed which is responsible for plan review at about one-year intervals.

Task 9.5 Annual Summaries of Project Results, Conclusions and Recommendations

Purpose: To summarize, draw conclusions, and make recommendations annually and at the end of the research project.

Description: For policy-makers this is perhaps the most important task in the research progam. It should produce a consensus (or range of views) within the scientific community regarding what was learned and what the implications are for continued sludge discharge by Orange County Sanitation Districts, or for national policy.

CHAPTER 5

PROJECT ORGANIZATION

5.1 INTRODUCTION

In this chapter we turn our attention to management questions: who does the work, how much will it cost, who provides funds, how is it managed, and how are the results evaluated? At this stage, we can only recommend some general principles for management and provide some rough cost estimates.

The research plan in Chapter 4 describes the work to be done, without regard to who will perform which tasks. Although major parts of the proposed work may be done under grants and contracts to universities and private firms, significant portions will be performed by the County Sanitation Districts of Orange County (in-house) and by the Southern California Coastal Water Research Project. NOAA, EPA, and the California Water Resources Control Board may also have some direct roles in conducting the research as well as funding it. There obviously needs to be strong coordination, while still encouraging innovative research.

Fina ly, there must be procedures for reporting the conclusions and recommendations to the regulatory agencies and CSDOC on a regular basis, so that decisions can be made regarding continuation of the ocean discharge of sludge.

5.2 RESEARCH ADMINISTRATION

The suggested organization for research administration, which is summarized in Figure 5.1, will be separate from CSDOC and its normal operating functions. Except for in-house work by CSDOC, all the research tasks should be funded through a joint administrative agreement of the various funding agencies. An administrative board representing the sponsoring agencies would appoint a well qualified scientist or engineer to be the project research administrator. This person should have experience in both oceanographic research and waste disposal problems. Using funds provided by the sponsoring agencies as a single pool, the project research administrator would carry out the research plan by means of grants and contracts and disseminate the results. The research administrator might be a career scientist drawn from one of the sponsoring agencies (such as NOAA or EPA), but while on his assignment, he would be responsible only to the administrative board. He would also operate independently of the Orange County Sanitation Districts, but maintain close technical liaison.

A research review committee of scientists and engineers would be appointed by the research administrator with concurrence of the

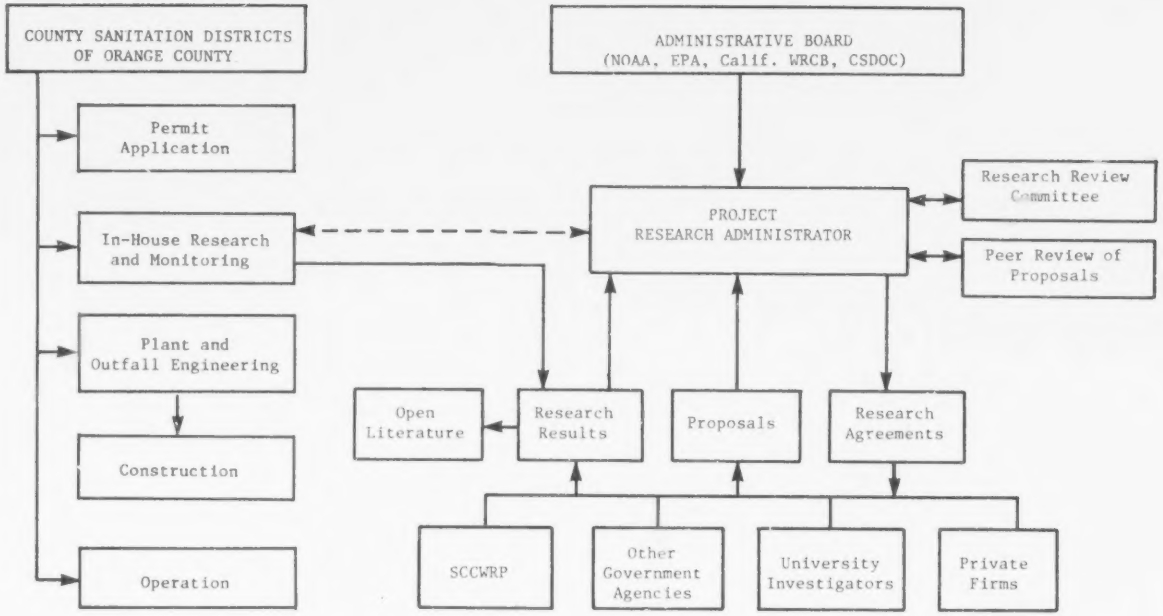

Figure 5.1 Suggested organization for research administration. Arrows indicate main lines of responsibility, but do not show all the communication links needed for coordination and utilization of results.

administrative board. Membership of this committee would be based on professional qualifications, rather than organizational affiliation or geographical location. The functions of this research committee, in collaboration with the research administrator, would be to:

(1) Approve the research plan and all revisions;
(2) Establish priorities among research tasks;
(3) Approve procedures for solicitation of proposals and award of grants and contracts;
(4) Evaluate research proposals submitted by organizations who wish to perform the work, and recommend awards;
(5) Prepare an annual summary of the findings and evaluate their significance.

The procedures for receiving and processing proposals (function (3) above) should vary depending on the type of task and the type of investigator. For some work, unsolicited grant proposals should be accepted, while for others well-defined requests for proposals (RFPs) may be issued. The award of research funds may be by grant, contract, or cooperative agreement, depending on which is most appropriate to the circumstances. With grants, the individual investigators are given the maximum discretion and encouragement to generate new ideas, while contracts imply a more closely prescribed and pre-determined scope of work. In short, the award mechanisms should be flexible and should not be constrained to just one procedure.

When processing proposals (function (4) above), the administrator and the research review committee will be assisted by a system of external peer review of proposals by individual experts. For renewal of grants or contracts, peer review would include evaluation of the proposer's performance under previous agreements for the sludge disposal experiment.

Investigators would be required to submit progress reports at least annually to the research administrator and a final report at the end of the research agreement. The technical components of these reports should be available to all researchers and the public. Publication in peer-reviewed professional journals ("open literature") should be encouraged and should be considered in evaluations by the research review committee.

The research administrator will also make proper arrangements to see that the basic data and research results are properly archived for easy retrieval. Updating the research plan and preparing annual summaries (part of functions (1) and (5) above) have been included in the list of research tasks (Tasks 9.4 and 9.5, respectively, in Chapter 4). The research administrator may decide to award a grant or contract for these activities in order to provide inputs for action by the research review committee.

The most important purpose of this research project is to provide information and guidance to decision-makers in the regulatory agencies and CSDOC. They will need to review the project results during the five-year post-discharge observational period and at the end of the research program to decide whether or not the sludge discharge should be continued. Factors involved in these decisions go beyond the scientific evaluation of the effects of ocean discharge, and involve impacts and costs of alternative sludge disposal systems, legal constraints, and political perceptions. Thus, while the research review committee has the major responsibility for evaluating environmental impacts, it is clearly not the proper group to be charged with the final decision on continuance of the discharge of sludge to the deep ocean.

5.3 RESEARCH PROJECT COSTS

Although cost estimation is difficult and risky at this stage, it is necessary to give some indication of the scale of proposed work. For this purpose, we established a time line originating at the date of approval of this project concept (by legislative and/or administrative actions). This date is, of course, very uncertain (or it may never occur), but it is the logical reference point for both construction and research activities. For construction of the outfall and associated in-plant facilities for sludge processing and pumping by the County Sanitation Districts of Orange County, the following schedule is anticipated:

Year	Month	Activity
0	0	Project concept approval
0	1	Site selection, start design
0	3	Filing of permit application
1	0	Complete outfall design
1	4	Complete design of on-shore facilities
1	4	Permit granted by regulatory agencies
1	4	Advertise construction projects for bids
1	7	Award construction contracts
2	4	Complete all construction, start testing facilities
2	6	Start regular continuous discharge

Thus, it is expected to take 2 1/2 years from project concept approval to start of discharge. During this period, the research project would be formally started, and two years of predischarge work would be conducted. After discharge, five years of observation are planned, making a total of seven years for the research project.

The estimated costs for each of these years ranges from about $1.5 to 2.0 million (in 1982 dollars). In Table 5.1 we show the estimated annual amounts and the percentage allocation of funds to the nine task groups described in Chapter 4. An allowance of 13 percent of the total has been included for administrative costs (equivalent to 15 percent of total direct costs of Tasks 1 through 9). No attempt has been made to further disaggregate costs to the level of individual tasks within the groups.

The final allocation of funds will of course be the responsibility of the project research administrator and the research review committee when the time comes. The present estimates are given only to illustrate how the priorities and areas of emphasis shift over the course of the project.

Before the deep-ocean sludge discharge concept is approved (before time zero), there is still need for considerable activity in Tasks 1,2,3,4, and 5 in order to acquire oceanographic data and do the analyses required to support the concept development and permit application. Such work is already under way with limited funding from CSDOC and NOAA and includes: a one-year baseline oceanographic survey by SCCWRP (see Appendix A); chemical characterization of sludge (in-house by CSDOC); measurement of sludge particle fall velocities by EQL, Caltech; and this research planning study, also by EQL, Caltech. Because of the indefinite length of this pre-approval period and the uncertainty of near-term funding arrangements, we have not attempted to include this work in the cost estimates. Some interim administrative arrangements will also be required, which we have not attempted to define.

The estimates in Table 5.1 are subject to substantial uncertainty. Furthermore, cost figures will change depending on how the project progresses and what the early research results are. The costs assume a rather thorough investigation, even though some members of the Research Planning Committee believe the effects of the sludge discharge will be minimal. The objectives, however, reach beyond CSDOC's immediate needs, to include improvements in predictive modeling of deep-water disposal and contributions of useful information for state and federal policy-makers. Because of the national objectives involved, we expect that funding responsibilities will be shared by federal agencies (NOAA, EPA), the California Water Resources Control Board, and the County Sanitation Districts of Orange County.

Table 5.1

Estimated Cost of Research Project

	Predischarge		Post-discharge				
Year	1	2	3	4	5	6	7
Estimated total cost (millions of 1982 dollars)	$2.0	2.0	1.5	1.5	1.8	1.9	1.9
Percentage allocations by task groups:							
1. Survey for discharge-related effects	21%	21%	32%	30%	23%	20%	15%
2. Site characteristics	11	11	0	0	0	0	0
3. Sludge characterization	10	7	8	4	3	3	3
4. Modeling	8	9	8	7	7	9	9
5. Preliminary design	5	0	0	0	0	0	0
6. Biological impacts--lab studies	12	13	12	19	16	16	11
7. Biological impacts--in-situ studies	7	10	8	8	16	16	15
8. Special studies	7	7	8	8	10	10	9
9. Integration, analysis and interpretation	6	9	11	11	12	13	25
Administration	13	13	13	13	13	13	13
	100	100	100	100	100	100	100

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APPENDIX A

DESCRIPTION OF THE SCCWRP PREDISCHARGE OCEANOGRAPHIC SURVEY

Introduction

The Southern California Coastal Water Research Project (SCCWRP) was organized in 1969 to study the environmental effects of municipal wastewater disposal in southern California marine waters. Its efforts are currently funded jointly by several major southern California wastewater treatment agencies, including the County Sanitation Districts of Orange County (CSDOC).

This appendix describes the scope of preliminary deep-ocean monitoring undertaken by SCCWRP in support of the Orange County proposal for a deep-ocean sludge disposal experiment. This work represents a first step toward establishment of baseline conditions in waters and sediments likely to be affected by the sludge discharge. The SCCWRP program, financed by CSDOC, is now in progress; results will be reported separately by SCCWRP in early 1983. When complete, SCCWRP measurements will provide: (i) a basis for estimating environmental impacts attributable to the proposed sludge discharge, and (ii) data which partially satisfy baseline oceanographic survey requirements outlined in Chapter 4. In order to avoid costly repetition, SCCWRP results, station selection, etc., should be carefully considered before proceeding with the project baseline survey (see Task Group 1, Chapter 4).

The zone under study within the SCCWRP investigation extends to a depth of >600 meters and some 20 km alongshore from the suggested discharge site. The program is designed to provide three kinds of information:

1. Physical measurements of receiving water density structure and currents. (Table A-1)

2. Chemical measurements in receiving waters, surface sediments, and some animal tissues. (Table A-2)

3. Biological measurements within the benthic and pelagic communities. (Table A-3)

The SCCWRP oceanographic survey, including sampling points and frequencies, is described in the text, tables, and figures which follow. The reader is referred to the forthcoming SCCWRP survey report for details relative to sampling procedures and equipment.

Table A-1. Physical Studies by SCCWRP

Type	Technique	Number of Sampling Periods (duration if cont.)	Number of Stations	Comments
Currents	current meters	continuous for 1 year	1	Three depths (1, 51, 101 m above bottom) read every 15-30 minutes
	"	60 days	1	51 m above bottom
	"	60 days	1	101 m above bottom
Density structure	Literature			Review profiles for years 1952-1969
	STD recorder	3	4	continuous surface to bottom
	thermography	60 days (continuous) in each of 3 seasons	1	at three depths (with continuous current meters)
Sediment grain size analyses	Pipet and sieve	1	8	Stations sampled comprise a subset of the sediment stations along a transect across the discharge site.

Table A-2. Chemical Studies by SCCWRP

Sample type	Number of Sampling Periods	Number of Stations	No. samples & depths	Analyses to be done
Sediment grabs	1	49	Subsamples from grab of upper 2 cm	archives wet - Volatile Solids, BOD, HEMs, TOC, TON organic - chlorinated hydrocarbons metals - Ag, Cu, Cd, Cr, Pb, Zn, Ni, Hg
Sediment Core	1	3	1	Archives
Water column dissolved oxygen	3	4	~50 m intervals	
Animal tissue	1	8	2 to 4 species from trawls	5 composites each of liver and muscle for metals and chlorinated hydrocarbons

Note: Sediment analyses indicated were performed on samples obtained at subsets of the 49 (total) grab sampling stations.

Table A-3. Biological Studies by SCCWRP

Animals	Technique	Number of Sampling Periods	Number of Stations	Work to be performed
Bacteria	Bottom Samples	1	8	Counts; ATP/biomass
Plankton	Auriga and Bongo nets	1	4 4 stations 2 depths	Zoo and ichthyoplankton to be identified and enumerated. (near bottom and 50 m above bottom)
Benthic infauna	Grabs	2	49/8	Identify, count, weigh benthic animals
Benthic epifauna (fish and inverts)	Otter trawl	2	8	Identify, count, weigh trawl-caught animals
Demersal fish and inverts	Photographic survey	1	3	Identify animals seen in photos
Fish	Long line	1	4	Identify, count, weigh, preserve stomachs
Food webs	Gut analyses of trawl and grab-caught animals	none specified		

Physical Oceanography

The program objective in this area is to characterize currents and water-column density structure in the vicinity of the proposed outfall. These data will permit prediction of initial dilution, plume height-of-rise, pattern of local particulate sedimentation, and the rate of exchange of water overlying the outfall-influenced sediments.

Current meters have been deployed at several elevations above the bottom at each of three stations (see Figure A-1). A string of meters is to record currents in the vicinity of the proposed discharge site (300-meter depth) continuously for about a year at 1, 51, and 101 meters above the bottom. Meters are to be deployed at two other sites to establish the continuity of currents. The first of these "secondary" stations is located 10 km upcoast from the proposed outfall, and the second is displaced in the offshore direction. To date, the current-meter program has been hindered by equipment loss. As a result, program results may represent somewhat different periods than originally envisioned.

Information on the density structure of the ocean in the vicinity of the outfall will be obtained from three sources: (1) historical data, (2) profiles measured using an STD (salinity/temperature/depth) recorder, and (3) temperature fluctuations recorded at three different elevations.

Water column salinity and temperature data obtained within the CalCOFI program will be used to provide a long-term history of the density profiles. The history includes: (1) the variability between stations; (2) seasonal variability, and (3) the inter-annual variability.

Density profiles at the proposed discharge site, as well as inshore, offshore, and in San Gabriel Canyon will be collected once during each of three oceanographic seasons. These profiles will be obtained using a recording STD. Water samples at the surface and at the bottom of the profile will also be collected to verify the STD calibration.

Surface sediments will be analyzed for grain size distribution at eight stations. Sampling points comprise a subset of the sediment monitoring stations which lie along the transect across the discharge site.

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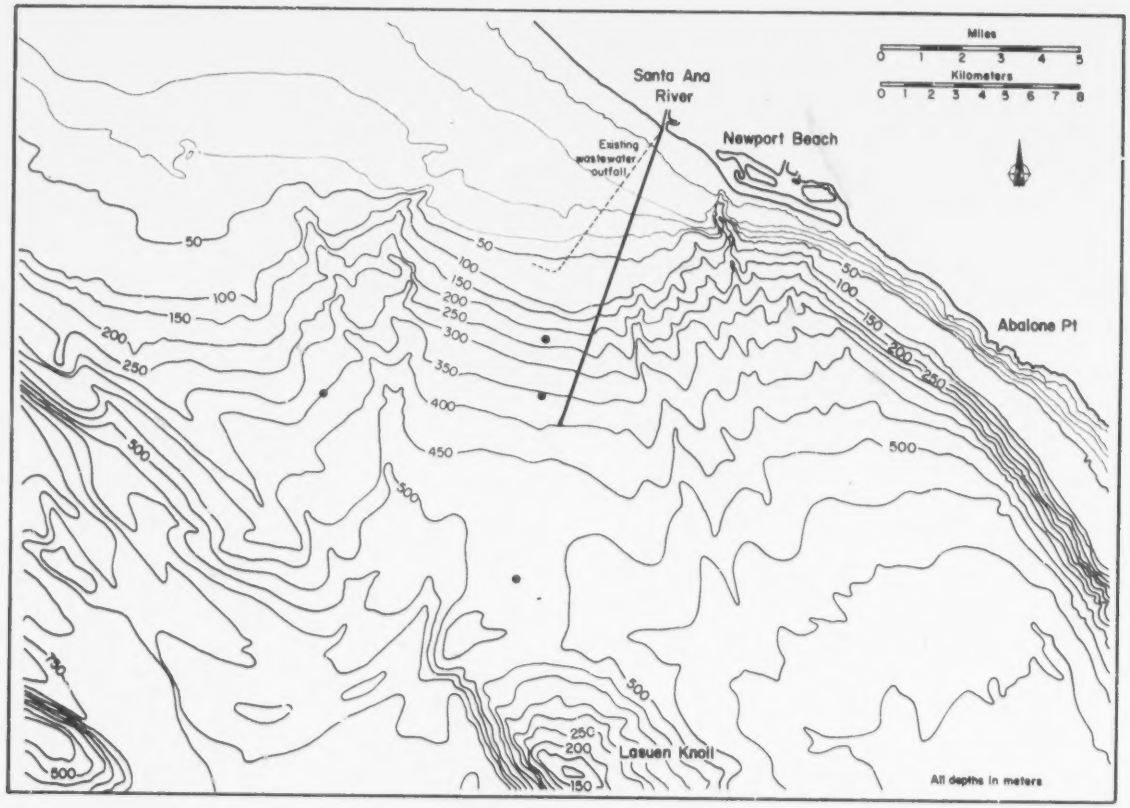

Figure A-1 SCCWRP Predischarge Baseline Survey -- Location of current monitoring stations. Note, positions shown are approximate; LORAN C coordinates are available from SCCWRP.

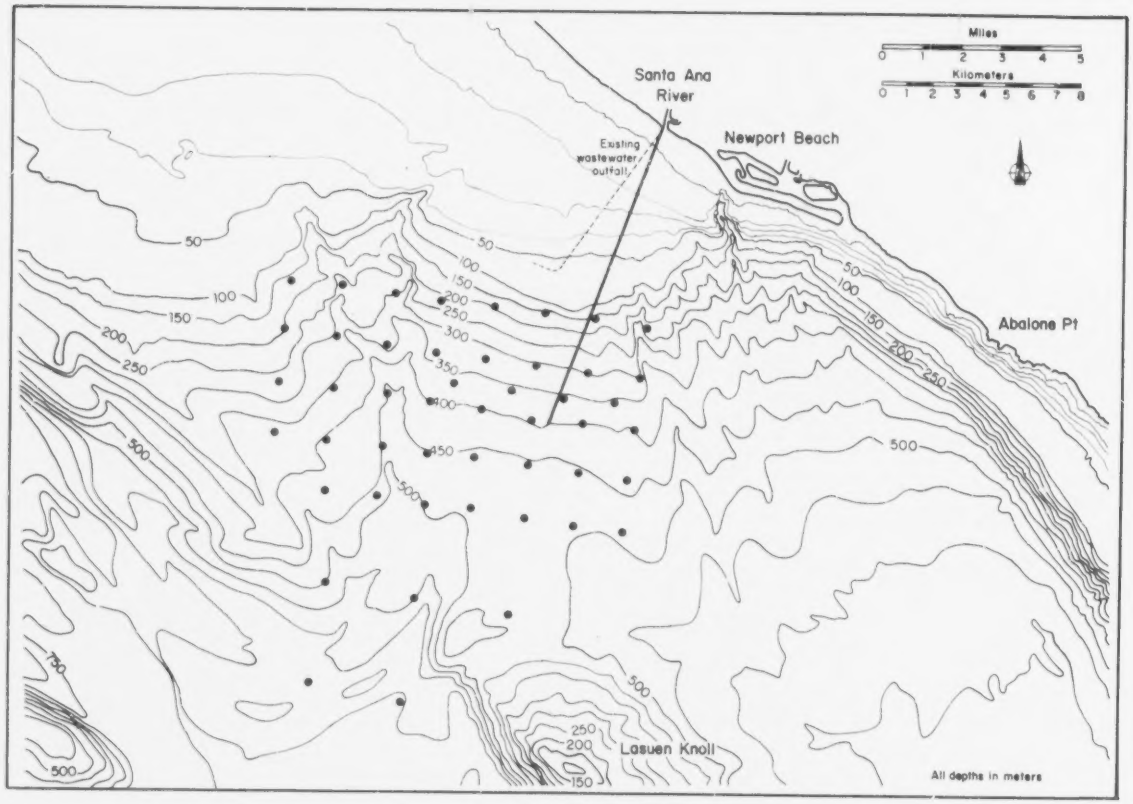

Figure A-2 SCCWRP Discharge Baseline Survey -- Location of benthic grab stations. Note, positions shown are approximate; LORAN C coordinates are available from SCCWRP.

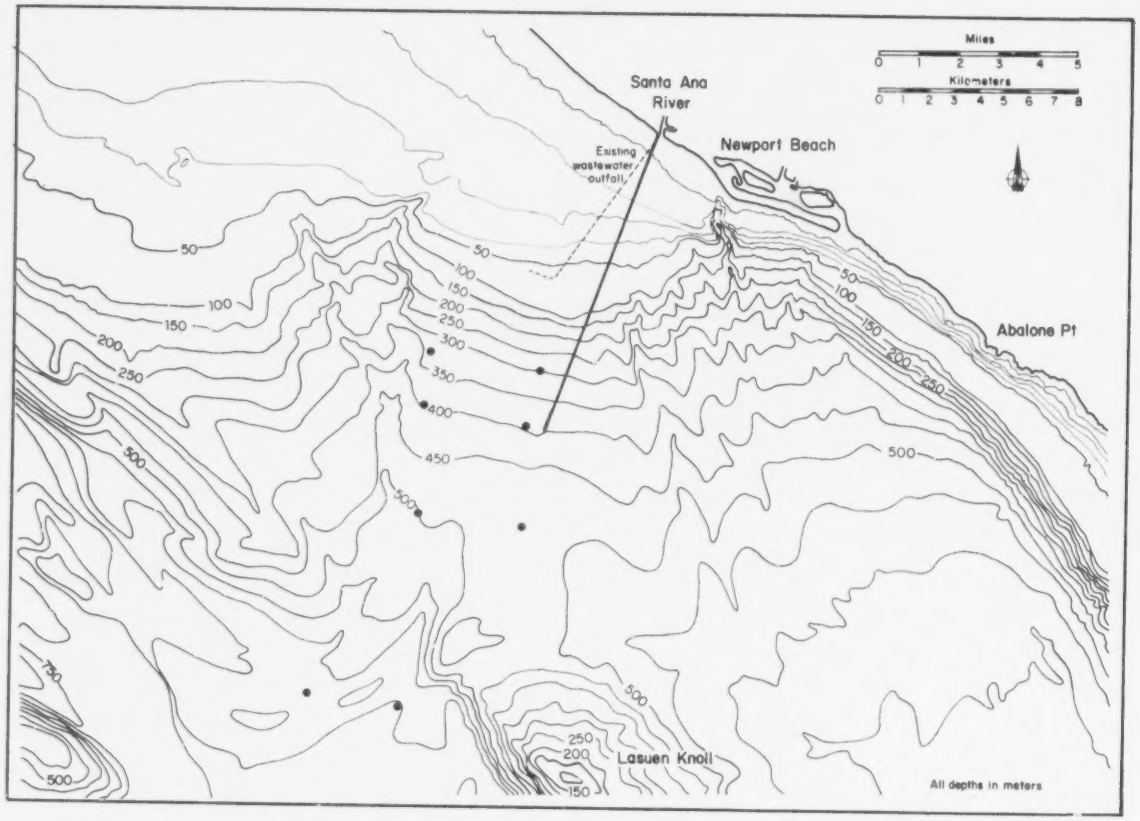

Figure A-3 SCCWRP Predischarge Baseline Survey -- Location of stations serving trawl, plankton, and long-line monitoring programs. Note, positions shown are approximate; LORAN C coordinates are available from SCCWRP.

Chemical Measurements

Sediment concentrations of specific nutrients, metals, chlorinated hydrocarbons and petroleum hydrocarbons will be measured at some of the 49 stations (see Figure A-2) in the region surrounding the suggested discharge site. These will establish background chemical conditions likely to be affected by the proposed discharge. A replicate subsample from each station will be frozen and archived by CSDOC to permit subsequent (post-discharge) analyses for constituents which may have been overlooked initially. Three sediment cores (about 50 to 100 cm deep) will also be taken and archived.

Dissolved oxygen will be profiled to characterize predischarge receiving-water concentrations. Samples will be taken at four stations (approximately 50-meter vertical interval) during each of three seasons.

Liver and muscle tissue concentrations of metals, organic mercury, and chlorinated hydrocarbons will be measured in several trawl-caught animal species. Analyses will be carried out on composites of 5 animals (if possible) to establish baseline tissue levels for these contaminants.

Table A-2 is a summary of chemical measurements to be carried out within the SCCWRP predischarge survey.

Biological Studies

Biological surveys will be used to establish the kind and number of organisms inhabiting the slope area at depths which may be affected by the proposed sludge outfall (200 to 600 meters depth). Identification and characterization of indigenous species in this zone may permit anticipation of ecological impacts attributable to the proposed discharge.

Zooplankton and larval fishes will be collected at each of eight stations (see Figure A-3) using an opening/closing bongo or auriga net towed for five minutes near the bottom and 50 meters above the bottom. Resultant data will be used to determine the biomass and community composition of zoo- and ichthyoplankton populations in deep water.

The benthic invertebrate community will be studied via a program of bottom samples to be collected at the 49 sites specified in Figure A-2. A Van Veen grab sampler will be employed. Animals retained on a 1.0 mm screen will be identified and counted. Total biomass and Infaunal Trophic Index will be calculated and plotted as extensions of existing survey results.

Epibenthic invertebrates will be taken in bottom (otter) trawls conducted using standard procedures (8-meter net width, 1.1 m/sec speed of advance for 10 minutes) and results compared with data collected in shallower water.

Fishes may be impacted by community changes at lower trophic levels. The objectives of the SCCWRP fish study will be to (1) add to existing data on the diversity and abundance of fishes in the San Pedro Basin region and (2) study the feeding habits of several species collected. Fish abundance will be measured via several methods. Otter trawls will be conducted at the stations shown in Figure A-3. In addition, a photographic survey of the bottom and long-line collections will be made at three and four stations, respectively.

Acknowledgment

We are grateful to SCCWRP personnel for providing information on which Appendix A is based. In particular, we thank Willard Bascom (SCCWRP Director), Bruce Thompson, and Terry Hendricks for their assistance.

APPENDIX B

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Attended March 4-5, 1982 meeting
* Attended July 19-20, 1982 meeting

Mr. STANGELAND. Thank you, Mr. Chairman.

Mr. ROE. Just two quick questions.

One is the quantitative amount of sludge involved. Do you know that?

Mr. HOLT. I would ask Mr. Sylvester to respond to that.

Mr. SYLVESTER. It would amount to about 150 dry tons per day.

Mr. ROE. What do you mean on page 2 of your testimony, about the middle of the page, "One option we have explored with considerable interest is that using a pipeline to take a preconditioned, non-toxic sludge—" what do you mean by "preconditioned"?

Mr. HOLT. Chairman Roe, the word "preconditioned" has yet to be defined and possibly Dr. Segar could explain just what course we are taking to define that.

Dr. SEGAR. One of the principal questions to be answered if sludge disposal is going to take place in the ocean is, just what is the appropriate treatment to be applied to the sludge to minimize any environmental effects that may be caused by that disposal of sludge.

One of the primary features of the research program is the ability to change the conditioning of the sludge before it is discharged into the ocean. Now, for example, Congressman, I might point out that an aerobic digestion of the sludge completely changes the fundamental characteristics and therefore the extent to which the material would remain on the bottom after discharge from the pipeline.

Within the research program that was designed there is the capability built into it and the intention built into it to look at the discharge of different types of preconditioned sludge in the real world ocean environment. But prior to that time there will be laboratory studies of different types of sludge with different conditioning processes to try to assess what would be the appropriate preconditioning mechanisms before ocean disposal.

Mr. ROE. You are speaking of sludge emanating after secondary treatment?

Dr. SEGAR. That is right.

Mr. ROE. Primary, secondary, and then what to do with the sludge.

Dr. SEGAR. Right.

Mr. ROE. There are no other questions. Thank you for your testimony and we will give your testimony the deepest consideration.

Mr. HOLT. We appreciate the opportunity to appear before you, Mr. Chairman.

Mr. ROE. Thank you.

Our next witness, chief engineer, Mr. Charles Button of the Boston Water and Sewer Commission.

Mr. Button, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

PREPARED STATEMENT OF CHARLES BUTTON, BOSTON WATER AND SEWER COMMISSION

Good afternoon Mr. Chairman and members. Thank you for allowing me to speak before you today. My name is Charles Button and I am the Chief Engineer of the Boston Water and Sewer Commission, the agency which is responsible for providing water, sewerage, and drainage services for Boston. I am here to urge the extensions

of the Clean Water Act to allow agenices such ours to continue working to improve our sewerage systems and thereby the resultant improvement in our nation's waters.

Continued federal funding of the Construction Grants Program, as authorized in the Clean Water Act, is urgently needed by the Boston Water and Sewer Commission to continue and complete construction for major wastewater projects.

For several years the Commission has funded, on its own, a program to control discharge into Boston Harbor by cleaning, repairing and maintaining the tidegates and regulators. Presently a study is underway to evaluate alternative tidegate and regulator devices, which is expected to result in a $5,000,000--$10,000,000 construction program to minimize discharges to the Harbor and inflow into the sewer system.

Among the most critical projects in terms of water pollution control, scheduled for construction in 1983 and 1984, are three new interceptors designed to replace overloaded and obsolete sewers servicing downtown Boston, the waterfront, South End, and South Boston. The estimated cost of these construction projects is $22,500,000. These are projects which cannot go forward without help from the Construction Grant Program. In late 1984, the Commission will be ready to start construction of the final portion (Contract 4B) of the interceptor project at an estimated cost of $35,500,000 providing federal funds are available.

Continued sewer work in the South End is scheduled to take place in 1984 at an estimated cost of $18,700,000. Completion of the program in future years is expected to cost an additional $16,500,000.

The Commission is now half way through the preparation of a comprehensive facilities plan for the improvement of its wastewater system. This study has already demonstrated the need to conduct a Sewer System Evaluation Survey in parts of Roslindale, Hyde Park and West Roxbury at an estimated cost of $959,000. When the Facilities Plan is completed in 1984, it is expected to include a program of major system rehabilitation, construction of new sewers and reconstruction of a large pumping station, which we expect will require construction in excess of $25,000,000.

In Boston alone there are many projects underway or ready to start which would be jeopardized in the Clean Water Act were not extended and eligibility kept for sewers, combined sewer overflows, rehabilitation and inflow/infilitration correction. The levels of expenditure required are beyond the capacity of our Commission. We are not alone among major urban areas of our country in this regard.

I sincerely urge you to approve extension of the Clean Water Act and approve funding at the levels of $4 billion, $4.5 billion, and $5 billion through fiscal year 1988.

Thank you.

Mr. ROE. Please proceed.

TESTIMONY OF CHARLES BUTTON, CHIEF ENGINEER, BOSTON WATER AND SEWER COMMISSION

Mr. BUTTON. Thank you, Mr. Chairman.

Mr. ROE. I welcome you, Mr. Button, and I would like to defer to the distinguished gentleman from Massachusetts, Mr. Donnelly, to offer a formal welcome from our committee.

Mr. DONNELLY. Let me join the chairman of the committee in welcoming you here, Charlie. In behalf of myself and my staff, I appreciate the input you have had as we have gone through, and will be going through this process and other legislation that deals with water and sewer here in the Congress during this session.

Thank you, Mr. Chairman.

Mr. ROE. Thank you, Mr. Donnelly.

Go ahead, Mr. Button, you have the floor.

Mr. BUTTON. Thank you, Mr. Chairman.

Good afternoon, Mr. Chairman and members. I thank you very much for allowing me to speak here today.

I am Charles Button, and I am chief engineer with the Boston Water and Sewer Commission. That is the agency responsible for

provision of water service and sewer service and drainage within the city of Boston.

I am here to urge for extension of the Clean Water act to allow agencies such as ours to continue working to improve our sewer systems with the resulting improvement that comes to our Nation's waters.

I believe continuing full Federal funding of the construction grants program as authorized in the Clean Water Act is urgently needed by the Boston Water and Sewer Commission to continue and complete construction of major waste water projects.

For several years the commission has funded on its own a program to control discharges into Boston Harbor by cleaning, repairing and maintaining tide gates and regulators. Presently, a research project is under way to evaluate alternative tide gate regulators which we expect will result in construction in the area of $5 to $10 million to minimize discharges to the harbor and inflow into the sewer system.

Among the most critical projects in terms of water pollution control scheduled for construction in 1983 and 1984 are three new interceptors designed to replace overloaded and obsolete sewer systems serving the downtown area, the waterfront, the south end and south Boston. These are projects which cannot go forward without help from the construction grants program.

Continued work in the south end is scheduled to take place in 1984 at an estimated cost of $18 million. Completion of the program in future years in the area is antcipated to cost another $16.5 million.

Our commission is now halfway through a comprehensive facilities plan for the improvement of its waste water system. The study has already demonstrated the need to conduct sewer system evaluation surveys in many areas of the city. We estimate that to cost $959,000. When the facilities plan is completed in 1984, it is expected to include a program of major system rehabilitation, construction of new source, and reconstruction of a large pumping station which we will disconnect will require construction in excess of $25 million.

In Boston alone there are many projects under way or ready to start which would be jeopardized if the Clean Water Act were not extended, and eligibility kept for sewer systems, combined sewer overflows, rehabilitation, and an emphasis on inflow infiltration correction. The levels of expenditure required are beyond the capacity of our commission.

We are not alone among major urban areas of our country in this regard.

With that, I do very sincerely thank you for the opportunity to speak and I urge extension of the Clean Water Act and funding at the levels of $4, $4.5, $5, and $5.5 billion. I think it is absolutely essential to us and other agencies like ours in the country.

Mr. ROE. The gentleman from Massachusetts.

Mr. DONNELLY. Thank you, Mr. Chairman.

Mr. Button, earlier this week the mayor of Fall River testified to the committee objecting to EPA regulations that a specific fee be imposed on the users in their city before they would be eligible for EPA grants.

He believed that their existing system of setting aside x amount of dollars out of their broad property tax base was a better way to go. We used to do that in the city of Boston until I think 1977 when we established the sewer and water commission.

What is your opinion of having the specific set-aside user fee vis-a-vis allowing exceptions for municipalilties to fund their sewage systems out of a property tax base without mandating it be set aside?

Mr. BUTTON. Our experience, sir, has been that with the dedicated revenue stream we do have money available on a regular basis to do the work necessary to be done. The tide gate program is a good example.

In Massachusetts we have something called proposition 2½ which limits the amount of money which can be raised from local property taxes. It puts a restraint on municipal agencies to fund all the services which people expect of them. Sewer systems, unless there is a problem, and water systems, are not particularly visible and not particularly high priority items in competition with educational services, social services, police and fire protection.

Based upon what the priorities were in the city prior to the creation of Water and Sewer Comissions and what we are now able to do, I see a dedicated user system, which charges fees for water service on a metered basis and sewer service in conjunction with those, as being almost indispensible to carry out the work.

Mr. ROE. Would the gentleman hold at that point?

We will recess now for 10 minutes and go vote.

Mr. DONNELLY. Thank you, Mr. Chairman.

Mr. ROE. You don't mind, Mr. Button?

Mr. BUTTON. No, sir.

Mr. ROE. Thank you.

We will take 10 minutes and come right back.

[Recess.]

Mr. ROE. The subcommittee will resume its hearing.

When we broke up to go vote for that last amendment, the distinguished gentleman from Massachusetts was in a series of exchange of views with our witness. So if the gentleman would continue.

Mr. DONNELLY. Thank you, Mr. Chairman. My apologies for being late. I hope the city of Boston doesn't get stricken out of the bill now.

Mr. ROE. No, we discussed that before you got back.

Mr. DONNELLY. Continuing the questioning regarding the user fee, dedicated funds, so-called, do you have any idea how much we spent on sewer and water priority, the imposition of the user fee and establishment of the sewer and water commission versus what we expend today?

Mr. BUTTON. I do not have exact numbers available.

Last year, for example, our budget was $59 million. The user fee for sewer service prior to the creation of the Boston Water and Sewer Commission was a dollar a thousand cubic feet. Our fee now is over $5.40. We have collected and spent considerable amounts of money on the sewer system in the last few years.

The water system, the rates are about the same as they had been for water. We like to think that as the result of efficiency of oper-

ation, we were able to keep the water rate approximately the same. It—the water rate—has still allowed us to put more capital money into the ground in the past few years.

Mr. DONNELLY. Because of the age of Boston's system, are needs due to deterioration of old pipes or because of lack of capacity due to size?

Mr. BUTTON. There are a couple factors. A good deal of the system is 100 years old. As a consequence, it has suffered from aging as does any capital structure. But in addition to that, the demands put on the system have changed in that period of time. The population has grown considerably. Commercial-industrial applications have developed in the city which put a large demand on the systems.

Mr. DONNELLY. Where are we in terms of limiting and restraining the growth of pollution in Boston Harbor through sewer discharge and leakage.

Mr. BUTTON. Well, this summer and spring have seen a number of suits brought against the regulatory agencies in the State, the regional sewer authority and against us, alleging that because of overtaxed sewage treatment plants and sewer systems that there was a situation created in the harbor that required some very drastic actions with the threat of injunctions against building, a moratorium, and injunctions against connections of existing properties to the sewer system.

The State agencies and we and the courts are trying to work that out right now and there have not been those kinds of injunctions brought, but they are looming. They are there. The water and sewer commission, has begun construction on major interceptors to relieve the condition that existed in the old pipes.

We require that in any new building development the developers put in a holding tank for the sewage so they can discharge into the tank continuously during the day and pump out of the holding tank at off-peak hours so as not to aggravate the overloaded conditions.

We saw this as a reasonable compromise between allowing a discharge into the pipes which we know would overflow in certain periods of the day versus the other extreme.

Mr. DONNELLY. How much money did you receive from the Federal Government last year?

Mr. BUTTON. We have three construction jobs right now under way. One job was 2.5 million, another job was 6 million, another job about to go to construction now is an $18 million job. We have been given grants for 75 percent of that cost from EPA. The money is not all spent because of those jobs, one is completed, another one has a couple months to go, and the other one just now is getting rolling.

Mr. DONNELLY. How many do you have on the drawing boards, how many projects?

Mr. BUTTON. We had three projects fairly high on the State EPA priority list. The plans are done for them.

We have another project we are working on. We anticipate construction beginning next year. We have that work in the south end under design now. It is not long-range planning, because what we

have are plans that are there, ready to roll with construction. We have jobs under construction now.

We recognized the need and I believe the State and the local EPA does because our projects have been quite high in priority. Without augmentation of our ability to fund, they will not be completed, I do not believe. It will be extremely difficult for us to do that.

Mr. DONNELLY. Let me say in conclusion, I appreciate the fact that you came down here to testify. We look forward to working with you and other people in the Commonwealth to come up with legislation that will be fiscally responsible but also will deal with a national need and a national agenda need to improve the water quality and aquatic environment on the east coast, west coast, and throughout America.

Thank you.

Mr. ROE. I thank the gentleman.

Let me ask you, you spoke about obviously the necessary funding to be able to complete your work, among other issues. What is your backlog in dollars to really put that system on a fully tight operating track?

Mr. BUTTON. We have to define projects right now in the order of $60 or $70 million.

We also have that facilities plan under way which we expect will find and develop more projects.

Mr. ROE. Does a $60 to $70 million amount include complete replacement of your combined sewer system?

Mr. BUTTON. No.

Mr. ROE. What part of your system is in the combined sewer aspect?

Mr. BUTTON. Geographically, it represents about 25 percent of the city, in terms of area of the city.

It is those areas which were developed before 1910 basically.

From 1910 on, separate sewer systems were built.

Mr. ROE. What would it cost to correct the combined sewer system?

Mr. BUTTON. In conjunction with the regional authority, which has undertaken studies of combined sewer overflow control in areas which are tributary to the treatment plants.

It is in the order of hundreds of millions of dollars. The program itself was site specific and detailed. In some areas it recommended new pipes and separation of the pipes. In other areas it was a system of insystem storage. In other areas it was combined sewer overflow treatment and discharge to receiving waters, that was quite specific.

Mr. ROE. In that study did they generate any information in the quantitative amount of material that runs out of the combined sewer as it relates to pollution characteristics in the Boston Harbor?

You discharge into Boston Harbor, don't you?

Mr. BUTTON. To the harbor and there are two rivers that come into the harbor.

Mr. ROE. It all comes into the harbor.

Mr. BUTTON. Yes.

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Mr. ROE. We fought that battle going back to 1970 and it is driving us bananas because we cannot seem to get any administration, doesn't matter which one, including EPA, to recognize if they are really going to do a job on pollution control they have to address the attention of the combined sewers; is that a correct statement?

Mr. BUTTON. Yes, sir, absolutely.

Mr. ROE. OK.

So to go through the drill of having you put in massive primary and secondary plants and every time you get a major rain we scour the sewers out and put it in the bay anyway. I wonder if an analysis has been made of that?

Mr. BUTTON. There has been in the study commissioned by the Metropolitan District Commission which is the regional sewer authority. It is comprised of 43 member towns; we are one of them.

We contribute and we pay for about a third of the sewage which comes from all those 43 towns. Their analysis took place over a period of approximately 3 years and they estimated that about 50 percent of BOD and suspended solids that came into the harbor in a year, came from what was left in the treatment plants discharge. The rest was combined sewer overflows.

Mr. ROE. From your technical view, and you are technically trained, that is a finite situation. You treated everything you could with primary and secondary treatment, and if you did that you would have a potential of close to 50 percent BOD demand because of the fact of combined sewer runoff, is that correct?

Mr. BUTTON. That is correct.

Mr. ROE. On the $60 to $70 million figure, how long a period—what are you receiving now in the city of Boston? From your priorities, how much do you get?

Mr. BUTTON. We have been fortunate in the last few years. Earlier this year the State came out with the priority list, there were hearings at the end of August and they are in the process of developing final lists that will be available on October 1. We had three projects in the top 10 for a total of $19 million out of the $65 million which came into Massachusetts, that is available for construction grants in Massachusetts.

Mr. ROE. What you are saying is if you could get that level for 4 or 5 years you would be able to clean up part of the backlog?

Mr. BUTTON. Absolutely.

Mr. ROE. At that level of funding?

Mr. BUTTON. At or above that level. We have more projects than there is money available for now, but there are other communities competing for the same funds, including the regionals.

Mr. ROE. The reason I ask, in our discussion with the folks from the city of New York they had a deficit of about $16 billion as I recall without the combined sewer situation. They figure it would take to the year 2020 before they could complete it if they got the level of funding now, giving rise to the matter that if we are going to get at this problem we have to put more funds in it. That is basically the issue; do you agree with that?

Mr. BUTTON. Yes, sir.

Mr. ROE. Should there be a way for older cities, that do have the problem of combined sewers, that there ought to be more flexibility for those to be cleaned up?

Mr. BUTTON. Well, I think so. As a matter of fact a few years ago the Commonwealth put together some information and came to the Congress to present that information. In addition to construction grants which were building the sewage treatment plants in the various communities; there was the defined need of the Boston Harbor area because of 350 years that people have been living there and contributing something to the harbor area. It is not something we just had come up overnight. It is a significant problem.

It is something we are trying to identify and point out in and of itself. The studies have indicated that approximately $2 billion in the greater Boston area for sewer work, treatment plant work, discharges, deep ocean discharges, sludge handling, and work on the combined sewer system is needed. The amount I spoke of, $60 to $70 million, is for the confined number of projects we could do in the next 6 years. Beyond that point we expect more work to be identified in the facilities plan and we do work that is not part of the construction grant program on local sewers and smaller things every year. There is millions of dollars of work that we do.

So it will never go away. It is something that I believe will continue. We are going to have to work on it for years to come. The original act was to attack a defined problem that was perceived around the country. It has been 10 years and I don't think the problem has gone away.

It is necessary now to focus on that for a few years, 5 or 10 years down the road, to get the problems under control where agencies can get a handle on them and manage them.

Mr. ROE. One thing, just for the record, one thing that is clear and concise is that unless you have adequate funding to be able to clean up the combined sewer problem. You are only dealing with 50 percent of the pollution control as far as Boston Harbor is concerned, or thereabouts?

Mr. BUTTON. That is correct.

Mr. ROE. Thank you.

I just wanted that for the record.

The gentlelady from Illinois.

Mrs. LYNN MARTIN. Thank you, Mr. Chairman.

You are aware that this chairman knows more about this subject than really anyone in the Congress. So that his concern is good news for Boston. You are also fortunate that Brian is here because I think he does a superb job. We are on opposite sides and I still tell you that.

Mr. ROE. I have that all carefully recorded, young lady.

Thank you for your generous comments. I want to thank you, Mr. Button, because you brought a clear picture to us and I thank our colleague Brian for inviting you here.

We would like to get more writings from you with a projection of what your needs are so we can factor that into our request for additional funding.

Thank you again.

Mr. BUTTON. Thank you very much.

Mr. ROE. Our next witness this afternoon represents the Illinois Department of Environmental Protection, Hon. Roger Kanerva, manager of environmental programs.

For the distinct honor of welcoming you to this distinguished committee, I would like to defer to the Congresslady from Illinois, Mrs. Lynn Martin.

Mrs. MARTIN. Thank you, Mr. Chairman.

For you, graciousness is usual but it is still appreciated from the Illinois Representative.

First a compliment to you, Roger. Staff tells me that the testimony and the evidence that you have given to the committee is not only the most extensive but the best laidout in terms of making the problems clear to us and you and whoever was responsible for that should be complimented.

I wonder if we can concentrate on a particular part of your testimony and that is that of pretreatment. I think we all accept that what we are interested in is what finally goes back to our streams and our rivers. How that is taken care of, though, is part of the Federal law.

Could you discuss briefly the pretreatment situation in Illinois and local programs with pretreatment and what the effects would be of changes for them.

Mr. ROE. Mr. Kanerva, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY

before

Subcommittee on Water Resources

Committee on Public Works and Transportation

U.S. House of Representatives

September 22, 1983

by

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Environmental Programs

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I thank the Subcommittee for scheduling this hearing to receive testimony for the purpose of considering the reauthorization of the Clean Water Act. My testimony is presented on behalf of the Illinois Environmental Protection Agency (Illinois EPA) and the State of Illinois. The Illinois EPA is responsible for administering the State's pollution control laws and regulations, and for working cooperatively with USEPA in implementing similar federal programs. My current

assignment with the Illinois EPA is to manage all media environmental programs, such as water, air and land pollution control and public water supplies plus several support functions such as laboratories and data processing.

Prior to this current assignment, I was the Manager of the Division of Water Pollution Control (DWPC) for the Illinois EPA from June, 1978 to May, 1981. The DWPC is responsible for all aspects of the State water pollution control program including water quality management planning, ambient monitoring and standards, construction grants, and permitting and enforcement. Prior to that time, I worked for nearly nine years with the Water Resources Administration of the Maryland Department of Natural Resources in various program management and technical capacities. My professional education is in watershed management with B.S. and M.S. degrees from the University of Arizona.

I view this round of reauthorization of the Clean Water Act to be as important as the original 1972 national initiative. The program is truly at a major crossroads; that is, both the institutional and technical framework of the program need careful examination. Let me explain.

In 1972, the Act set out to overcome the principal weaknesses in past efforts to control water pollution. Technology-based effluent requirements were emphasized over water quality-based requirements as a means of expediting both municipal and industrial cleanup. Strong centralized program management was emphasized over decentralized state program management as a means of establishing more uniformity and consistency in implementation and enforcement of the cleanup effort. These new strategies were effective and I, for one, can attest to the positive results that were achieved.

What must not be overlooked now, however, are the significant changes that the past decade has brought which, in turn, call for rethinking the strategy for the 80's. I would like to mention several key considerations in this regard:

- We now have an operating baseline of protection in place all over the country to ensure against gross insults to the waters of the nation. I would add that many of the discharge permits issued for industries were based upon "best professional judgement" evaluations rather than national categorical standards.

- State programs, in general, have been enhanced and greatly matured due to interaction with the national program.

- Enhanced accountability measures, such as citizen suits and public participation, stand watch over much of the operation of the program.

- Fiscal resources have largely become constrained to a program maintenance level.

- The demands have been steadily growing for water quality related justification for program decisions on treatment requirements, use of federal construction grants funds, and targeting of compliance activities.

Against this background, I would like to state the central theme for this testimony. Adequate concern for "GOOD GOVERNMENT" has gotten lost in the fracas these past ten years. As a state program manager, I can assertively report to you today that along with the good things I mentioned at the outset I also do a lot of dumb things as part of my role in the clean water program. I say this in partial reply to certain parties that choose to conveniently side-step this issue with simplistic political slogans about "clean water" versus "dirty water people". The rest of this testimony will address a number of major issues pending during this reauthorization with a view towards demonstrating that "good government" is not synonymous with "dirty water".

Life After BAT

There is no question that adequate toxics control is a problem which deserves further attention under the clean water program. In Illinois, we remain committed to the national policy expressed in Section 101(a)(3) of the Act which prohibits "...the discharge of toxic pollutants in toxic amounts..." On June 24, 1980, I testified before the Subcommittee on Oversight and Review of the House Public Works and Transportation Committee regarding control of toxic substances. At that time, I emphasized the programmatic and technical problems associated with singular pursuit of the "priority pollutant" strategy codified in the NRDC Consent Decree in 1976 and the Clean Water Act in 1977. I also stated that more emphasis should be placed upon biological toxicity assessment techniques which can serve as cost effective tools for addressing effluents containing complex mixtures of chemical substances.

I remain equally convinced today about the considerable shortcomings of a strategy relying entirely upon a list of chemical substances and related limits. In addition to the work I reported on in 1980, information we have obtained regarding NRDC-related requirements for submitting chemical data on "priority pollutants" reinforces this position. In Illinois, we have received and reviewed over 100 "second round" NPDES permit applications with results from some 358 samples. Fewer than 3 percent of the 34,600 plus analyses revealed organic compounds at levels greater than the analytical detection limits. An initial evaluation of this 3 percent group yielded some concern for less than 10 percent of the compounds detected. More importantly, without

some site-specific toxicity testing we have no way of responsibly assuring that chemicals not on the NRDC list are innocuous or that the overall "chemical soup" is not an environmental problem.

On the more positive side, I can report today that the Illinois EPA, in cooperation with Region V, USEPA, has developed and begun to implement a formal strategy (see Appendix A) for control of toxic pollutants from industrial discharges via the NPDES permit process. This strategy uses a balanced combination of chemical and biological techniques to evaluate toxicity of effluents and develop appropriate control programs. Fortunately, our water quality standards already cover the heavy metals, cyanide, phenols and a number of pesticides which aids in the review process. However, we have about reached the practical limit of what makes sense to regulate directly by numerical criteria in standards. We may add a few more chemical substances to our standards but cannot envision ever being able to expand the system to cover hundreds of individual chemical substances. The due process burden would be simply overwhelming. Thus, our strategy targets state resources on a facility-specific basis to address significant potential toxicity problems.

How does all this talk about toxics relate to the issue of "good government"? First of all, we are responsible for using our limited public funds as effectively as possible. In Illinois, we cannot, in good conscience, chase around after chemicals on an arbitrary national listing when we know that most toxicity problems tend to be facility and even individual discharge specific. Secondly, we feel confident that BPT/BAT

controls have or soon will resolve many concerns. Hence the need for a very selective and targeted follow-up effort to address the remaining questions or problems. And finally, we run the substantial risk of providing less overall net protection by scattering our program efforts over a fairly wide but likely irrelevant range of chemicals of possible concern.

Recommendation -- Congress should ensure that USEPA and the States have sufficient direction and flexibility to pursue a balanced attack on the toxics problem utilizing an appropriate mixture of chemical-specific techniques and toxicity assessment to address both human health and aquatic life concerns.

The Pretreatment Opportunity

In my view the debate over implementation of the federal pretreatment program has gotten way off the mark. In Illinois, we do not question the fact that some POTWs need an effective pretreatment program. In my 1980 testimony, I reported that most of our significant POTWs had adequate locally-based pretreatment programs in operation which were monitored via NPDES controls. At that time and until very recently, the federal pretreatment program was essentially non-operative due to the lack of categorical standards and complex difficulties with the program regulations (removal credits, combined waste stream formula, reporting and oversight requirements). I would also note that these regulations are a classic case of bureaucratic overkill from many perspectives.

The real issue with pretreatment in my book is "good government". If some locally-based programs are already achieving the intended results (protecting the treatment facility, receiving waters and sludge management), then why in these trying economic times should we abandon successful local programs for a more expensive, less workable federal program? In effect, those good faith POTWs that moved ahead on pretreatment years ago may now be penalized for their progressive action. On the other hand, the bad faith POTWs that did not spend the funds to develop and run a program to control their industries seem so much the better off for their delay.

Let me provde you with some specifics for Illinois (See Appendix B for details). We have about 754 POTWs with about 3,000 industrial facilities thought to be subject to the federal pretreatment regulations. For comparisons sake, that number of indirect dischargers is just about 20 percent greater than the entire population of direct dischargers currently regulated under the NPDES program.

Of the 754 POTWs, 84 POTWs receive effluent from about 73 percent of the indirect industrial dischargers, and, thus, have been the prime targets for our recent efforts on pretreatment. Based upon a phased screening approach, we have received program development data from most of these 84 POTWs. The following table presents an analysis of that information:

	Status of Programs	5 MGD and Over	Under 5 MGD	Total
1.	Significant POTWs for pretreatment.	41	43	84
2.	Preliminary State estimate of POTWs subject to federal program.	30	20	50

3.	Program submittal reviews completed by State.	22	20	42
4.	Number of POTWs reviewed subject to the federal program.	21	7	28
5.	Number of POTWs in 4. above that have existing local program.	19	5	24
6.	Number of POTWs in 5. above that have a good local program.	13	5	18

Thus, we have a situation in Illinois where about 75 percent of the federally related program submittals reviewed to date involve POTWs that have already been operating a good local pretreatment program for some time. Why then, I ask again, should the State of Illinois and these local jurisdictions be subject to the extra hassle and expense of converting to the federally designed, pretreatment program? (See Appendix B for more details.) We are especially frustrated by what we believe represents a clear contravention of the legislative history of the 1972 and 1977 Acts regarding recognition of the substantial investment in combined waste treatment in public systems. Whether it's popular to say or not, there is just no getting around the basic fact that the NPDES program for direct dischargers is simply not fully analagous to the POTW/indirect industrial discharger scenario.

Within the past few months, even a potentially more serious concern has developed with the federal pretreatment program. At the request of Senate Environment Committee staff, USEPA undertook a special project in May, 1983 to evaluate the local pretreatment programs of three major POTWs. One of the three was the Metropolitan Sanitary District of Greater Chicago. The main purpose was to conduct a preliminary

assessment of the degree to which these locally-based programs were "equivalent" to the federal program. While a short-fused study of this nature is fraught with difficulties, we came upon an alarming finding from this study. Based upon our review of the available information (see Appendix C for details), we concluded that implementation of the federal categorical standards and program regulations in lieu of MSDGC's current program could conceivably result in a net reduction in control requirements for industrial facilities at a substantially greater program cost for operations! This finding raises an entirely new spectre about imposing another "uniform" national program. It certainly makes good sense to impose the federal program on POTWs that have not already successfully gone ahead on their own. But it would not serve the environmental cause well to impose such a program on some POTWs where a backsliding effect could take place.

In response to the critics of providing a place in the clean water program for alternative local pretreatment systems, I would like to address several key concerns. First of all, the availability of alternative local programs could become a convenient excuse for further delay on the part of recalcitrant POTWs. This potential pitfall could be remedied by restricting the use of local programs to those already in existence and not providing an additional year or two for developing an alternative local program. Secondly, such alternative local programs should also be subject to re-evaluation after all the applicable federal categorical standards are promulgated to ensure that the intent of "equivalency" has been satisfied. Finally, care should be taken to

ensure that "POTW shopping" does not take place on the part of less progressive industries pushing for more lenient local standards. This potential problem could be addressed by requiring all new industrial sources tributary to POTWs to meet federal pretreatment standards for new sources. In effect, such a requirement would provide for a gradual, phased conversion from current locally-based limits to federal limitations where appropriate to do so.

Returning to my "good government" theme, the Illinois EPA wants to maximize the environmental protection which can reasonably be achieved given the expected program resource constraints. Bluntly put, the water pollution control program in Illinois will be set back if the federal pretreatment program is pushed forward in its current form. We currently commit about 57 work years at a direct cost of almost $1.5 million per year for operation of the NPDES program (including pretreatment activities). We estimate that the level of State effort and resource requirements could nearly double if it becomes necessary to run the current federal program to the letter of the regulations. Obviously, these kind of additional resources (state or federal funds) are just not in the cards.

So we are faced with the Faustian choice of cutting back on our regulation of direct dischargers to free-up resources for pretreatment or running a really dog-faced version of the federal program just to play along. Such a choice is even more inane given the proven track record of many local POTW's in Illinois regarding adequately controlling their industries. We have also learned a very hard lesson from the first round of delegation of the NPDES program. When asked to do seemingly impossible tasks with insufficient resources, government is being set-up to look like buffoons by second guessors who harp away from the sidelines.

We can, however, maintain good program momemtum and not lose ground in Illinois if we can rely on the majority of our POTWs to continue to operate alternative local programs without the burdensome and excessive reporting and oversight called for in the federal regulations. The Illinois EPA also stands ready to aggressively pursue the imposition of the federal program for those remaining POTWs that have not been progressive in regulating their industries.

Recommendation -- The national pretreatment control program should be improved to ensure adequate protection of POTW operation and the environment (effluent, water quality and sludge). Maximum progress should be achieved by providing for the following:

- Approval by the State and/or USEPA of existing, fully operational and enforceable alternative local pretreatment programs of sufficient caliber to satisfy the requirements of the CWA and provide adequate protection of treatment facilities, sludge and receiving waters.

- Implementation, by date certain, of federal pretreatment program and national categorical standards in those instances where alternative local programs have not already been provided and approved by the State and/or USEPA or are not appropriate for the circumstances.

- Require new indirect industrial dischargers to, at least, comply with federal pretreatment requirements for new sources whether the POTW operates an approved alternative local program or the federal pretreatment program.

- Continue efforts to reform, where applicable, the federal pretreatment program so as to improve effectiveness and efficiency.

- Enhance methods and procedures for assessment of toxicity relating to POTW discharges.

(Note -- This recommendation is similar to the position adopted by ASIWPCA at the Annual Conference in August, 1983.)

The Challenge of Nonpoint Sources

I support a renewed national emphasis on the need for nonpoint source pollution control. In Illinois, there is definitely a demonstrated need for a cost-effective mix of point and nonpoint source control measures in order to achieve water quality management goals. I welcome reasonable and fiscally responsible enhancements of the nonpoint source program since the timing is ripe for a meaningful demonstration of national commitment to this aspect of the clean water program. I feel confident we have gained very valuable understanding of our nonpoint problems via the original 208 planning process. Further, we have already moved forward at the State and local level to advance from planning to modest but steady implementation of some aspects of the nonpoint source control program especially in the agricultural area. The Illinois Department of Agriculture and the local Soil and Water Conservation Districts are taking the lead role for addressing soil erosion control and other related problems. The Illinois EPA and the Illinois DOA have jointly expressed their support for more emphasis on nonpoint source controls. Appendix D presents a summary of the water quality planning process in Illinois.

Recommendations

1. Use of State WQM Plans -- New legislation for control of nonpoint sources should constructively build upon the base provided by certified and approved WQM Plans developed by the States pursuant to Section 208. Proper recognition and use of these plans can

greatly expedite the process of implementing nonpoint source control in those States that successfully complied with the original planning provisions of the Clean Water Act.

2. Mandatory requirements for implementation programs -- There is a strong argument for approaching the implementation of nonpoint source control programs in a phased fashion. Based upon our experience with previous planning efforts, there is a wide diversity of State and local approaches to nonpoint source management in terms of types of problems addressed, nature of control strategies (voluntary versus regulatory), and degree of funding support. In view of this range and variability, a new national initiative should be focused upon incentives, such as funding assistance for on-the-ground projects or even funding for established regulatory programs, as a logical first phase. These incentives could serve as a practical tool for generating the vital initial momentum for enhanced State and local attention on nonpoint source management and still provide valuable time for sorting out more long range program directions and strategies. Following this phase, USEPA, in concert with the States would be better positioned to fine-tune the overall nonpoint program including taking steps towards more extensive mandatory requirements where shown to be necessary. Such a phased approach would also coordinate more effectively with the final evaluation of the several pilot national progams under Section 208 such as the National Urban Runoff Program.

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3. Funding assistance for implementation -- Such assistance can have a positive impact at this time. I would stress that practices and projects, technical assistance and education activities should all be considered as viable candidates for federal cost-sharing funds. We have been consistently pleased with the very positive results which can be achieved by providing for hands-on assistance in the agricultural arena. With respect to practices and projects, there are existing gaps in total coverage relating to other national programs (SCS, ASCS, etc.) for which new cost-sharing funds would result in direct benefits for water quality in Illinois. I mention "steep" slope, marginal farm lands as one example. Some consideration should also be given to gradual phase-in of the authorizations/appropriations for assistance to account for program start-up time, etc. Along these lines, I feel that hard lessons learned from the federal wastewater construction grants program are relevant to the nonpoint program as well.

4. USEPA oversight and review -- In my experience, USEPA was often placed in very difficult policy and technical positions under the original provisions of Section 208 of the Act. Whereas the point source program usually involved rather well defined and traditional intergovernmental relationships and control mechanisms, the nonpoint source planning effort often addressed a whole new array of such relationships and related technical issues. I believe the sudden imposition of any new mandatory program for nonpoint sources with broad review discretion for USEPA could lead to a very chaotic,

inconsistent pattern of decisions and program results. In other words, the "rules of the road" for nonpoint sources are so ill-defined at this point that sound reasoning cries out for some application of the general principles of "reasonable further progress" under workable timeframes. I greatly fear that to do otherwise will subject USEPA and probably the States as well to unwarranted, post-audit condemnation for failure to achieve what was undoable from the onset.

Progress on Construction Grants

I could attest today at length on the documented need in Illinois to continue support for the construction grants program. However, I mainly want to address on this occasion possible criticism which may be forthcoming regarding obligation rates for funds which have already been appropriated.

The 1981 Amendments to the Act resulted in numerous significant changes to the federal construction grants program. We, in Illinois, remain grateful to the Congress, and especially this Subcommittee, for their very constructive resolution of some very difficult issues. Those legislative actions, in turn, prompted major revision of the USEPA regulations for the grants program. These regulatory changes have yet to be finalzied. In fact, a number of very important policy issues, such as project phasing and segmentation and replacement and additions, are currently being handled by USEPA (and the States) on a case-by-case basis.

As line program managers, state administrators have seen several rounds of changes in the grants program. As much as we would like to prevent it from happening, delays in timely processing of projects are inevitable under such circumstances. Fortunately, for many of us the project backlog is such that once the program adjustments become operational we can quickly catch-up on obligations. In Illinois, we currently or soon will have ready about $200 million in backlogged projects beyond the level of authorized funds available over the next two years.

One important caveat that may further constrain the program involves any further undue delay in the redefinition of secondary treatment and finalization of the federal water quality standards regulations. Both of these issues need to be resolved in order to make any necessary refinements in treatment requirements for some POTWs.

I would, therefore, respectfully counsel the Subcommittee to take a long hard look at any negative comments about the management of the grants program now that the majority of States have accepted delegation under 205(g). I am proud of our record of achievement over the past five years since we became the first State in the nation to receive delegation of the federal program. With the assistance of Region V, USEPA and progressive grantees, we have managed to keep the program moving irrespective of the many complications such as advanced treatment reviews, innovative and alternative funding set-aside and fluctuating funding levels.

Recommendation -- Congress should continue to support the authorization and appropriation of federal construction grants assistance.

The Water Quality Standards Debate

Clearly, the USEPA got off the main track with their proposed reforms of the water quality standards regulations last Fall. In Illinois, we found the new "cost/benefit" provisions particularly troublesome. However, in our submission of written comments on the proposal we were not overly critical of the USEPA's efforts since, on balance, we sensed a new spirit of cooperation and, thus, felt we could work with most of their new concepts.

I would note that we did not share the same degree of concern that many others expressed that the proposal was a move to "gut" the fishable/swimmable goals of the Act by allowing massive downgrading of State use designations. For several years, we have been working intensively on developing more site-specific use designations and water quality criteria. Through these extensive analytical efforts, we have concluded that application of "attainability analyses" will not result in significant down-gradings of use designations. However, we can sympathize with the concerns of some interest groups which fear the misuse of increased flexibility at the State and local level. Of course, their seeming interest in maintaining past use designations, practically at any cost, presumes that the often hurried efforts under standards promulgation actions in the early to mid 70s remains valid today. I suggest to you that this is a very big presumption in some instances particularly now that the complexity of environmental problems is better understood.

It is my understanding that USEPA is now committed to revising the proposed standards reforms in a fashion that is more compatible with previous views of the standards setting process. In fact, I have reviewed their new proposal and feel generally comfortable that the problem areas have been constructively addressed. Thus, in view of this responsiveness by USEPA it would appear that new legislative initiatives on use designations, anti-degradation policy, etc. are not warranted at this time; especially if such action would serve to make the standards process too rigid. In other words, concern for "good government" would not be well served by reacting in kind legislatively to the regulatory miscues of last year.

Recommendation -- Congress should maintain the current provisions of Section 303 of the Clean Water Act relating to water quality standards.

General Program Operations

Given the addition of new sources of federal funding for program operations, such as 205(j) in FY83, the water pollution control program in Illinois has been maintained at a stable level. Assuming that federal funding, especially Section 106 support, is maintained at current levels, we project that our program will not lose ground through FY85. Of course, that leaves matters of program expansion for initiatives such as pretreatment left hanging for the near term.

In general, I remain optimistic about eventually realizing the potential for effective operation of the federal/state partnership envisioned under the Clean Water Act. The 205(g) delegation of the federal construction grants program has served as an excellent example of significant progress in that regard. I cannot report the same degree of

improvement in the NPDES program. The federal regulations for NPDES still hamstring the USEPA Regions and the States in terms of reducing the amount of excessive oversight and reporting required. Greater emphasis on "good government" would call for more recognition of the advances in program management and capability that have been achieved over the past ten years. Along these same lines, I feel that several reforms of the Act as well (ten year permits and partial delegation of NPDES) would improve the overall efficiency of the program.

One bright note about the NPDES program has been the slow but steady development of the general permits option for small, non-problem types of dischargers. Based upon my discussions with other state administrators, many states have been able to take advantage of this practical approach to managing the NPDES permit workload. In Illinois, we have run into some legal complications which have taken awhile to sort out, but we believe that we can make good use of this tool in the near future.

Recommendation -- Congress and USEPA should implement positive reforms which will further streamline program operations for NPDES.

Conclusion

The new national clean water program was started in 1972 in a general mood of distrust by most of the key players. States were viewed largely as not having delivered the bacon, so to speak, and were relegated to a secondary role. The industrial/business community was cautious about unfair competitive advantages and excessively demanding program goals and requirements. Environmental groups were not very comfortable with

government performance in general and thus supportive of rigorous deadlines and detailed legislative specifications for all aspects of the program. Of course, the ensuing program has seen a dynamic and often artful compromise among these interests which has resulted in demonstrable progress. However, I respectfully suggest that we have come to a point where this octopus like tug-of-war needs to be reconsidered in light of a concern for "good government."

I think there is a place now for a reasonable measure of trust among the principal movers of the national clean water program. Economic conditions are mandating that we somehow do more with less, but to date responsible reforms have not kept pace with the demands. I feel the duty, at this time, to sound a warning that a significant shortfall in meeting the colage of expectations placed upon the program is just around the corner unless positive action is taken.

In Illinois, we will certainly commit to doing our fair share towards achievement of the public's desires for clean water. However, we are going to need some help from the national policy-making level if another round of self-fulfilling prophicies about the inadequacies of public administration is to be prevented.

RAK:rd/sp8136C/1-20

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST
CHICAGO, ILLINOIS 60604

DEC 10 1982

RECEIVED

REPLY TO ATTENTION OF
5WQP-26

DEC 16 1982

Environmental Protection Agency
Division of Water Pollution Control
State of Illinois

Mr. Eugene F. Seebald
Manager, Division of Water
Pollution Control
Illinois Environmental
Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Gene:

We have examined the revised "Illinois EPA - Procedures for Industrial NPDES Permit Issuance" sent to me by you on December 3, 1982, for our review. The short turnaround time in the revision of the document by you and your staff is greatly appreciated. The document, as revised, is acceptable and should result in permits that adequately address the control of toxicants.

Now that our concerns have been satisfied and we are in agreement as to procedures and strategy, I look forward to a continued cooperative effort by our staffs in the issuance of NPDES permits in the State of Illinois. I, as you, am most anxious that the program move forward and assure you of my personal commitment to that effort.

Very truly yours,

Ken

Kenneth A. Fenner, Chief
Water Quality Branch

cc: Tom McSwiggin, IEPA
Larry Eastep, IEPA

Illinois Environmental Protection Agency 2200 Churchill Road, Springfield, IL 62706

217/782-0610

December 3, 1982

Mr. Ken Fenner, Chief (5 WQP-26)
Water Quality Branch
USEPA
230 South Dearborn Street
Chicago, Illinois 60604

Dear Mr. Fenner:

In response to our recent meeting and your letter of November 15, 1982, we have revised our proposal for the "Illinois EPA - Procedures for Industrial NPDES Permit Issuance". We have made numerous changes to accommodate our agreement, and we feel the document fulfills our mutual intentions.

I and my staff appreciate your cooperation in drafting this proposal, and await your comments and approval so that permit issuance may proceed.

Sincerely,

Eugene F. Seebald, P.E., Manager
Division of Water Pollution Control

EFS:LWE:dks:sp/4880c, 20

cc: RAK
EFS
TGM
LWE

Illinois EPA - Procedures for Industrial NPDES Permit Issuance

The purpose of this document is to describe the administrative and technical procedures IEPA will use in the next round of industrial NPDES permit issuance. Emphasis of this strategy will be on the control of toxic substances.

Background

Illinois has, for the past decade, controlled the discharge of toxic substances, (principally heavy metals) through State law and regulation. However, there have been, and are, on-going changes to Illinois law, which directly affect NPDES permits. In addition to Illinois law and regulations, the IEPA will, of course, be utilizing Federal regulations for permit writing. Since State and Federal laws do not cover all situations, IEPA will exercise its best professional judgement in applicable cases. In order to provide better insight and clarification, a brief discussion of the elements affecting NPDES permit writing is presented.

A. Title 35, Subtitle C, Chapter 1, Parts 301 through 312 (hereafter Chapter 3). The basis in State law for most water pollution control regulations is contained in Chapter 3. It contains not only effluent limitations for deoxygenating waste, ammonia, and several toxic substances (i.e., heavy metals, cyanide, and phenols), but contains water quality limitations as well. Chapter 3 was promulgated in 1972, and has been revised several times since, most notably being in December of 1981, when the effluent limitations for several heavy metals, and phenols, were

revised. These limitations are technology based and uniformly apply to all dischargers as opposed to Federally promulgated limitations which apply to only specific industries. The Chapter 3 limits then cannot be compared directly to Federal guidelines. However, a comparison of Chapter 3 with many proposed and final Federal limitations shows that the technology requirements are essentially the same. In some instances the Chapter 3 numerical limit may be more stringent and in others less stringent.

Permits written by IEPA prior to December, 1981 contained the original numerical limits of Chapter 3. However, because of the December, 1981 changes, permits written in the future will contain the revised limits. Any existing limits will only be revised, however, in accordance with the Chapter 3.

In addition to effluent limitations, Chapter 3 establishes water quality criteria for general use, restricted use, and public water supply uses in Illinois waters. These criteria provide limits for many toxic heavy metals, cyanide, phenols, and substances which exhibit acute toxicity. These criteria are in the process of being evaluated and may be revised on a basin-by-basin segment to more accurately reflect actual uses, existing water quality, attainability, in stream biological activity etc. (see paragraph C).

B. <u>The Clean Water Act and Federally Promulgated Effluent Guidelines.</u> The NPDES permit program is based on, and assumes, the development by USEPA of national guidelines representing best practicable control technology (BPT), and best available technology economically achievable

(BAT). Development of BAT Guidelines for thirty-four industrial categories are to be the principal tool in controlling toxic substances through NPDES permits. These guidelines were to have been promulgated by 1980, but because of the considerable resource requirements, only eight of the thirty-four have been promulgated to date. Thus, without these guidelines, most of the industrial permits, while still continuing in effect, have been allowed to expire.

The Clean Water Act does provide another mechanism for establishing site-specific, technology based BAT limitations -- the use of best professional judgement (BPJ). The major drawback to this effort though, is the enormous resource requirement to draft BPJ permits on a case-by-case basis. IEPA has, in many cases, the technical expertise to utilize BPJ, however, it is felt that to be resource efficient BPJ would only be used in selected instances where truly needed.

In a few situations, effluent limitations more stringent than those required by existing BAT guidelines may be required to insure compliance with Illinois Water Quality Standards which generally prohibit creation of toxic or otherwise hazardous conditions in waters of the State. Such effluent limitations are not dependent on the availability of promulgated BAT guidelines and can be developed on a priority basis using toxicity data (or site-specific studies) and treatability information.

A lot of the problems of the past few years are being gradually eliminated by the anticipated promulgation of BAT guidelines in the next year or so. With the promulgation of BAT guidelines, IEPA will be able to effectively plan and schedule permit issuance, and efficiently utilize BPJ, where necessary, in conjunction with BAT in drafting permits.

C. Water Quality Standards -- Revisions

The standards review and revision process now underway in Illinois is intended to adapt the numerical and narrative parameter limits in the existing general standards to segment-specific applications. By assessing the existing and potential uses of individual stream segments and stream habitat, and revising water quality standards where necessary to reflect demonstrated levels of protection, we feel we are better able to tailor the standard to the needs of the segments.

The key to this review effort is the utilization of historical data (both chemical and biological) in conjunction with short term intensive surveys of major river basins. Detailed understanding of the conditions of the aquatic community in a given segment over time coupled with comprehensive water quality, fish flesh, and sediment data will identify potential water quality use limitations. Data on water quality in "control" areas and literature information indicates needed pollutant reductions, and information on discharge levels from contributing sources of pollution (point and non-point) support decisions on appropriate control programs.

D. Definition and significance of "toxic pollutants". As defined in the CWA, Section 502(13) . . . "The term "toxic pollutant" means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological

malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring."

As part of the 1977 consent decree with NRDC the USEPA used this definition to develop a list of sixty-five specific compounds and classes of compounds (subsequently expanded to 126 specific substances) -- priority pollutants -- which would receive the focus of national attention.

However, one of the major drawbacks of prior and current efforts has been the focusing on a limited (126) number of toxic compounds, since this ignores many other possibly toxic compounds contributed to the environment, and the cumulative effects of those compounds. If a toxics strategy is going to succeeed it will have to recognize the existence of problems caused by other than a "priority pollutant list" and the cumulative effects of two or more of these compounds.

A limited number of facilities with a high potential for toxicant discharge are being examined for the presence of pollutants of concern using open-ended procedures. IEPA or the dischargers themselves perform broad-scan chemical analyses by GC-MS or specific analyses for selected chemicals identified through evaluation of raw materials, products, and processes. Pollutants determined to be present at significant levels then are investigated for toxicity or other harmful environmental effects.

Illinois Water Quality Standards, Section 302.210, state: "Any substance toxic to aquatic life shall not exceed one-tenth of the 96-hour median tolerance limit (96-hour TLM) for native fish or essential fish food organisms, except for USEPA registered pesticides . . .". Section 302.410, applicable to Secondary Contact and Indigenous Aquatic Life

Streams state: "Any substance toxic to aquatic life not listed in Section 302.407 shall not exceed one-half of the 96-hour median tolerance limit (96-hour TLM) for native fish or essential fish food organisms."

These Standards provide a firm basis for requiring acute toxicity tests of dischargers where acute toxicity is suspected or has been documented in the receiving waters.

A number of previous studies have demonstrated that most types of industrial wastes being treated to at least "BPT" levels do not generally demonstrate "acute" toxic effects. Therefore, short-term static testing for acute toxicity is not viewed as a routine day-to-day tool for toxics evaluation. The IEPA will require these procedures where site specific conditions dictate their use. IEPA is also proposing, as a screening procedure, for those cases where it is applicable, the use of a modification of the Ames assay to identify potential chronic and mutagenic effects. If any assay results are positive, then the IEPA will either go to further Ames testing or other appropriate forms of testing (such as fish flesh analyses, stream surveys, longer term toxicity testing, etc.), or both. In recognizing that there are numerous studies that have been conducted and are ongoing, the IEPA continues its efforts to evaluate the literature, and to consider procedures it deems appropriate for application in Illinois. This effort will offer the IEPA and the USEPA better opportunity to coordinate the monitoring activities of both Agencies.

E. Relationship of the current "major discharger" concept with priorities under this toxics implementation strategy.

Because of the unique manner in which this strategy is proceeding, the concept of a "major" discharger does not appear to be applicable. Since both agencies (USEPA and IEPA) are dealing with many of unknowns and much information gathering, it is difficult to assign the commitment inherent in the previously defined "major" discharger designation. Rather, for permit writing purposes, the IEPA Permits Section will commit to the procedures outlined in this document regardless of whether or not those high priority dischargers outlined are designated "major". After the permits have been written, if any dischargers became apparent candidates for further compliance commitments, then the annual "majors" list negotiations can handle these dischargers. It is not anticipated that the number of "major" industrial facilities will increase as a result of this strategy.

Program Integration for Toxics Control

The drafting of NPDES permits for significant industrial dischargers will not be the sole effort of permit writers but rather will represent a coordination of the efforts of many programs within the Agency. Within the Division of Water Pollution Control (DWPC), it is expected that the activities of the Planning Section's ambient monitoring program and the Field Operations Section will play a significant role in support for permit writing. At the Agency level there is presently an ongoing coordinated review of permit applications (CROPA) among the permits sections of all divisions, and finally, it is expected that general

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toxics policy will be ultimately provided by the Agency's multi-media toxics strategy team.

As part of the industrial strategy, any findings of the ambient monitoring program,[1] that indicate a problem related to toxic wastes, will be integrated into other permit writing efforts and field operations activities. As has occurred in the past, any serious or significant problem areas will be addressed with possibly additional monitoring or special studies. For dischargers where water quality impacts could be suspected, permits would be drafted (or modified) to include effluent toxicity evaluations using a variety of necessary, appropriate biological and chemical tests, and upstream and downstream water quality monitoring. These permits would have appropriate reopener clauses to allow IEPA to modify the permit, as necessary, to reflect the results of the evaluations. The relationship of the ambient monitoring program with other activities, (i.e. permit writing) will be a two-way effort in that suspect situations identified elsewhere could trigger special ambient monitoring (as resources allow).

Specifically, some of the various field activities such as benthic analyses or complete scan fish flesh analyses will be factored into permit writing activities. Other commitments notwithstanding, special water quality intensive surveys, apart from those associated with the

(1)As discussed in the FY82 program plan . . . Ambient Monitoring -- Water quality monitoring involves activities conducted by the state directly or by agreements with other agencies to obtain data on the quality of waters of the state. Water quality monitoring activities conducted directly by the IEPA include fixed station monitoring and intensive surveys, lake surveys, and special investigations.

basic surveys, may be selected from the same priority list that drives permit writing activities. As results become available, they would become part of our actual literature resources, and part of the permit record. Conversely, ongoing commitments by the Ambient Monitoring Unit, such as the intensive survey of the Sangamon River may drive permit writing activities by virtue of the fact that this data willl be available sooner.

Several situations occur in the "real world" field that never show up on any applications, or on any inspection forms. Situations such as sloppy internal maintenance practices, storage of raw materials or solid wastes, process operations which periodically affect treatment works operation, etc., occur all too frequently. The field staff of the IEPA are equipped to deal with these situations, but present resources are committed to the point where these types of inspections are now limited.

The IEPA is proposing, as part of this strategy, that the field staff make inspections that will lead to more efficient treatment plant operation, and to the reduced likelihood of toxics entering the waste streams through plant process inspections, transfer and storage area inspections, BMP plan reviews, etc.

Permit Issuance Procedures

A. Categorization of Dischargers

In order to develop a manageable program it will be necessary to categorize permits by their relative potential to discharge toxics. Three categories are proposed:

1. Category I -- Industrial dischargers with a high potential for discharging toxic organics and possibly heavy metals and other inorganic

toxics. Justification for placing dischargers in this category will be based on general information, their application, development documents, IEPA and USEPA studies, and other relevant literature sources (i.e., treatability manuals, JWPCF, etc.). (See Appendix A). However, it is expected that the list will be refined in the future as individual applications get reviewed.

2. Category II -- Industrial dischargers with a potential for discharging only heavy metals and other toxics. This category will be based on general historical information and application data. These permits will be drafted based on existing State or Federal law and regulation.

3. Category III -- Industrial dischargers with little, if any, potential for discharging toxics. This category will generally include "secondary" industries, cooling water dischargers (non-contact), dischargers with only domestic wastes, etc. These permits will be drafted based on existing State or Federal law and regulation.

B. IEPA Procedures for Drafting and Issuing Industrial NPDES Permits Category I.

The following procedures will be employed in the development of permits for facilities known to have, or suspected of having, toxic or other significant pollutants in their discharges.

1. IEPA, in cooperation with USEPA, will develop a list of industrial facilities with known or suspected toxic pollutant discharges. This list will be known as the List of Significant Dischargers and will be updated annually as part of the 106 State Program Plan.

2. Upon completion of the list IEPA will prioritize the facilities on the list for permit issuance (i.e., assign projected public notice and issuance dates for a period of one year from the date the list is completed; assign a lead person for the processing of each scheduled permit; and update the projections at intervals of 3 months). A projection of the permits to be worked on for the next 3 months will be developed within 2 months of the date of this agreement. That projected list will be updated by the tenth of the following months: September, December, March, June. The projection will include target dates for development of a draft permit, date of public notice and date of final issuance. Because of the complexity in drafting these permits, slippage will occur in some instances. It is clearly understood that the projected dates are desirable targets and that strong efforts will be made to achieve these but they are not binding commitments.

3. The facilities to be included in the List of Significant Dischargers will be determined by available information, industrial categories that have a potential for discharging toxicants, information contained in completed Form 2C applications and any other indication that toxicants may be present.

4. For purposes of this strategy toxics are grouped into: (1) the contaminants for which effluent and water quality limits have been established in Chapter 3, and (2) toxic contaminants for which limits have not been established in Chapter 3.

5. In reissuing permits containing toxics in Group 1 --

contaminants for which effluent limits have been established in Chapter 3 -- the limits for those contaminants shall be established as follows:

(a) For existing dischargers the limits, as established by Chapter 3, will be utilized, unless more stringent effluent concentration limits have been promulgated by USEPA.

(b) For new discharges, the revised Chapter 3 limits or promulgated New Source Performance Standards will be applied.

6. The reissuance of permits on the List Significant Dischargers will occur as follows:

(a) Facilities on the list of significant dischargers with no potential for pollutants other than those covered under Chapter 3.

1. Issue 3-5 year (maximum) permits with limits based on Chapter 3 (as stated for Group 1 toxics) or Water Quality Standards, whichever are more stringent. Included will be a reopener clause, in case guidelines are promulgated and are more stringent. Five year permits would be issued where effluent guidelines have been promulgated.

2. The effluent limits in short term permits, upon expiration, will be evaluated against any changes in State or Federal laws and regulations, BAT guidelines, State effluent limitations, and water quality requirements. Promulgated BAT effluent limits will not cover all parameters of concern and, therefore, permits will be developed utilizing a hierarchy of available information. BPJ permit limits will be developed, as necessary.

(b) Facilities on the list of significant dischargers with known, or potential for, other toxics as well as Chapter 3 pollutants.

1. When sufficient information is available on potential toxic pollutants: develop BAT/BPJ controls, including limits wherever possible, for contaminants in Group 2, and Chapter 3 limits for contaminants in Group 1. Compare with Water Quality based determinations, and issue 5 year permits, with reopener clauses for Chapter 3 limitations. If promulgated guidelines exist, they will be used in place of BAT/BPJ for parameters covered.

2. When additional information is needed:

i) Issue permits with reopener clauses. For any polluants for which information is available, include limits developed as in b(1) above. For others, include information gathering requirements with results generally due in 3 to 12 months (with possible exceptions for long-term bioaccumulation studies or process evaluations at complex facilities).

ii) Where results of information-gathering warrant, use the new data to develop controls, including limits wherever possible, on additional parameters as in b(1), and modify permits to include them, deleting reopener clauses.

iii) Where conditions warrant, an information request pursuant to Section 308 of the Clean Water Act will be made. In some cases USEPA Region V, will initiate the 308 request.

7. Verification Monitoring

For those permits where verification monitoring (in the permit) is indicated, the Agency proposes to require anywhere from three to twelve or more samples be chemically analyzed for suspect toxics. The monitoring point could be at either the effluent discharge or, if appropriate at some "internal" location. The amount of monitoring will be determined on a case-by-case basis depending on relative likelihood of occurrence, expected levels of discharge, potential impact on water quality, etc. If levels are at or below "detectible levels," then monitoring may be discontinued with formal permission from IEPA. However, it must be recognized that for some highly toxic, bioaccumulative substances, such as PCB's and dioxins, the suspect contaminant must continue to be addressed. If levels can be quantified, but at levels much below "toxic" levels, then continued monitoring but at reduced frequencies will be in order. For discharges where levels are at, or above, the toxic range, then continued chemical monitoring, and possibly Agency or permittee biological monitoring will be in order. At this point the Agency will require the permittee to develop a program to identify and eliminate the source of toxic polluants. If this is a short term program, no permit modification may be necessary; however, if a long term program becomes necessary then a permit modification would be necessary.

The monitoring requirements will be placed in the permits as an ongoing requirement, but with a condition such that after a certain period of time (e.g., 3 months, 6 months, 12 months, etc.) the permittee would have to trigger a request for Agency review of the

data. Thus, monitoring would have to continue unless an Agency review authorized modification or elimination of the monitoring requirement.

For those permittees found to not have discharges of toxic polluants at levels of concern (either acute or chronic) the permits would be extended to 5 years.

However, for facilities found to have discharges of chemicals with the potential for bioaccumulation or acute or chronic toxicity the State, and/or where appropriate the discharger, will proceed with field biological screening and/or confirmation monitoring. Where necessary the discharger will be required to develop a program to eliminate any problem.

8. Biological Monitoring

While most of the biomonitoring in the near future will be done by the Agency, eventually we will want industry to assume this burden. When industry is required to conduct biomonitoring, it will be necessary for the Agency to identify and specify procedures and protocol for both the collection and analyses of biological data. IEPA and USEPA will jointly agree on the procedures and protocol to be followed, for each permit on a case by case basis.

In some instances it may be more advantageous to require biomonitoring outside of the context of the permit. Possible reasons for this include: 1) the timing of renewals; and 2) new information suggesting an immediate need for biomonitoring.

9. IEPA Field Support Activities in Support of Permit Writting -- Biological Screening and Confirmation Monitoring

As mentioned previously, several conditions occurring during the permit review could trigger IEPA field toxics evaluation. These evaluations could take on many different forms depending on the discharger's wastewater characteristics, water quality impacts, etc. The water quality studies conducted as part of the ambient monitoring program could serve as either a screening or a confirmation mechanism.

In addition, the IEPA proposes where necessary, to do Ames Assays and/or acute toxicity testing procedures for mutagenicity screening and toxicological evaluations of specific effluent discharges of facilities designated to be high potential toxicant dischargers. These would initially be screening mechanisms, however, if results proved positive, they could be repeated and expanded to confirm and quantify original results.

C. Procedures for issuing permits in Category II -- Industries with a potential for discharging only heavy metals and other inorganic toxics.

Industries are placed in this category based on information presently available. However, if during the application review process, any toxic organics are identified as being present then permit processing will proceed as though they were Category I dischargers. For those dischargers confirmed to have only heavy metals and conventional pollutants, permits will be drafted based on either promulgated federal guidelines (i.e., BAT or BCT), or State law, Chapter 3. Heavy metals limitations will be derived based on the same rational used for Category I dischargers. Limitations for conventional polluants will be based either on promulgated BCT or Chapter 3.

It is expected that in the near future, a priority list will be developed, however, because of resource constraints, it will not be possible to establish a firm schedule for issuance. The priorities will be established on the following basis:

1. New facilities or existing facilities with major construction projects resulting in increased or otherwise different flows,

2. As a result of Pollution Control Board enforcement or variance orders, and

3. Requests from the Field Operations Section.

Procedures for issuing permits in Category III -- Industrial Dischargers with little if any potential for discharging toxics.

As with Category II dischargers if toxics are found to be present permits will be processed in accordance with the procedures outlined for Category I. Otherwise, the basis for effluent limitations will be either Chapter 3, or promulgated BCT guidelines. Permits will be prioritized, (but not scheduled), in the same manner as Category II dischargers.

Permits in this category will be issued as resources allow. Reasonable efforts will be made to include the permits in this category as "fill ins" in the process of issuing Category I and II permits. As such, permits in Category III will be assigned to permit writers to be processed when time is available.

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"Proposed" Category I Dischargers
Appendix "A"

Permit Number	Permit Name	SIC Code	Expiration Date
Organic Chemicals			
IL0026069	Armak Co.	2869	01/31/79
IL0049697	Lonza, Inc.	2869	
IL0002917	Northern Petrochemical	2821	05/31/80
Plastics and Synthetics			
IL0000621	National Starch & Chem Corp.	2824	06/30/81
IL0001929	Borg-Warner Corp-Linmar Plt	2821	03/31/81
IL0003140	Minnesota Mining Mfg. Co.	2821	03/31/81
IL0001350	Borden Chemical	2824	08/31/81
IL0001619	Rexene Styrenics Co.	2821	10/01/78
IL0051977	Cargill, Inc.	2821	06/30/81
IL0001392	Goodrich, B.F. Chemical	2821	06/30/82
IL0002933	GAF — Joliet		07/31/82
IL0002330	Armstrong Cork -- Kankakee		11/30/83
Petroleum Refining			
IL0000205	Shell Oil Co-Wood River	2911	09/30/80
*IL0002305	Texaco Inc. Refinery-Lockport	2911	09/30/80
IL0002861	Mobil Oil Corp	2911	09/30/80
IL0004219	Texaco Inc. Refinery	2911	09/30/80
IL0001244	Clark Oil & Refinery Corp.	2911	09/30/80
IL0001589	Union Oil Co of California	2911	09/30/80
IL0004073	Marathon Oil Co-Robinson	2911	09/30/80
IL0000035	American Oil Co-Wood River	2911	09/30/80
Fertilizers			
IL0032182	Mobil Chemical Co. -- DePue	2874	03/31/81

*-NOTE- if the Texaco Lockport refinery is confirmed to be completely shut down, with no discharge, then this facility will be eliminated.

Permit Number	Permit Name	SIC Code	Expiration Date
Inorganic Chemicals			
IL0002453	Stepan Chemical-Ind Chem	2843	03/31/81
IL0001643	Amoco Chemicals Corp.	2819	03/31/81
IL0002020	Olin Corp-Blockston Works	2819	03/31/81
IL0004375	Cabot Corp.	2819	03/31/81
IL0004421	Allied Chemical Corp.	2819	05/31/80
IL0001767	Du Pont De Nemours E.I.	2819	12/31/78
Iron and Steel			
IL0000329	Granite City Steel Co.	3312	06/30/80
IL0002593	Republic Steel Corp	3312	09/30/80
IL0002101	Interlake Inc.-Chicago Furn.	3312	07/03/78
IL0002119	Interlake Inc-Riverdale Plnt	3316	09/30/80
IL0001309	Lemont Mfg. (CECO)	3312	07/01/78
Metal Finishing/Mechanical Products			
IL0000230	Olin Corp-East Alton	3351	06/30/81
IL0001732	Caterpillar Tractor, Joliet	3531	06/30/81
Miscellaneous			
IL0000141	U.S. Industrial Chemical Co.	4941	05/31/78
IL0004162	Peterson - Puritan	7399	06/30/82

*Joliet army ammunition plant only to be evaluated in this category if munitions production facilities are returned to production.

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APPENDIX B

The Federal Pretreatment Program

The goal of the U.S. Environmental Protection Agency's Federal Pretreatment Program is to protect municipal treatment plants (commonly called POTW's for publically owned treatment works) and the environment from the damage that may occur when hazardous or toxic wastes are discharged into a sewage system. This protection is achieved mainly by regulating non-domestic or indirect industrial dischargers. There are three major objectives in the pretreatment program:

1) Prevention of interference with POTW operation,

2) Prevention of pass-thru of pollutants, and

3) Prevention of municipal sludge contamination.

The program applies to any POTW with a total design flow greater than five million gallons per day and receiving industrial discharge, and certain POTWs under 5 MGD receiving industrial wastes. Under the 40 CFR 403 General Pretreatment Regulations published January 28, 1981, there are certain legal authorities, administrative tasks and procedural requirements to be achieved and developed by the POTW in the development of a local program, as follows:

Legal Authority: The POTW should have the authority to:

1) Deny or condition new or increased contributions of pollutants from the industrial users.

2) Require compliance with applicable Pretreatment Standards and Requirements (including categorical standards, State, and local limits).

3) Have control mechanisms (permit, contract, or order) to insure compliance.

4) Require compliance schedules from industry to install pretreatment equipment to meet standards.

5) Require industry to file reports (baseline, compliance, self-monitoring and final).

6) Have procedures for inspections, surveillance and monitoring.

7) Have legal remedies for violations.

8) Halt or prevent discharge which endangers environment or threatens to interfere with POTW operations.

9) Have confidentiality procedures.

10) Carry out administrative and procedural requirements of the pretreatment regulations, in addition to the publication of names of significant violators in the larget daily newspaper.

Administrative Tasks: The POTW should submit the following documents:

1) Industrial User (IU) survey.

2) Technical analysis which includes:

   a) Description of prior instances of interference with POTW operations that are known or suspected to have been caused by industrial contributions.
   b) Method of sludge disposal.
   c) Description of the nature and extent of POTW sampling program.
   d) Description of sampling program within treatment plant itself of the influent, effluent liquid, and sludge.
   e) Description of the development of local limits.
   f) Procedures for public noticing the development of local limits.
   g) Provisions for public comment.

3) Compliance monitoring

   a) Description of the procedures to be used in receiving, evaluating and filing baseline, compliance, self-monitoring (semi-annual), and final reports submitted by the IU.
   b) Description of the monitoring program including scheduled, random, and demand monitoring.
   c) Description of the procedures used for follow-up of instances of non-compliance of above items.
   d) Description of chain-of-custody procedures.
   e) Description of equipment and personnel on hand.

4) Notification of IUs

   a) Procedures to keep POTW informed of new and existing regulations.
   b) Procedures to notify IUs of existing and new regulations and requirements.

5) Aministrative Procedures

   a) Procedures for IU non-compliance

      1) To notify IU of incident
      2) To provide IU opportunity to respond
      3) To allow time for POTW or IU to correct violations
      4) To allow time for POTW or IU to verify that violation has been corrected
      5) To take legal action thru show-cause hearing, injunctive relief, civil or criminal penalties, and damages.

b) Procedures to gather admissible information for court proceedings or enforcement actions.

6) Public Participation

a) Legal authority to publish names of significant violators in the area's largest newspaper.
b) Procedures to publish names.
c) Procedures to make data relevant to violations available to the public.
d) Procedures for giving public notice of the development of specific local limits.
e) Provisions for public comment.

7) Organization, Staffing and Funding

a) Description of POTW organization.
b) Description of other organizations involved.
c) Duties of staff and level-of-effort.
d) Most recent annual financial statement and projected first-year budget.
e) Itemization of pretreatment program costs.
f) Source of revenue.
g) List of major equipment to be used plus commercial services or alternative capabilities.

The POTW shall develop all the above items and submit a request for program approval as specified in the municipal NPDES permit. The program's main emphasis is treatment for treatment sake and all categorical indirect dischargers will be regulated irrespective of the treatment plant efficiency and removal.

State Pretreatment Program

In Illinois there are over 754 POTW's, and an estimated 15,000 to 20,000 industries with approximately 3,000 industries thought to be subject to the pretreatment regulations. At this time there are 84 POTW's required to develop at least a portion of the program. The 3,000 industries are located mainly in the 84 POTW's. Under the national program requirements, the State would still be responsible for wet categorical industries if they are located in the remaining 670 POTW's.

The Illinois EPA has recognized for some time, however, that while there are a number of problems with indirect discharging industries, the problems don't exist in every city with any industry. To their credit, a number of Illinois municipalities, both large and small, have had programs of some degree of effectiveness for some years.

Acknowledging the fact that there were local programs already, the Illinois EPA embarked on a State program which would reduce the scope and magnitude of the national program and make the most efficient use of its

limited resources. The State program has been directed towards the municipal side and identifying pretreatment problems, and then, only requiring that local programs be developed to deal with these problems.

The State program is divided into a two phased approach. Phase I consists of an industrial user survey, technical analysis and ordinance evaluation while Phase II includes the monitoring, financial, equipment and personnel needs, and finally the development of local limits if necessary. Much of the State program requires the items listed in national program above. The main difference is that the Phased approach would allow the POTW to initially submit the minimum information to create a data base. After State review and evaluation, a decision would be made on the need to continue with the program. This decision would be made on the results of the submission, a complete survey, plant O and M, pollutant levels in plant influent, effluent and sludge, and finally, the readiness to pick up the program if conditions changed.

Attention has been focused on satisfying the objectives of the pretreatment program - prevention of pass-through, prevention of plant upsets or interference, and interference with sludge disposal options. It was found that evaluating industrial impacts on pass-through and plant upsets was relatively straightforward because of a wealth of data from water quality and effluent monitoring, and plant operational history. However, there was not a comprehensive data base from which to evaluate the concentrations of heavy metals in sludge.

To correct this deficiency, the Illinois EPA initiated an influent, effluent, sludge sampling program of major POTW's across the State. This data was evaluated and "background" levels of heavy metals were calculated. The following conclusions were reached:

1) These background levels were not single, specific values due to the varying levels found in public water supplies (i.e. ground or surface waters), varying types of plumbing materials, presence of combined sewers, infiltration of groundwater into sewers, different types of treatment systems, varying treatment efficiencies, etc.

2) The calculated levels were comparable to "typical domestic only" values recently reported by the Journal of the Water Pollution Control Federation.

3) While perhaps over a hundred of the 160 POTW's analyzed had sludge with some metal contents above background, only thirty to forty may be in a position where sludge disposal options are seriously limited. These POTW's are using alternative methods for disposal of sludge other than land application. If they did want to alternate methods of disposal, they would need to develop more stringent numbers than federal limits, as was done by the Rockford Sanitary District.

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4) Recognizing the fact that there are somewhat definable background levels and there are some threshold effect levels, then for some POTW's no pretreatment for industries may be necessary, while for others pretreatment requirements will vary greatly. The implication of this conclusion is that categorical standards, on a national level, may not be a rational approach to satisfying the objectives of the pretreatment program.

An existing State program which ties into the sludge management objectives of the pretreatment program is the sludge management program and specifically the IEPA Sludge Regulation Guidance Document. This program advises all sludge generators of the necessary Agency permits which are required. It outlines the principal categories of sludge generators and advises the generators of various disposal methods which are acceptable to the State. It also advises persons who store, haul, and treat sludge prior to final disposal of any required permits.

Other State regulations are included in Title 35: Environmental Protection Subtitle C: Water Pollution, Chapter 1. The USEPA in 1972 developed the National Pollutant Discharge Elimination System (NPDES) as mandated by PL 92-500. This program provided a benchmark to judge effectiveness of treatment process design to correct specific pollutional problems. The State of Illinois' implementation of this program began in October, 1977 and replaced the short term operating permit program developed shortly after the Illinois EPA's inception in 1970. The delegated NPDES permit establishes discharge limitations, including metals, and operational requirements tailored to the necessary stream within which a facility's wastewater treatment works discharge. Facilities unable to meet these requirements are placed on a schedule to achieve compliance. Strict enforcement of the permit provisions insures high level of Statewide compliance.

There are also criteria for sewer use. These State regulations, in effect since 1972, prohibit the discharge of the following wastes into a sewer:

a) Liquids, solids, or gases which may cause fire or explosion; may be injurious to sewers, treatment works, structures, or operation of treatment works; cause a safety hazard to treatment works personnel, or cause the treatment works effluent to violate applicable standards.
b) Solid or viscous wastes which obstruct flow in sewers or interfere with proper operation of sewers or treatment works.

The regulations also establish numerical limits for dischargers of mercury and cyanide to sewers.

In addition, State construction and operating permits are required for pretreatment facilities which will discharge greater than 15 percent of the POTW's load, or discharge toxic pollutants or pollutants which may

interfere with the POTW treatment process. Operating permits are required to be renewed every five years. The regulations also provide for the submission of operating reports to IEPA by permittees.

Authority and procedures for enforcement of the above requirements are contained in the State Environmental Protection Act. Routine field inspections are conducted at large on problem pretreatment facilities and indirect dischargers with no pretreatment. Facilities requiring permits are identified through field surveys and coordinated review of applications for air pollution, solid waste, or watermain extension permits. Compliance surveys at POTW's include, where possible, an evaluation of problems caused by industrial users.

Local Pretreatment Programs

Table 1 shows an evaluation of POTW's over 5 MGD flow with the number of categorical industries in each POTW, the number of industries currently monitored under the existing industrial user control program, whether the POTW has good industrial control, the percentage of industries monitored, and finally an assessment of the potential benefit of the federal program to improve local program control.

For 25 local jurisdictions representing about 2177 industrial sources, imposition of the federal model for pretreatment control would not result in any significant improvements in their existing local program. For 13 local jurisdictions representing about 364 industrial sources, imposition of the federal program would result in limited enhancement of their programs. Only one local jurisdiction representing 4 industrial sources stands to significantly benefit from use of the federal program. Thus, in Illinois we have a very positive situation in that nearly 86% of the industrial sources tributary to POTWs greater than 5 MGD are already being adequately controlled. The resource implications for state program efforts are obvious in terms of where additional emphasis is necessary.

A number of Illinois POTW's were further evaluated to determine the impact of the federal pretreatment program on their existing industrial waste control program. These POTW's were chosen based on their involvement in the development of a local program and their need, according to the regulations, to set up an approvable program. The results of the analysis are in Table 2.

These ten POTW's had from 0 to 1,500 categorical industries. The POTW's had either only a handfull of categorical industries or a large number. The ones with a few had no problems from the industries because the State requires pretreatment permits. The POTW's with a large number of industries all have very effective existing programs. In all the POTW's, the categorical industries which are to be monitored under the pretreatment program would be covered anyway by the existing monitoring program. The number of samples, visits or reports may increase, but the minimum requirement may still be met.

The methods of sludge disposal included storage on-site, landfilling, land application, and reclamation. Most POTW's had future projections toward land application. If this was a chosen option, then the IEPA would be directly involved with their sludge permits.

All POTW's carry out some treatment plant sampling. At a minimum there is sampling for NPDES permit requirements, sludge permit requirements and treatment process efficiency. This sampling includes both conventional pollutants and metals. The larger communities carried out organic anlayses with research-oriented sampling programs. It is also noted that the results of the sampling at the POTW's for organic and metals showed that these toxics were not showing up in the influent or effluent as verified also by the 40 POTW study done by USEPA.

Eight POTW's had metal limits in the existing ordinance. These limitation were based on State regulations or in-house data. One POTW had adopted State sewer use criteria for Hg, Cn, oil and grease. The other POTW which did not have any metal limits indicated in the lack of problems from industry for metal discharges and no categorical users. It was also very evident that the POTW's in the State required limits in the ordinance if there were problems from their industry but not if their users were minor or very small. Regarding the need to develop local limits, the treatment plant sampling showed that toxics were not being discharged and the conventional pollutants (BOD, SS, oil and grease) were limited according to the capability of the plant to treat. The program would probably not create additional or more stringent local limits unless a need was necessary, then this would have been done anyway.

Six POTW's had reporting requirements from industry, but usually only conventional pollutant analysis were required. In all cases, however, the POTW had the ordinance provisions to require reports and any type of sampling data from the industries.

Regarding industrial sampling, all the POTW's conducted some sort of visit to the IU, whether scheduled or random or both, and all facilities had the capability to conduct demand visits. Violations from reporting or sampling results were handled by the POTW's by set procedures, either directly written into the ordinance or at least provided by policy and procedures of the District. All facilities had chain-of-custody provisions and analysis of conventional metals, and organics were usually done in-house, while in some cases the orgainc portion was sent to a contract lab.

The POTW's were all very much aware of the regulations, however, notification procedures to inform IUs was usually not a standard operation, but facilities would informally let the IUs know of the upcoming developments as a courtesy.

All the POTW's had administrative procedures to deal with IU noncompliance based on the local ordinance. Three had policy requirements but even the policy was based on the ordinance provisions.

Only one facility had ordinance requirements to publish a list of significant violators. They, however, did not exercise this option. Most POTW's felt that this was not an effective method to deal with the industry. If there were violations of that significant nature, enforcement cases would have already taken place and the smaller industries would not really care whether their names were published or not.

There were mixed feeling between the POTW's on the availability of data to the public. Some felt that all of their information was public and would be available if requested. Others felt that even though effluent data should be given to the public, data generated in-house as a research tool should be kept secure. In most cases, however, there were confidentiality provisions in the ordinance and procedures to deal with requests for confidentiality.

The POTW's in this evaluation are all currently involved with the development of the Phase II portion of the program. For this activity they wold do an evaluation of the staff necessary to run the program on an on-going basis and an estimate of an annual budget. At this time it may be premature to attempt an exact figure due to the time frame, uncertainty of the regulations to determine the number of categorical industries, local limits have not been revised to protect sludge use, the vagueness of reporting requirements to the Approval Authority (USEPA or Illinois EPA), etc. However, the facilities did provide some kind of early estimate which ranged in staffing of no increase necessary to 17 people. The difference in the number is due to the impact of the categorical standards on the local industries. Annual budgets also ranged from no idea, to no impact, to $25,000 to $700,000/year. The wide range of numbers points out clearly the uncertainties of this estimate and that particular POTW's will be impacted a great deal more than others.

Legal Authority

All the POTW's have the authority to carry out certain requirements of the pretreatment regulations. What is not specifically written word for word, can usually be found referenced somewhere in the sewer use ordinance. Most of the procedural requirements are carried out by the POTW's irrespective of whether the specific language is included in the ordinance.

Conclusions

1. The existing sewer use ordinance for most of the major POTW's in Illinois are recent and up-to-date. They have been modified and adopted as part of the user charge system, existing plant problems, State criteria, etc. The general requirements of the pretreatment program are included in the ordinance while specific language may be missing. What is important, however, is that these facilities have the procedures to deal with the industries and this is evident for the POTW's evaluated.

2. While the paper work involved in developing the program identified specific tasks and organized the survey and technical portions of the program so that the POTW's became more involved in their industries, it was felt that the efforts by these POTW's would have been done irrespective of the national program as part of the State NPDES requirements, compliance actions, field visits, etc.

3. These communities have metal limits in their ordinance. The limit, in some instances, in the larger POTW's are more stringent than federal numbers. Local efforts may play a more important role than categorical standards if a problem exists. For the smaller POTW's there would probably be adoption of federal limits since it was felt that these numbers were not necessary in the first place.

4. In many POTW's, the problems that are evident do not concern organics or metals which the regulations deal with. Most problems occur from discharges of high strength BOD, SS, oil and grease, etc. For these communities local effort will be the key element here. Local effort through the State field office is an on-going activity of the State irregardless of the pretreatment program.

5. Categorical standards and going through the regulation is an immense resource intensive task for the POTW's. Problems encountered deal with applicability to users, production based number, calculating flows at end of process, difficulty of using the combined waste stream formula, adjusting to the ups and downs of the limits as each regulation is promulgated, etc.

6. The uncertainty of the pretreatment regulations is another difficulty faced. For example, removal credits is still in proposed form. What happens if national credits are not available and the removal efficiency varies from plant to plant within one POTW. According to the regulations, the lowest removal efficiency should be used.

7. The final point relates the ends achieved by the federal program. The major POTW's in Illinois are dealing with their industries on a day-to-day basis. What would be the result of the federal program beyond paperwork and administrative problems?

TABLE 1

THE NEED FOR A FEDERAL PROGRAM FOR PRETREATMENT

Descending Order Based on Size	IU's Reg. (403 Prog.)(A)	IU's Reg. (Exist. Prog.)	Exist. IU Cont. Prog.	% IU's Controlled	Assessment(B)
1. MSDGC	1500	1800	Good	100	No Benefit
2. Rockford	50-100	100-150	Good	100	No Benefit
3. NSSD	52-100	135	Good	100	Some Benefit
4. Aurora	38	58			No Benefit
5. Peoria	4-6	5	Good	100	No Benefit
6. Joliet	10	25	Problems		Some Benefit
7. Kankakee	16	18	Good	100	Some Benefit
8. Springfield	1		Good	100	No Benefit
9. Decatur	15	24	Problems		Some Benefit
10. Elgin(C)	28	100	Problems	95	Some Benefit
11. Granite City	6	20	Good	100	Some Benefit
12. Urbana	0	4-5	Good		No Benefit
13. Rock Island	6	15	Good	95	Some Benefit
14. Glen Ellyn	8	0	Problems	90	Some Benefit
15. Quincy	14	30	Good	100	No Benefit
16. Bloomington	3	11	Good	100	No Benefit
17. Thorn Creek	40	80	Good	100	No Benefit
18. Hinsdale	0	0	NA	NA	No Benefit
19. Elmhurst	3	0	Good	100	No Benefit
20. E. Moline	2	1	Good	100	No Benefit
21. Galesburg	7	5	Good	100	No Benefit
22. DuPage Co.	0		Good	100	No Benefit
23. Alton	3	5	Good		No Benefit
24. Lake Co.	0	0	NA	NA	No Benefit
25. Naperville	5	9	Good	100	No Benefit
26. Moline	10				
27. Downers Grove (C)	11	0	NA	100	No Benefit
28. Danville	8	11	Past Problems	100	Some Benefit
29. Wheaton	1	1	Good	100	No Benefit

Descending Order Based on Size	IU's Reg. (403 Prog.)(A)	IU's Reg. (Exist. Prog.)	Exist. IU Cont. Prog.	% IU's Controlled	Assessment(B)
30. Jacksonville(C)	5				
31. Sauget	13		Problems		Some Benefit
32. St. Charles	6	15	Problems		Some Benefit
33. Belleville	6	0	Problems		Some Benefit
34. DeKalb	5	4	Problems	0	Benefit
35. Freeport	9	9	Good	100	No Benefit
36. Belvidere	3	6	Good	100	No Benefit
37. Carbondale(C)	3				No Benefit
38. Carpentersville	1	0	NA	100	No Benefit
39. Salt Creek	0	2	Good	100	No Benefit
40. Macomb	0		NA	NA	No Benefit
41. W. Chicago	16	1	Problems	80	Some Benefit
	2008	about 2,500			

(A) This includes POTW's regulated by national pretreatment standards and would include all the reporting requirements but not users which are "potential problem" dischargers which may have storage and spill problems or have metals above background in the sludge.

(B) The potential of the federal program to improve existing industrial control.

(C) Based on initial estimate since POTW has not submitted survey.

(NA) Not applicable due to lack of industrial contribution.

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Table 2

(1) Belleville
(2) Crystal Lake
(3) Danville
(4) Decatur
(5) Granite City
(6) Kankakee
(7) MSDGC
(8) NSSD
(9) Peoria
(10) Rockford
(11) Sauget
(12) Urbana-Champaign S.D.
(13) Wheaton

	2	3	5	6	7	8	9	10	12	13
SURVEY										
1. Number of categorical industries	0	0	06		1500	52-100	4-6	50-100	0	1
2. Number of ind. monitored under exist. prog.	5	12	20		1800	135	5	100-150	4-5	1
TECHNICAL										
1. Percentage of industry-related prob. at STP	little	0	<0	10-100	10-50	5-80	25-50	25-100	little	0
2. Methods of sludge disposal (1) landfill (2) land applic. (3) other	2	2,3	1	1,2	1,2,3	1,2	2	1	3	1
3. Sampling of POTW interceptors	NO	YES	YES	YES	YES	YES	NO	YES	NO	YES
4. Sampling at POTW (other than NPDES)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
5. Local limits - metals	YES	NO	YES	YES	YES	YES	SOME	YES	YES	YES
6. Public notice of local limits	YES	-	YES	NO	YES	YES	-	YES	NO	YES
7. Public comments	YES		YES	NO	YES	YES		YES	NO	YES
COMPLIANCE MONITORING										
1. Requirement for IU reporting	YES	YES	YES	NO	NO	NO	YES	YES	YES	NO
2. Are metal analysis required in report	YES	YES	YES	-	-	-	NO	YES	NO	-
3. Sampling visits										
Scheduled	YES	NO	YES	YES	YES	YES	YES	YES	NO	YES
Random	YES	YES	YES	YES	YES	YES	NO	YES	YES	NO
Demand	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
4. Are procedures for follow-up policy or ordinance based	PROC	ORD	ORD	PROC	ORD	ORD	PROC	ORD	ORD	ORD
5. Chain-of-custody procedures	YES	YES	YES	YES	YES,	YES	YES	YES	YES	YES
6. Analysis of metals done in-house	YES	NO	NO	YES	YES	YES	YES	YES	NO	YES
Analysis of organics done in-house	NO	NO	NO	NO	YES	YES	NO	NO	YES	NO
7. Notification procedures for industry	NO	PROC	YES	PROC	PROC	PROC	PROC	YES	PROC	NO

Table 2 (Continued)

	2	3	5	6	7	8	9	10	12	13
ADMINISTRATIVE PROCEDURES										
1. Notify IU of noncompliance procedure or ordinance	PROC	ORD	ORD	PROC	ORD	ORD	PROC	ORD	ORD	ORD
2. Provide IU opportunity to respond										
3. Provide IU opportunity to take action										
4. Verification for correction										
5. Procedures for legal actions										
6. Procedures for gathering information										
PUBLIC PARTICIPATION										
1. Publication of significant violator	NO	YES	NO	NO	NO	NO	NO	YES	NO	NO
2. Is data submitted by IU available to public	NO	YES	YES	NO	NO	NO	NO	YES	NO	NO
3. Is data concerning local limits available	NO	YES	YES	NO	YES	NO		YES	NO	NO
4. Provisions for public comment	NO	YES	YES	NO	YES	YES		YES		
5. Confidentiality procedures	NO	YES	YES	NO	YES			YES	NO	YES
FINANCIAL ESTIMATES										
1. Staffing necessary	0	1.5	2-5	1	17	7-8	2	7	1	0
2. Annual projected budget (thousands of dollars)	NA	NA	110	25	600-700	NA	100-180	200-225	50	0

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ILLINOIS EPA

Environmental Protection Agency
2200 Churchill Road, Springfield, Illinois 62706

217/785-5735

June 6, 1983

Steven Schatzow, Director
Office of Water Regulations
and Standards
U. S. Environmental Protection Agency
401 M Street
Washington, D. C. 20460

Dear Mr. Schatzow:

RE: Draft Report titled "Assessment of Industrial Waste Control Programs in Three Municipalities".

This letter will serve to respond to your request of June 6, 1983 for comments regarding the draft report prepared by JRB Associates. As you are aware, we did not receive our copy of the report until late last week. Thus, our comments only address the most substantive matters, and should not be construed as covering the full extent of our review of the draft report.

Please find attached our detailed comments regarding the draft report. As you will note, we express some serious concerns about the shortcomings of this report. However, given the very short time frame for doing the report, some problems are certainly to be expected.

In general, we are very encouraged that Congressional concern about the federal pretreatment program has resulted in this further technical analysis. Such work has been sorely needed from the very onset of the original proposals for federal pretreatment regulations. We also find the results of side-by-side comparisons of existing local pretreatment programs and the 403 federal pretreatment regulations to be most enlightening. In fact, this draft report has strengthened our resolve to ensure that the water pollution control program in Illinois is not weakened by the application of 403 regulations and national categorical pretreatment standards. We say this because our evaluation shows that imposition of the federal pretreatment program could result in <u>less stringent</u> control of industrial facilities tributary to MSDGC.

This draft report has served to confirm our worst suspicions that lowest common denominator, uniform national standards may turn into a ready excuse for backsliding in some parts of the country. I sincerely doubt that Congress intends for such negative effects to result from the federal program.

We also want to stress the misleading nature of the Executive Summary developed by the contractors for this report. For comparison purposes, we have prepared the attached point-counterpoint presentation that demonstrates a few of our concerns with this Summary.

Finally, we wish to emphasize a critical aspect of this effort that deserves further attention. On the positive side, we firmly believe that very useful information could be developed from a more detailed, extensive and objective study of current POTW pretreatment programs. If properly designed and funded by USEPA, such an effort could readily be done within a reasonable time frame (9 to 12 months), and be provided to Congress to assist the policymaking process for pretreatment. At this juncture, providing a sound technical basis for addressing the refinement of the CWA could be most productive.

We respectfully request that the full text of our comments be made part and parcel of any final report. We appreciate having the opportunity to provide comments on such an important issue. Hopefully, future consideration of this matter will take place such that all parties can participate as fully as possible.

Sincerely,

Roger A. Kanerva, Manager
Environmental Programs

RAK/jb

Enclosure

cc: JRB Associates
Dale Heydlauff
Robbi Savage
Hugh McMillan
Charles Sutfin

IEPA RESPONSE - EXECUTIVE SUMMARY

Contractor Summary	*	MSDGC has operated an industrial control program for almost 15 years. It has submitted a Phase I pretreatment submission but has not developed a final submission at the request of the State of Illinois. It is unlikely that MSDGC will meet the July 1, 1983 deadline for pretreatment program approval.
Illinois EPA Response*		The Agency has included a schedule for the complete program development for MSDGC in the NPDES permit.
Contractor Summary	*	MSDGC plants are known to be well operated and maintained, and meet NPDES permits with over 99 percent consistency. All of the NPDES permits include metals, phenols, cyanide and conventional parameters, but limits for the metals are very lax.
Illinois EPA Response*		The effluent limits established in MSDGC's permit are based on State effluent limitations, or federally approved water quality limitations selecting the most stringent for each parameter.
Contractor Summary	*	The MSDGC IWS initiated by the State of Illinois in 1979 has not yet been completed.
Illinois EPA Response*		The industrial waste survey (IWS) referred to was a statewide survey (not done solely for MSDGC), and has been completed and available for use by MSDGC since 1980.
Contractor Summary	*	MSDGC has extensive metals analytical data for its POTW influent, effluent sludge, and for large dischargers, but lacks information on smaller categorical users. Insufficient information has been generated for organic priority pollutants, but an organics study is planned.
Illinois EPA Response*		Information for small industries may be available at MSDGC but not within the time frame requested by JRB. Organics have not been detected in large quantities as pointed out by the JRB report.
Contractor Summary	*	The NPDES permit allows many metal discharges in excess of typical POTW concentrations and water quality standards are not always attained in the MSD area.
Illinois EPA Response*		Water quality violation rates for metals in streams receiving waste from MSDGC facilities are significantly lower than those presented in the JRB report for most parameters when current water quality data is used. Further non-compliances are generally consistent with statewide averages indicating no unusual impact associated with MSDGC discharges.
Contractor Summary	*	Much MSDGC sludge is unsuitable for land application according to Illinois policy, and exceeds federal cadmium criteria for application to food chain crops.
Contractor Summary	*	Land application of sludge would require limitations more stringent than categorical standards in order to meet Illinois sludge policy.

Illinois EPA Response*	MSDGC sludge management program is consistent with Illinois requirements for land reclamation, cropping practices including food chain and non-food chain applications.
Illinois EPA Response*	USEPA has not fully defined through the promulgations of Sec. 405, CWA, regulations, the management and disposal of POTW sludge and the limitations on those practices.
Contractor Summary *	Approximately 1,000 additional categorical firms would be more agressively regulated.
Illinois EPA Response*	Illinois encourages cost effective selective regulation of significant dischargers as a part of its federally approved Annual Water Pollution Control Program Plan.
Contractor Summary *	POTW influent concentrations of zinc and chromium would decrease by an estimated 30 percent, and nickel and cadmium by less. Few other metals would be significantly affected.
Contractor Summary *	Up to 1,000 pounds of zinc and a like amount of chromium would be reduced in influent loadings daily at MSDGC's large plant as a result of categorical standards.
Illinois EPA Response*	Use of national categorical standards with removal credits results in a less stringent control program for heavy metals than is currently provided by MSDGC's sewer use ordinance. If MSDGC's demonstrated removal credits are used in place of the national values, then the benefit of the MSDGC ordinance system is even more significant.
Contractor Summary *	No improvement in the currently high rate of NPDES compliance is expected. MSDGC's limits are so lenient for metals that the influent to many POTW's could meet them.
Contractor Summary *	An improvement in compliance with a few State water quality standards may be expected.
Illinois EPA Response*	MSDGC permit limits are consistent with both Illinois effluent and USEPA approved water quality standards necessary for protection of designated uses.
Contractor Summary *	MSDGC's costs would increase by $640,000 annually with little or no additional capital expenses needed. This equates to $360 annually for each of 1,800 categorical industries, or an increased level of effort at MSDGC of 14 man years.
Illinois EPA Response*	Agency experience indicates an estimate of MSDGC's cost increase by $640,000 is low

ILLINOIS EPA COMMENTS ON DRAFT REPORT
PREPARED BY JRB ASSOCIATES

III-2, Section 1.1

1. The final program submission date in MSDGC's NPDES permit of December 1982 plus the July 1, 1983 Federal Register date has lost their significance for workable pretreatment schedules. These dates were tied into the municipal compliance date which was subsequently pushed back to 1988. Pretreatment guidelines have also been delayed. The Illinois EPA is working towards new target dates which are consistent with the Pretreatment Standards and working with the local POTWs for realistic pretreatment schedules.

2. The Illinois EPA is requiring the development of the entire pretreatment program in MSDGC's and other POTWs permits. Due to resource constraints and delays in review procedures between USEPA and IEPA, we are currently reviewing the Phase I portion of the program.

3. The Illinois EPA has been enforcing the individual items in the Phase I portion of the POTW NPDES' permit. If a community has not initiated any action, or has received a grant and not started work, the Illinois EPA has been actively involved. We are not initiating any compliance actions with MSDGC since they have submitted Phase I and portions of Phase II.

III-15, Section 1.4

The "Receiving Waters" section contains a serious misstatement of Illinois' stream classification system. On page 15 the contractor states "all waters not suited for general use are classified as Restricted Use, Secondary Contact and Indigenous Aquatic Life". First, the water quality standards were modified to exclude the concept of "Restricted Use" in 1973. The change was made at the request of USEPA and included changes in both terms and supporting numerical criteria. Second, the classification of "Secondary Contact and Indigenous Aquatic Life" waters is the result of specific and detailed assessment of water quality needs of an identified group of waters not, as the contractor implies, a "catch-all" classification to permit degraded water quality. The waters classified for this use have serious habitat limitations, and most are subjected to intense commercial barge traffic and urban stress. In many cases, water quality is not the factor limiting uses of the streams.

III-19, Section 2

MSDGC officially submitted Phase I in October, 1980. Much of the additional information required in Phase II is contained in the additional documents which MSDGC gave to both Illinois EPA and JRB at the Chicago meeting on May 9, 1983.

III-19, Section 2.1

The existing MSDGC sewer use ordinance, like most municipal ordinances, does not contain the specific language needed to implement a model pretreatment program such as that envisioned by USEPA. It should be noted, however, that these "wording differences" do not make an existing program any less efficient.

III-23, Section 2.1.1

1. The contractor does not take into consideration the actions which MSDGC would take when modifying their ordinance. MSDGC has the capability to modify and add language as appropriate as has happened in the past. If a minor language additions are necessary, (for example the word "interference", temperature set at 104 F rather than 150 F, or pH of 5.0 rather than 4.5) this could probably be easily remedied.

2. The 403 pretreatment regulations allow the control mechanism to be contained in "a statue, ordinance, or series of contracts or joint powers agreements which the POTW is authorized to enact, enter into or implement, and which are authorized by state law." This provision does not specifically require setting up other procedures such as a permitting system as long as the existing system is adequate.

III-31, Section 2.2.1

1. MSDGC did not really have two full weeks to respond to the request for a summary listing of industrial flows by SIC code. The Illinois EPA has been repeatedly telling the POTWs not to rely on SIC code lists as indicators of industrial problem discharges; the POTW should concentrate on surveys, field visits, sampling, past history, etc., which would point out their problem users. To accomplish the consultant's request MSDGC would have to reorganize the data. This does not mean that the information is not available.

2. The consultant has stated that the control of organic dischargers using MSDGC files is impossible because theyhave focussed their efforts on metals and conventionals. The sampling reports and the JRB report showed that "the number of organic priority pollutants detected at all MSDGC POTW's and their concentrations are lower than average". Why then should MSDGC initiate more control of organic dischargers?

3. While the consultant had access to the final Illinois Industrial Waste Survey Report, and the numerous summary reports, they apparently did not obtain an understanding of the original intent of the survey. The survey was initiated primarily to provide an organized technical foundation for use by management in the development of Illinois' pretreatment and RCRA programs. Over 20,000 industries were surveyed. The purpose of the IWS was not to develop detailed "permit application type" data, but rather to identify as many industries as possible who might be subject to the program, and to generally characterize their waste. Since it was known that 100% response was not possible, a secondary purpose was to be able to extrapolate the collected data into various summary reports which would provide management with the scope of the programs statewide.

   Once the survey was finished, data was collected on a POTW by POTW basis and transmitted to each POTW in the program. In some instances the POTWs were provided with copies of management reports. MSDGC was provided with all the raw data collected from IWS which would concern MSDGC. Thus, the IEPA's intent was to provide the POTWs with a foundation from which to build, and initiate local surveys which would suit local needs.

   It should be noted here that the survey was essentially a state supported effort exclusive, except for one activity, of any federal funding. The survey was designed to have an initial questionnaire mailing and one follow-up in order to improve the response rate. In order to make the follow-up more effective, the help of several larger POTWs was solicited. Their function was primarily to call industries and urge them to respond. Their effort was, in part, funded by grant monies since this was a function of local program development.

   In response to a comment on page III-30 that the survey was a "joint effort" it should be noted that while IEPA greatly appreciated MSDGC's assistance, the IWS could hardly be considered a joint effort.

   On page III-31, it is alledged that Region V reviewed the questionnaire and "... found fault with it for using the list of 65 pollutants and classes of pollutants rather than the current list of 126 priority pollutants". To the best of IEPA's recollection Region V never formally responded to IEPA on any of the survey. Also, the contractor makes an observation on the same page that "... the questionnaire failed to request quantitative data...", which implies that the survey was at fault somehow for failing to obtain "quantitative" data. Notwithstanding the contractor's lack of documentation, in response to these comments it should be remembered that the purpose of the survey was to identify industries subject to pretreatment, and not to collect "permit application" type data. Many of the 20,000 industries the survey was sent to were very small and it was felt a smaller list of pollutants would be more honestly identifiable by many more industries. Asking for "only" sixty-five pollutants has served the survey's purpose.

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To attempt to identify quantitatively all the data would have been impossible in the time frame allowed, simply because of a lack of laboratory available. It was envisioned that quantitative data would be collected in baseline reports after categorical guidelines had been developed.

The contractor also alledges, on page III-31 that the "...IWS is unfinished..." and that "... summary results of the IWS for the MSDGC service area have not been compiled or made available to MSDGC." The IWS was completed in 1980 and MSDGC has been sent all the data for its service area. A copy of the final report and MSDGC data is available at IEPA's offices.

The contractor states that since the MSDGC data base cannot readily sort by SIC codes it is somehow not in compliance with federal regulations. It should be noted that there has been increasing awareness that SIC codes frequently are inaccurate, or don't adequately describe the regulated community. USEPA, who has sponsored this report, does not even use SIC to identify industrial categories, in formal regulations. In some cases a general discussion of the industrial category and SIC is briefly presented, but in other instances (e.g. coil coating) no SIC reference is presented since the category spreads over many industrial categories.

The closing statement to this section states that MSDGC does not have a completed IWS "...due to delays on the part of IEPA...". This statement is judgemental on the part of the contractor in presuming the MSDGC data base is inadequate, and further alledges <u>without documentation</u> that IEPA is somehow responsible.

<u>III-34. Section 2.2.2</u>

1. The consultant pointed out that the metal concentrations in WSW effluent are higher than other POTW effluents. Is the comparison to other POTWs or other MSDGC plants? Are these numbers really significant? What about the level of treatability? It should be noted that WSW is still meeting State NPDES limits.

<u>III-39. Section 2.2.2</u>

1. The consultant once again pointed out the higher than average removal rate for metals by MSDGC as compared to the 40 POTW Study and the improvement in removal from 1977 to 1982.

2. A statement was made that the "concentrations of metals in MSDGC sludge are judged to be high." On what basis was this observation concluded? The Illinois EPA has sampled over 700 POTW sludges in 400 communities and we have prepared a document (which was given to JRB) entitled "Pretreatment-The Relationship of Industrial Loadings to Municipal Sludge Quality - A State Perspective" which discusses the background levels found throughout the State. Based on these background levels of Cadmium (10 - 30 PPM), Chromium (750 - 1000 PPM), Copper (1000 - 2000 PPM), Nickel (100 - 400 PPM), Lead (500 - 1000 PPM), and Zn (2000 - 4000 PPM), MSDGC's levels do not present a significant sludge management problem.

III-43. Section 2.2.3

On page 43 of the contractor's report (first full paragraph) it is stated that in 1972 "...NPDES effluent limitations superseded State standards..." At this time that the federal amendments were adapted 1972, Illinois already had in force detailed effluent limits which were roughly equivalent to BAT. Even today when many of the BAT development docuemnts still have not been finalized, the Illinois EPA standards have provided the basis for permit limits and sewer ordinances for more than ten years.

III-49. Section 2.3.2

1. The contractor found fault with MSDGC's program to focus on problem facilities. However, this is analogous to the approach used by USEPA for the direct discharger program in which emphasis was placed on the "major" industries due to resource constraints.

2. The manifest system discussion should be expanded due to the importance of this mechanism by MSDGC to control discharges.

III-55, Section 2.4.1

1. The consultant is recommending a shift towards a broader less intensive monitoring strategy which would minimize the need for additional personnel. This approach would in effect decrease the existing effects on the 800 problem dischargers and create more work with the other 1,000 less significant industries. This would add to one facet of the program while taking away from another with net reduction in total effectiveness.

2. JRB has emphasized that "absolute numbers" rather than production based standards would be effective in detection of non-compliance. Contrary to this admission, the contractor then advocates the federal production approach in lieu of the MSDGC ordinance.

III-60, Section 2.4.2

1. The estimate of less than 1% of total budget allocated to the Industrial Wastes Section is a misrepresentation of MSDGC's program. The contractor included construction and design funds in the total MSDGC program which significantly distorts the proportion of operating resources committed to industrial control.

2. Illinois EPA has long maintained that local pretreatment ordinances can be as effective as the federal pretreatment program. JRB has provided documentation of this result by referencing the 70% reduction of influent metals associated with the MSDGC system from 1971 to 1976.

III-63

Table 17, 18 and 19 attempts to point out the maximum possible industrial contribution. Even the categorical standards do not attempt such an extreme scenerio. This obvious "worst-case" approach simply is not consistent with the real world. Interestingly enough, if one chose to accept the contractor's rationale, the tables do not support the contention that MSDGC's ordinance levels would result in significant adverse effects.

III-66, Section 2.5.2

There does not appear to be a sound basis for the implication that MSDGC is not enforcing ordinance limits for lead. Lead concentrations may be from only one or a few dischargers and not a significant number of IU's as indicated. There may also be lead packing of the pipes and leaded gasoline contributions.

III-67, Section 2.5.3

"Ability to Meet NPDES Permit" reflects a misunderstanding of Illinois' regulations and their supporting justification. The contractor implies in several sections of his report that both the effluent and water quality standards that govern the dischargers from MSDGC facilities are too lenient and are based on inadequate data and obsolete analytical techniques. This is clearly not the case! The standards on which MSDGC permits are based were adopted only after extensive hearings before an independent adopting authority, including both technical and public input. The regulatory process provides for continuous review and when necessary, revision of the standards. Regulatory limits must reflect a wide variety of considerations including environmental impacts, treatability and economic impact. The USEPA approved the original standards and all subsequent revisions. Although professional judgement is a significant element of any standards setting process, the implications that BPJ (Best Professional Judgement) as a "best guess" concept was used in standards setting is a misrepresentation of the review and revisions process being used in Illinois. Our water quality and effluent standards are among the most comprehensive in the nation and are consistent with USEPA's "Quality Criteria for Water" in general use waters. Finally, none of the standards discussed in the contractor's report were based on limits of analytical detection either in 1972 when the standards were originally adopted or currently. The MSDGC permits have been established to assure compliance with both effluent and USEPA approved water quality standards necessary to support the designated use of the receiving stream. The cyanide permit limit referenced in this section for the Calumet plant was developed by USEPA prior to IEPA NPDES permit authority. The Calumet NPDES permit now being public noticed establishes effluent cyanide limits consistent with Illinois standards (0.15 mg/l as an effluent) which assures protection of water quality of the receiving streams and reflects current discharge levels. The new effluent limits are the result of formal regulatory process not negotiations with the dischargers.

III-71, Section 2.5.4

"Protection of Water Quality" continues the misconceptions concerning the technical justifications for Illinois' standards and the means by which NPDES permits reflect those standards. Discussion of BPJ is contained in our comments on Section 2.5.3 as is the effluent limit on cyanide for the Calumet plant. The ammonia, BOD and suspended solids limits contained in MSDGC permits came directly from Illinois effluent and water quality standards and are the result of much more extensive justification than simple waste load allocations modeling. As with other

parameters in MSDGC permits effluent limits are established to assure compliance with USEPA approved water quality standards.

This section also contains many misleading statement concerning water quality in the streams receiving MSDGC discharges and an apparent lack of understanding of typical ambient water quality level in Illinois streams as well as probable sources of pollution on the part of the contractor. On page 71, the report states that the streams receiving MSDGC discharges are "water quality limited" implying that effluent limits being imposed on MSDGC will not be adequate to assure attainment of water quality standards. In fact, all streams in Illinois are currently classified as "water quality limited" as a result of an unresolved dispute with USEPA over the use of more stringent (than BPT) Illinois effluent standards to determine the adequacy of point source controls. Once the facilities contained in Illinois' approved 208 plan are in place, point sources will not contribute to water quality violations. Final permit limits for MSDGC treatment plant effluents and combined sewer overflows reflect the requirements of the 208 plan.

The discussion of "current water quality levels of MSDGC receiving streams is both misleading and out of date. Current ambient water quality data at points downstream of MSDGC dischargers indicates violations rate of applicable water quality standards for parameters discussed in the contractors report as shown in the attached table. Values in the contractors report are parenthetically included. Statewide average violation rates are also listed for reference and to provide insight into background levels.

As can be seen from the attached tables, the violation rates for the "parameters of concern" in MSDGC receiving streams is not alarming when current data is used and compared to statewide averages. The raw violation rates for the DesPlaines and Salt Creek are somewhat higher than state averages, but are far from unusual due to the geology of Illinois watersheds. There is absolutely no reason to believe that discharges from the MSDGC are contributing to these raw water water quality violations. It is unclear why the contractor chose to present data on violations in the Little Calumet River and North Branch of the Chicago River. In addition to having the same errors that are contained in the other violation summaries, these streams receive no waste from MSDGC facilities.

III - Pages 74 through 83, Section 2.5.5

This section views the protection of MSDGC sludge quality as if a predefined quality exists in the regulatory framework either state or federal. This is not the case. The regulations called for under Section 405 of the Clean Water Act of 1977, and the Water Pollution Control Act of 1972, have not been promulgated or proposed. Only a small portion of a program exists under 40CFR257 which is limited in application. Thus a federally defined sludge quality does not exist.

The State of Illinois program does provide a definition of sludge quality for sludges to be applied to agricultural land at agronomic rates. However, the state program recognizes that other forms of sludge management or disposal are available and may be desirable at the local level. These rationally designed programs are not prohibited and are in fact approved utilizing a permit system.

Fulton County Site

The Fulton County Project was compared by the contractor, JRB, Inc. to the criteria contained in State of Illinois guidance material. This comparison is invalid for the following reasons.

1. The Fulton County Project was initiated in 1971, with the first sludge applied in 1972. The Illinois policy for applying sludge to agricultural land was published in draft form in 1977 and has been under review and revision recently leading to promulgation as regulation shortly. This policy in draft form has and the regulations will continue to allow reclamation projects to be developed on a rational basis.

2. The Fulton County Project was preceeded by extensive studies by the University of Illinois on MSDGC sludges and their effects on crops. These studies formed the bases for the design of the project which also included as a goal reclamation of unproductive strip-mine land.

3. The Fulton County Project was accompanied by an extensive monitoring program including groundwater, soil, surface runoff, and crop tissue. The crop tissue monitoring is conducted under the review of the U.S. Department of Agriculture with approval being given by the DOA prior to marketing of the grain crops.

4. The monitoring of the Fulton County Project is more intensive than that envisioned by the State sludge policy for a normal sludge application site.

5. The application of sludge and the monitoring of the total program are defined by State of Illinois permit. The last permit was issued October 6, 1981, and continues in effect until December 31, 1983, at which time the Illinois EPA will consider renewal.

6. The Fulton County Project provides for retention of surface run-off until the quality can be determined to meet the conditions established by the October 6, 1981, permit. The ability to recycle substandard run-off exists.

7. Groundwater quality at the site has to be reviewed carefully, taking into account the previous quality changes which are the result of strip mining influences.

Percent Violations Rate for Selected
Parameters in Streams Receiving
MSDGC Waste

(% Violation)

	Cu	Fe	CN	Pb	Hg	Ag
Des Plaines River	8 (63)	60 (30)	N/D (10)	0 (*)	0 (*)	0 (N/D)
Salt Creek	9 (70)	75 (48)	9 (N/D)	0 (3)	0 (N/D)	0 (*)
San. & Ship Canal	0 (N/D)	0 (N/D)	0 ($\leq$ 2)	0 (N/D)	0 ($\leq$ 2)	0 (N/D)
Cal - Sag Channel	0	0 ($\leq$ 6)	0 ($\leq$ 6)	0 ($\leq$ 6)	0 ($\leq$ 6)	0 (N/D)
W. Branch, DuPage	0 (9)	40 (56)	2 (23)	0 (N/D)	0 (N/D)	0 (N/D)
Statewide Average	5	48	< 1	< 1	< 1	< 1

Notes: N/D - No Data
* - Unspecified Violations

Source: Illinois Ambient Water Quality Data from "Illinois Water Quality Inventory Report - 1980 - 1981" (305b Report)

Doty Reclamation Site

The contractor has compared the operations at the Doty Reclamation Site with the criteria in 40CFR257. This comparison is between practices at a site which has a history of uses with practices outlined in 40CFR257 which are basically applicable to a greenfield or virgin site. This direct comparison is invalid.

The 40CFR257 regulations address disposal operations and do not envision reclamation.

The project at Doty is designed to minimize existing environmental impacts through reclamation as the site and the establishment of a grass cover utilizing sludge as a medium to sustain growth. The aim of the project is to cap the site minimizing water penetration and erosion on the surface of the cap.

III Pages 86 through 91 Section 3.1.1.2

Evaluation of Table III-28

This table, which purports to show the improvements in metals reduction attributable to categorical standards, fails to address the impact of removal credits. Since MSDGC would appear to qualify for either national removal credit, or removal credits based on demonstrated capabilities a revised version of the table is presented later.

In preparing the revised table the national removal credit and removals based on 1982 data are shown:

Metal	National Removal	MSD Removal		
		WSW	North Side	Calumet
Cadmium	38	82	100	NI(1)
Chromium	65	93	98	ID(2)
Nickel	19	45	79	NI(1)
Zinc	65	82	76	50

(Refer Table III-9)
NI - none in influent
ID - insufficient data

Copper and Lead are not shown since there would be no substantial improvement due to categorical standards.

III-107. Section 3.2.2

The contractor's estimate of the additional financial cost for implementing the federal program appears to be very conservative. Based upon our experience with the federal pretreatment program, we anticipate that the cost would be significantly higher than projected by the contractor. The major municipality in Illinois has completed the process of revis their pretreatment program to meet the federal requirements. In this instance the POTW projected an increased cost of $191,000 for the implementation of the federal program to regulate approximately 69 categorical industries. Extrapolation of their increased expense to the MSDGC system would provide an estimate of about $4.4M per year based on 1800 categorical industries. While this method of projection of MSDGC's cost is admittedly still rough, at least it is based upon actual experience with implementation of the federal program.

Evaluation of Table III - 28

METAL	Ratio of Cat. to MSD Standard			Additional Pounds Controlled			Net Improvement, %		
	W/No Rem. Cr.	W/Natl. Rem. Cr.	W/MSD Rem. Cr.	W/No R.C.	W/Natl. R.C.	W/MSD R.C.	W/No R.C.	W/Natl. R.C.	W/MSD R.C.
				WSW					
Cd	0.6	.95	(3.33)	32	4	(-)	16	2	(-)
Cr	0.28	.80	(4.00)	839	233	(-)	29	8	(-)
Ni	0.41	.51	0.74	398	330	175	24	19	10
Zn	0.28	.80	(1.5)	781	217	(-)	29	8	(-)
				Calumet					
Cr	0.6	.95	(7.0)	31	8.6	(-)	29	8	(-)
Zn	.28	.80	.56	199	54	121	29	8	17.5
				North Side					
Cd	0.6	.95	-	4	.5	(-)	17	2	(-)
Cr	0.28	.80	(14)	68	19	(-)	29	8	(-)
Ni	0.41	.51	(2)	22	19	(-)	23	20	(-)
Zn	0.28	.80	(1.2)	163	45	(-)	29	8	(-)

Note: (-) means no impact
Additional Pounds Controlled - 3 plants

SUMMARY OF ILLINOIS WATER QUALITY MANAGEMENT PLANNING PROCESS

Introduction

The current Illinois Water Quality Management Plan is an operating part of the overall water pollution control program administered under the Clean Water Act and related state law. This Plan covers programs for control of both point and nonpoint sources of pollution. The existing program is responsive to the resource analyses, findings and recommendations of the initial State and Areawide Water Quality Management Plans developed pursuant to Section 208 of the Act. These plans recognized the significance of nonpoint source pollution and recommended action programs to control these sources where necessary. This included identification of those areas where nonpoint source control programs could act in concert with established point source control initiatives. This linkage evolved in three phases.

Phase I Basin Plans, prepared in 1976 under Section 303(e) authorization, identified the categories and extent of nonpoint source pollution which guided efforts resulting in the certification and approval of Phase II water quality management plans for three designated areawide planning agencies and the State in 1979. Since 1979, Phase III work has been conducted with Section 208 and 205(j) funds and extensive progress made towards the careful integration of this type of planning activity into the on-going water pollution control program base.

The major focus of current water quality planning and program efforts is to continue to provide a transition from planning to implementation. The principal guiding policy is the refinement of current programs and authorities to respond to the problem of nonpoint source pollution control. The Continuing Planning Process (CPP), as defined in Section 303 of the Clean Water Act, is the overall mechanism used in Illinois to accomplish this transition.

The Continuing Planning Process for Water Quality Management

The Federal Water Pollution Control Act Amendments (FWPCA) of 1972 established a series of related programs for setting water quality standards, constructing municipal wastewater treatment plants, issuing permits for wastewater discharges, enforcing discharge permit conditions and establishing a broadly based planning process for water quality management (WQM). The WQM program is oriented towards implementation of abatement strategies for the control of point and nonpoint sources of pollution. The purpose of the CPP is to define the framework to target resources toward both these problem solving approaches. The process provides for the following:

1. Continuity between the annual program plan and longer term direction.
2. Transition between program base elements and new initiatives.
3. Technology/institutional approach assessments.
4. Intermedia program interface.
5. Mechanism to identify and assess conflict resolution needs.
6. Local, State and Federal coordination.

As a result of Phase I Basin Plans and Phase II Water Quality Management Plans, the following pollution control problems were identified as the basis for planning and program refinements with the context of the CPP:

1. The Illinois Pollution Control Board water quality and effluent standards are based on fixed levels of various contaminants. The present standards were not developed with nonpoint pollution sources in mind. A program has been initiated to examine the levels of protection of water quality needed to support indigenous aquatic communities as well as present or future cultural uses of waters of the state.

2. The initial WQM planning program provided an examination of the urban stormwater problems in eight nondesignated area Standard Metropolitan Statistical Areas (SMSA) and in the Chicago designated area. While some recommendations were given in the initial Section 208 plans, it was not possible to fully address urban stormwater problems at that time. Subsequently input from the National Urban Runoff Program (NURP) is being integrated into Illinois programs now that the results are known. Urban runoff continues to be a problem area.

3. Past water quality assessments have indicated ground water inflow to streams as a possible significant impact on surface water quality. Although ground water data have been collected in the past, this data has not been centralized. Work done in the Phase III portion of the WQM program compiled data so that adequate problem assessments could be completed in certain areas of the state. Priority ranking of these areas, based on susceptibility to both point and nonpoint source inputs, is the next major step for this portion of the WQM Program.

4. In the public participation efforts of the initial planning process, citizens identified a strong desire for lake water quality protection and restoration for both recreational and public water supply uses. The State has developed an adequate base of chemical and physical lake data. Provisions for technical assistance and implementation of restoration and water quality protection programs are needed.

5. The predominant nonpoint problem associated with agriculture was identified as soil erosion and sedimentation in WQM studies. Other problems include fertilizers and pesticides tied to soil erosion and small livestock feedlots. Of nonpoint source problem areas identified during the initial planning process, the majority of the work conducted during Phase III was devoted to agricultural nonpoint problems. Although significant progress has been made towards controlling soil erosion through cooperative agreements with agricultural agencies, there are inherent limitations in these efforts. The major limitation is the tendency of agricultural agencies to gear soil erosion control efforts primarily towards the maintenance of soil productivity rather than the protection of water quality.

6. Little effort had been devoted to the examination of the quantity/quality relationship in water management. It is known that quantity considerations apply to standards determinations, lake management, ground water availability, and public water supplies. Therefore, some future WQM efforts need to be directed toward addressing this relationship. Additional expenditures are needed to ensure the incorporation of environmental concerns into traditional engineering designs.

7. Drainage from coal mining areas has long been identified as a significant problem in the southern portion of the state. Arrangements under the federal Surface Mining Control and Reclamation Act have become clear allowing the opportunity for some water quality issues pertaining to mining to be included in this program. However, the problem of water quality degradation from orphaned mined lands still remains.

8. Other non-point source water quality problems to be addressed in Illinois include non-coal mining, construction erosion, hydrographic modification, residual wastes and oilfield brine. While many sources of pollution have been defined and methods of control determined, the ability to effectively integrate these results into a feasible control program for any specific watershed must be addressed. The capability to develop optimal technical and institutional solutions for both point and all nonpoint sources is essential.

As part of the continuing planning process, the Agency consolidated approved State and Areawide WQM Plans in order to maintain the momentum of the Section 208 program. This consolidated State and areawide plan called the "Illinois Water Quality Management Plan" serves as the focal point for the continuing process of water quality management planning in the State for both point and non-point sources.

Follow-on to Section 208 Planning in Illinois: A Transition to Implementation

The State of Illinois had actively participated in the water quality management (WQM) planning process, as characterized by Section 208, since the first expenditure of funds under this program in 1975. Between the federal fiscal years of 1976 and 1981, over 20 million dollars was committed to this process in Illinois. With the cessation of funding for

Section 208, the Illinois EPA was faced with several critical decisions with regards to the water quality management planning process in place in Illinois.

Over the past several years, the Agency had been preparing for the continuation of water quality management planning activities upon the completion and phase out of Section 208 sponsored activities. Proposed transitional and follow-on WQM planning activities were predicted on the belief that a certain continuity should be maintained between former Section 208 initiatives and those tasks which could be in part supported by Section 205(j) funds. This included identifying ways in which the current WQM planning process could be directly merged into daily water pollution control program activities.

Several types of activities were proposed for Section 205(j) funds based on this assumption. One of these activities involves areawide WQM planning agency support for Agency water pollution control programs. During the past calendar year, the Agency has made a concerted effort to review and consolidate existing State and Areawide WQM Plans. This consolidation and revision process served to anchor future WQM planning activities under Section 205(j) to program needs in relation to the NPDES, Construction Grants, water quality assessment and non-point control activities. The objective was to establish a series of activities which support, in an operational fashion, on-going water pollution control activities.

During the first transitional year, the three currently designated water quality management planning agencies, are involved with Section 205(j) funded activities on a direct contractual basis. This is in line

with the orderly development of a water quality management planning program supported in part by the involvement of these types of organizations. The basic nature of areawide WQM planning support centers on WQM Plan consistency reviews, conflict resolution related to consistency reviews on NPDES permits, construction and operation permits and Construction Grant issuance as well as a series of special water quality assessments. These special assessments include continued oil field brine damage investigations, groundwater resource inventory and evaluation and continued review of urban runoff impacts on Lake Michigan water quality.

The overall planning process has supported base information, problem assessment, strategy development, transfer programs, and implementation initiatives. Continued efforts will be made to further address major problems of point and agricultural non-point source pollution. In addition, emphasis is being made to further address problems on a regional and local basis and provide adequate support to facilitate problem resolution.

The Illinois Water Quality Management Plan

The consolidation of State and areawide WQM plans provided the following benefits from both a state and local perspective by:

1. Providing a concise compilation of pertinent data needed in consistency determination for grant and permit issuance;
2. Formating existing WQM plans into a standard style to simplify their use and eliminate unnecessary information or support documentation;
3. Clearly specifying roles and responsibilities of designated management agencies;

4. Establishing a simple routine process to update and amend the WQM plan through the use of DWPC's Annual Program Plan;

5. Incorporating water quality mangement considerations into base program (Sections 106 and 205(j)) activities and;

6. Defining the minimum water quality management planning requirements for plan continuity.

The consolidating of State and areawide WQM Plans was undertaken in two distinct parts. Part of this effort has entailed the development of a document entitled 208 Planning in Illinois. This report contains abstracts for all FFY 1977 through 1981 projects completed with WQM planning funds by the respective State or areawide planning agency. This provided a convenient compilation of 208 work activities and facilitates information transfer among interested parties. The second part of this effort was the consolidation of the State and areawide plans themselves.

The purpose of integrating the Illinois Water Quality Management Plan (IWQMP) within the overall program was to consolidate and streamline portions of approved State and Areawide WQM plans in order to facilitate their usage in the operations of all designated WQM agencies. The WQM Plan represented a joint effort by the four agencies with WQM planning responsibilities. The four agencies involved were: Illinois Environmental Protection Agency, Greater Egypt Regional Planning and Development Commission (GERPDC), Northeastern Illinois Planning Commission (NIPC) and the Southwestern Illinois Metropolitan and Regional Planning Commission (SIMAPC).

There were several reasons which promoted the unifying of existing state and areawide plans. The first was the need to compile existing WQM plans in a convenient administrative format. At the state level, there was a need to improve the process of WQM Plan consistency review for NPDES permit or Title II Construction Grant determinations. For local

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officials there was a need to clearly define designated management agency responsibility and highlight recommendations for future action. This was a necessary step in the continuing process of WQM plan implementation.

A second reason for WQM Plan consolidation was to provide an orderly transition from plan development to implementation of programs. There has been a considerable public investment to establish credibility in the process Section 208 created, both from a planning and implementation standpoint. The cessation of funding for Section 208 WQM planning had resulted in the need to incorporate this planning process into the ongoing Agency water pollution control program.

Annual updates and amendments to the Plan are published in the Illinois EPA's Division of Water Pollution Control Program Plan. The Program Plan serves as a vehicle to circulate and document Plan changes. The amendment process for point sources is conducted in accordance with the adopted "Procedures and Requirements for Conflict Resolution in Revising Water Quality Management Plans", which are part of the Illinois Administrative Code.

The following pages contain a brief synopsis of the continuing policies and recommendations found in the Illinois Water Quality Management Plan.

Chapter Two -- Point Source Control: Control of point sources in Illinois is provided through the regulatory structure established by the Illinois Environmental Protection Act (Act) and subsequently through the Illinois Pollution Control Board (Board) Rules and Regulations. The emphasis of the Illinois WQM Plan for point sources is directed specifically towards NPDES and construction grant determinations and their conformance with the Illinois WQM Plan. From a statewide

perspective, the control of point source discharge is a necessary component in a comprehensive strategy for water quality management. The primary responsibility for control of point sources is shared between the State and local designated management agencies.

* The emphasis of the WQM Plan is to ensure that those State and local programs involved with point source control are carried out in an efficient and effective manner.

* It is the primary responsibility of the State to ensure that the process of construction grant award, NPDES permit issuance and compliance monitoring are undertaken in accordance with all applicable state and federal requirements. The issuance of new NPDES permits constitutes an amendment to the approved WQM Plan.

* Local designated management agency are primarily responsible to ensure the quality of its effluent, the efficient provision of service within its facility plan area, the effective enforcement of applicable sewer use and pretreatment ordinances as well as the encouragement of water or energy conservation strategies (as appropriate). Facility plans should be implemented by local designated management agencies as approved by Illinois EPA. Amendments to these plans should be conducted in accordance with established Agency procedure.

* Continued regulation of combined sewer overflows is a beneficial and essential element of an effective statewide WQM plan. Local treatment authority plans for controlling combined sewer overflows must comply with applicable Pollution Control Board rules.

Chapter Three -- Agriculture: The control of water quality impacts from agricultural activities is the foundation of a comprehensive strategy for the abatement of nonpoint source pollution. The responsibility for control of agricultural nonpoint source pollution is shared among federal, state and local agencies and the individual farm operator and is based primarily on a program of voluntary compliance. The policies and recommendations contained in the plan reflect the institutional and program changes which were first suggested in the initial plan in 1979.

* The WQM Plan recommends expanded development of a program of education and research efforts directed towards agricutural nonpoint source pollution in five primary areas of concentration: erosion and sedimentation, livestock waste management, silviculture, pesticide use and fertilizer application.

* The Illinois Department of Agriculture and the 98 soil and water conservation districts have continued responsiblity for technical services, cost-sharing and direction of the soil erosion control program.

* The Illinois Environmental Protection Agency (IEPA) and the Illinois Pollution Control Board (IPCB) have continued responsibility for water quality monitoring, progress accountability and enforcement of the provisions of the water quality related elements of the agricultural nonpoint source control program.

* The State has the primary responsibility for assuring the efficient and effective use of fiscal, technical and personnel resources related to soil erosion and water quality nonpoint management objectives. Local, state and federal agencies should cooperate to assure adequate compliance monitoring and assessments are made. Local voluntary support is encouraged.

* The State, through the Department of Agricultre, should continue to provide funding to accelerate the rate of soil survey completion in order to provide full coverage of the State with modern surveys.

* The Illinois EPA should continue to upgrade and refine its program for administering the Illinois Pollution Control Board's Livestock Waste Regulations (Agriculture Related Pollution, Ill. Adm. Code, Title 35, Subtitle E, Chapter I, Part 501). Problem feedlots will continue to be prioritized on a "worst case first" basis for follow-up action. Compliance with existing regulations should be pursued on a voluntary basis whenever possible. To defray compliance costs, livestock operators should be informed of sources of financial relief and lower cost alternatives for waste management.

* The Illinois Department of Conservation, Division of Forest Resources and Natural Heritage (IDOC-FRNH) is the primary agency responsible for directing technical assistance and educational programs for forestry operations. The recommendations contained in the State Forest and Related Resources Plan, developed by IDOC-FRNH, should be implemented.

* Reduction in fertilizer contributions to high nitrate concentrations and elevated nutrient levels should be controlled through sound fertilizer management practices.

* Continued emphasis should be placed on the development and implementation of an effective program of pesticide waste management.

* Cooperative agreements should be undertaken by the Agency with other State and Federal agencies to evaluate pesticide problems resulting from their use in agricultural production. Pesticide use surveys and water quality monitoring programs should be coordinated and effectively employed in the evaluation process.

* Integrated pest management programs are encouraged.

Chapter Four -- Construction: The emphasis of the WQM Plan, with regard to construction nonpoint source control, is preventative in nature. Construction nonpoint source pollution is not as widespread as other types of nonpoint source pollution in the State, but when it occurs it is usually significant. Effective programs for mitigating the impacts of construction nonpoint source control can be established using existing techniques and authorities. This is especially true at the local level. Additional coverage of this problem can be through improvement in administrative procedures and site practices by the developer of a site, whether they be either a private or public entity. From a statewide perspective, the control of construction non-point source pollution is a necessary support to the agricultural erosion and sedimentation control program.

* The WQM Plan emphasizes the development of technical and administrative guidance tools to assist responsible units of government and agencies in the selection of best management practices (BMPs) and administrative mechanisms for the needed nonpoint source control.

* Designated Management Agencies (DMAs) responsible for the control of construction nonpoint sources include municipal and county governments, soil and water conservation districts throughout the state as well as various state agencies (IEPA, IDOT, IDOC, and the ICDB).

* It is the primary responsibility of the state to control construction nonpoint source pollution arising from state

sponsored or directed activities. State Agencies responsible for regulating and reviewing construction related activities, such as IEPA, IDOT, DWR and IDOC, should consider necessary conditions in permits for water resource related projects to prevent pollution from these activities.

* All counties and municipalities should carry out some or all of the following preferred control practices for local nonpoint source pollution: Adopt and enforce standards and specifications for erosion and sedimentation control in developing areas; Adopt and enforce model ordinances which contain minimum standards for control in those areas currently under development; and where possible, better use of both local and state personnel, through training and education programs.

Chapter Five -- Urban Runoff: From a statewide perspective, the control of urban runoff is a necessary component to prevent impairment of water uses in an urban setting. Local units of government have primary responsibility for the control of urban runoff. Urban runoff studies in eight standard metropolitan statistical areas across Illinois indicated that lead, copper and iron exceed the existing general use water quality standards 25 to 30 times per year as a result of urban runoff at various points within each study area, and that the once a year maximum may be 15 to 20 times the standard. The Plan stresses three ways to reduce urban runoff pollution: 1) by controlling the design, construct, and maintenance of the drainage network; 2) by preventing polutants from entering the drainage network; and 3) by treating stormwater to remove pollutants before polluted runoff reaches a waterway.

* Research which will give technical and administrative guidance to the responsible units of government should continue. This includes continued analysis of National Urban Runoff Program (NURP) results to maximize its transferability throughout the State, analysis of the impact of urban stormwater on beneficial water uses, the relationship between air and water quality, and the standardization of technical and administrative urban stormwater runoff control practices.

* In northeastern Illinois, all appropriate municipal and county governments should implement measures to work toward a reduction in BOD in urban stormwater runoff from separately sewered areas.

* Municipalities and counties should adopt and enforce appropriate and adequate stormwater detention ordinances. Such ordinances should be consistent with the minimal standards set forth in the model ordinances developed by either the Northeastern Illinois Planning Commission (Suggested On-Site Stormwater Detention Basin Ordinance, January 1980) or Southwestern Illinois Metropolitan Planning Commission (Model Stormwater Detention Ordinance for Developing Areas, January 1982).

* It is the primary responsibility of the local, state or federal agency to control urban runoff contributions arising from their individually directed activities and facilities. Preferred control practices are administrative procedures for personnel training, improved equipment utilization and scheduling as well as controlled application programs for de-icing or other related right-of-way clearance programs.

* An program of education/information transfer should be initiated. The program would: 1) acquaint developers and local officials with the need for use of proper stormwater management techniques, 2) establish and promote anti-litter activities, and 3) inform homeowners of the proper use and application of fertilizers and pesticides.

Chapter Six -- Mineral Extraction Oil Brine Disposal: The Illinois Water Quality Management Plan identified seepage from brine holding pits, injection operations and abandoned wells as the major sources of brine pollution in Illinois. Oil brine pollution is particularly significant in Central and Southern Illinois. The major impact of brine damage in this area is the contamination and resultant decrease in productivity of the soil. The WQM Plan stresses that strict enforcement of existing regulatory guidelines for the disposal of oil field brines is essential for the protection of currently utilized and potential groundwater sources as well as surface water quality. From a statewide perspective, the control of oil field brine is a necessary component for the

compliance management of groundwater and surface water quality as well as the soil erosion control program.

* The State has primary responsibility through the Gas and Oil Division of the Department of Mines and Minerals (DMMR) for the control of water quality impacts from oil field brine. The control of erosion and reclamation of soil and water resources is a local responsibility.

* Technical guidance is necessary to aid in the selection of Best Management Practices to prevent water quality degradation and restore degrade soil and water resources.

* Local designated management agencies, should continue to inventory and categorize areas of oil field brine damage and should work for brine damage reclamation.

Chapter Seven -- Mineral Extraction/Mining: The Plan summarizes work various agencies on methodologies to assess water quality problems and on assessment of mine reclamation techniques. Studies of GERFDC, SIMAPC and other agencies showed that abandoned coal mining operations, closed before recent reclamation laws, constitute a majority of potentially polluting mine sites.

* Control of pollution from mining activities is necessary to protect waters of the State. Reclamation of abandoned mines and mine waste sites can improve water quality for legitimate uses. Water quality priorities for reclamation should be as follows: (1) public water supply watershed and (2) general use water.

* The maintenance of water quality affected by mining and quarry operations should be assured through interagency cooperation during permit review and the hearing process.

Chapter Eight -- Hydrographic Modification: The Plan defines hydrographic modifications as activities which alter stream channels in such a way that flow patterns are changed. Estimates indicate that one-third or 12,000 miles of the total streams mileage in Illinois has been altered. In Illinois, primary decision-making on hydrographic modification projects rests with the U.S. Army Corps of Engineers and the

Illinois Department of Transportation, Division of Water Resources. From a statewide perspective, the control of pollution resulting from hydrographic modification procedures is a necessary component for the maintenance of legitimate water uses in both urban and rural settings. The primary responsibility for the control of hydrographic modification impacts on water quality rests with the State.

* Illinois EPA, under Section 401 of the Clean Water Act of 1977, will review all applications for hydrographic modifications associated with dredging under Section 404 of the Act. In addition, IDOT, Division of Water Resources and Illinois EPA will jointly review all applications for permits for hydrograhic modification under Section 10 of the federal "Rivers and Harbors Act of 1899" and Sections 65 and 70 of "An Act in Relation to the Regulation of the Rivers, Lakes and Streams of the State of Illinois".

* Districts organized under the Illinois Drainage Code are considered designated management agencies for the control of hydrographic modification impacts. Local public and private interests, including drainage districts, should consider hydrographic modification alternatives that are less likely to cause water quality degradation in lieu of channel deepening and widening projects.

* The modification of permits and operation plans for existing impoundments for the improvement of water quality should be encouraged. Procedures for assuring adequate consideration of water quality impacts for proposed impoundments should be guaranteed.

* The Army Corps of Engineers should cooperate with the State and local jurisdictions in the siting of suitable dredge disposal areas, consistent with the provisions of Section 404(t) of the Clean Water Act of 1977 to maintain federal interest in navigation.

Chapter Nine -- Groundwater: The Illinois WQM Plan summarizes the nature of groundwater problems in Illinois. A large number of Illinois communities depend on groundwater as a water supply. However, numerous sources of contamination threaten this inadequately protected resource. Groundwater protection in Illinois is accomplished predominantly through

remedial action. Although this approach provides a reasonable degree of protection, better management of groundwater is needed. Protection of groundwater quality is a necessary component of an overall water quality management strategy and implementation responsibility is shared between state and local governments.

* The emphasis of the WQM Plan is to ensure the conjunctive management of ground and surface water.

* Areas which have a high potential for groundwater contamination should be identified and protected from pollution. The Illinois State Water Survey, Illinois Geological Survey, Illinois EPA and the U. S. Geological Survey should monitor groundwater in areas of high usage.

* Additional state and/or local control of contamination sources, based on existing authorities, should be actively pursued.

* A groundwater education program needs to be undertaken in order to underscore the importance of protecting underground water resources.

Chapter Ten -- Groundwater/Residual Waste: Residual waste is material (sludge) which is separated from point discharges of industrial, municipal or private waste treatment plants. This waste may contain pathogens, heavy metals, toxic or hazardous material which can cause water pollution. The WQM Plan emphasizes the need for the conservation and reuse of wastes. Needs include the better use of existing sludge management systems and education programs.

* The State, through Illinois Pollution Control Board Rules contained in Chapter 7 (Solid Waste) and Chapter 9 (Special Waste Hauling Regulations) is responsible for the regulations of solid waste disposal practices. In addition, the State is responsible for sludge disposal resulting from the operation of publicly owned treatment works through IPCB rules in Title 35, Subtitle C, Chapter I, Water Pollution.

* The Plan recommends consideration of disposal alternatives through Section 201, landfill compliance with IPCB regulations, proper practices in soil application, continued enforcement of hazardous or toxic standards and permits and education for those who work with sludge.

* The preferred method for disposal of domestic septage, land application, should be encouraged. Specific wastewater treatment plants should be permitted by the IEPA to receive domestic septage. Special consideration is given to conditions during winter when land application is not possible and septage that contains hazardous or toxic wastes.

* The disposal of water treatment plant residues or sludges should be evaluated on a case-by-case basis.

* Responsible local agencies should implement the most cost-effective sludge disposal/utilization schemes consistent with applicable regional and subregional residuals disposal plans.

* The Septage Disposal Plan adopted by NIPC for the six county Chicago metropolitan area is made a part of the Illinois WQM plan for application in its area. Specific recommendations are developed for sludge management in NIPC area communities.

Chapter Eleven -- GroundWater/On-Site Disposal: The Illinois Water Quality Management Plan emphasizes that properly installed on-site systems are of sufficient structural and mechanical integrity to be received as reliable wastewater treatment options. A key area for improving performance of on-site systems is in the procedures for improving quality assurance in terms of design, installation and management of systems. From a statewide perspective, the control of adverse water quality impacts from on-site disposal systems is a necessary component in the conjunctive management of ground and surface water. The responsibility for the proper use and placement of on-site systems is shared between the State and local units of government.

* The State has primary responsibility, through the Illinois Department of Public Health (IDPH) and those counties acting as designated agents of the State, to ensure the effective enforcement of the Private Sewage Disposal Code. In those instances where urban or county health departments act as a local independent authority, they are primarily responsible for enforcement of the appropriate private sewage disposal ordinances or codes.

* It is the primary responsibility of the State to ensure that the administration and application of the IDPH Private Sewage Disposal Code and the IEPA Construction Grant Program be closely coordinated.

* The education/information function should be stressed. This includes both the public and private sectors. All state and local agencies involved with on-site disposal should be kept informed of current developments in on-site disposal technology, and should provide on-going training for their staff. The development of a regular schedule and program of training seminars on septic tank installation and maintenance for licensed contractors and new applicants is encouraged.

Chapter Twelve -- Stream Use/Water Quality Standards: The present Illinois Water Quality Standards have been in effect since 1972. The uses that a given water will support should be directly reflected by the water quality standards assigned to it. The identification of attainable stream uses and supporting water quality criteria are the cornerstornes of the water quality management planning proces. The primary responsibility for the establishment of water quality standards and their revision rests with the Illinois Pollution Control Board.

* The emphasis of the Illinois WQM Plan is to ensure that water quality standards are established and maintained in a manner consistent with the 1970 Environmental Protection Act. This includes the review of existing water quality standard, establishing a process to tailor water quality standards to existing and potential uses of a stream segment and ensuring that public water supplies are protected from degradation.

* The Illinois EPA will work with adjoining states to assure that waters flowing into Illinois meet applicable Illinois water quality standards at those points of entry.

* The designated areawide WQM agencies will assist the Illinois EPA in the process of developing attainable water quality standards for water bodies in those areas.

Chapter Thirteen -- Management: Effective treatment and control of existing sources of pollution and the prevention of future water quality problems are dependent on an effective management system being established to implement the WQM plan. From a statewide perspective, an

effective management system is the key factor in maintaining and implementing the WQM Program.

* The Water Quality Management Plan emphasizes the development of an acceptable and workable Statewide WQM management structure based on the existing state and areawide management systems established in the four Illinois certified and approved WQM Plans.

* This WQM Plan identifies and designates as WQM agencies all entities necessary for the implementation of an effective Statewide WQM program.

Future Implementation Needs

Nonpoint sources contribute significant pollutant loadings to the surface waters of Illinois. Agriculture, particularly row crop agricultural practices, is the single most significant activity to degrade the water resource base of Illinois. Certain other nonpoint sources contribute large quantities of pollutants to the water resource base. In Illinois hydrographic modification, construction erosion, coal mining, and salt water intrusion due to secondary recovery production techniques for petroleum are other significant nonpoint sources. The distribution of problem occurrence also contributes to the complexity of implementing statewide abatement strategies. For example, coal mining activities and petroleum extraction are generally restricted to the southern one-third of the State. On the other had, construction related nonpoint sources are geographically dispersed throughout the State.

Nonpoint source abatement strategies not only face the complexities of geographic problem dispersion, they also must account for site-specific nature of nonpoint source control techniques. This situation is the direct opposite of the point source control programs

which have evolved in the State. These programs rely on a system of process controls, wasteload allocations, permit conditions and a heavy public sector subsidy through the construction grants program. As a result, the management system for point source control can be centralized without a loss of program effectiveness and abatement efficiency. Nonpoint source controls, from a management and implementation standpoint, are currently decentralized. Not only are these control programs decentralized, their primary focus is not necessarily water quality oriented. An example of this management orientation are the cost-sharing programs available to the agricultural community. While much work has been done in Illinois to improve the targeting of cost-sharing resources, these programs still inherently are designed for soil conservation rather than water quality.

In addition, point sources are of primary concern during low flow conditions of surface water systems while nonpoint sources (except for acid drainage from inactive deep mines and baseflow contributions from groundwater sources) are of minimal impact under these conditions. However, nonpoint sources of pollution are most critical in terms of negative impact on water resources during high flow conditions when point sources have little to no impact on water quality. Consequently, these technical and management differences in point and nonpoint source controls are significant and must be accommodated in order for the State to fulfill the mandates of the Clean Water Act. If they cannot be effectively integrated and resolved, nonpoint sources may negate many of the water quality gains achieved by the costly (in terms of capital investment) reductions achieved through point source effluent limitations.

In summary fashion, the following items highlight the implementation needs for nonpoint source control in Illinois:

1. Construction site runoff affects urban areas similar to agricultural erosion. Programs are directed at major growth areas since the control BMPs are preventative. The focus of the program is to assure local authorities deal with the problem. In many cases the local soil and water conservation district has authority and works conjunctively with municipal government. The following activity areas require implementation assistance:

   a) Technical/legal support to adopt and enforce appropriate ordinances
   b) Distribution of standards and specifications procedure to guide local activities in a consistant manner

2. Urban runoff is a problem in major urban areas of Illinois. The control strategy generally encompasses stormwater detention basins or combined sewer overflow treatment. Control options are generally corrective and not preventive. Although erosion may be found in urban areas, control generally is geared toward constituents from urbanization and also respond to spills of chemicals or other material within the urban area. The following activities required initiatives to assure implementation:

   a) Design and construct urban flood retention basins sufficiently sized to also achieve water quality benefits. The incremental increase in design size for water quality is proportionally small.
   b) Work with high priority communities which elected to study alternative controls for combined sewer overflow problems to assure central strategies provide water benefits.
   c) Support effective local storm ordinances development and effective enforcement practices and procedures.
   d) Develop an educational program to inform homeowners of the proper use of fertilizers, pesticides and chemicals as well as proper disposal of containers.

3. Oil field brine has been a problem in many southern counties. The old brine pits require reclamation in addition to brine escape to surface and groundwater, the area is highly vulnerable to erosion. Incentives are necessary to mitigate damages to water supplies and waterways. In extreme cases, deep soil ripping and/or detention structures may be necessary. Since brine storage in pits is no longer permissable, the control is strictly corrective for critical sites.

4. Hydrographic modification is a significant problem affecting over one third of our waters. Channelization, deepening, relocation and changes to waterways not only causes water quality changes but also impairs aquatic habitat and water uses directly.

   Control strategies for both urban and rural streams and lakes can be preventative or corrective. The following BMPs require incentives to implement:

   a. In stream practices to enhance biological use including drop structures, jetty construction, and bed material placement.
   b. Shoreline/riparian corridor practices including tree/grass planting, bank stabilization, and livestock fencing.

5. Agriculturally related soil erosion control has been identified as the highest priority non-point water quality problem in Illinois. As has been alluded to in previous sections of this discussion, the Illinois EPA has been successful to a degree in working with agriculture organizations in abating soil erosion. However, without further incentives and program flexibility these programs will have reached the limit of their usefulness in combating this problem. Although traditional agricultural programs such as those sponsored by the Soil Conservation Service (SCS) and the Agricultural Stabilization and Conservation Service (ASCS) have been modified to a degree in order to accomodate water quality concerns, they are still inherently directed toward the issues of soil productivity and soil stewardship. In order to develop an agricultural nonpoint source control program which addresses the problem of soil erosion and sedimentation as a water quality issue, new initiatives could be effectively utilized:

   1. Provisions for funding BMP's in areas exclusively for the purposes of water quality enhancement and restoration;

   2. Targeting additional funding for the application of BMP's in lake watersheds.

   3. Funding of point and non-point source controls in watersheds conjunctively to maximize water quality benefits for the least amount of capital expenditures.

Mr. ROE. Please proceed.

TESTIMONY OF ROGER A. KANERVA, MANAGER, ENVIRONMENTAL PROGRAMS, ILLINOIS DEPARTMENT OF ENVIRONMENTAL PROTECTION AGENCY

Mr. ROE. Let me interject if I may.

Your statement is very comprehensive and we have included your full statement in the record. I, too, have looked at your statement.

Would you like to defer to Mr. Kanerva, Mrs. Martin, and let him make a short oral statement and then we will receive questions.

Mrs. MARTIN. I am so anxious to find the answers I couldn't even wait.

Mr. KANERVA. I do thank you, Mr. Chairman, and members of the subcommittee, for having us here today.

I am testifying on behalf of the Illinois EPA and the State of Illinois.

I view this round of reauthorization of the act to be as important as the original 1972 initiative. The program is truly at a major crossroads. That is both the institutional and technical framework of the program need careful examination.

What must not be overlooked in this analysis are the significant changes that the past decade has brought which in turn call for rethinking of the strategy we can use in the 1980's. In my written testimony I have given you a summary of these changes and how we think they are applicable.

With these thoughts in mind, I would like to emphasize these points for this testimony. Adequate concern for good government has gotten lost in the fracas these past 10 years. As a State program manager, I can assertively report to you that along with the good things I accomplish in this program I also do a lot of dumb things as part of my role in the clean water program.

I say this in partial reply to certain parties that choose to conveniently sidestep this issue of good government with simplistic political slogans about clean water versus dirty water people.

The rest of my comments will quickly address a number of major issues pending during this reorganization with a view toward demonstrating that good government is not synonymous with dirty water.

Issue 1: Life after BAT. Sounds serious and it is. There is no question that adequate toxics control is a problem which deserves further attention of the clean water program. However, I remain convinced that the considerable shortcomings of the singular pursuit of the priority pollutant codified in the NRDC consent in 1976 and the Clean Water Act of 1977 is not the way to go.

Good government calls for a more targeted effort on toxicity problems at specific facilities. I have been very encouraged by a couple of recent events along this line. Last week I had a chance to take part in the EPA workshop at Airlie House, and the whole thing was about when to do what testing and they are headed in a positive direction in that whole effort.

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Recommendation—Congress should insure that U.S. EPA and the States have sufficient direction and flexibility to pursue a balanced attack on the toxics problem using appropriate mixtures of chemical specific techniques and toxicity assessment to address both human health and aquatic life concerns.

Issue 2: The pretreatment opportunity. The real issue is good government, in my book. If some locally based programs are already achieving the intended results—by that I mean protecting the treatment facilities, not causing receiving water problems and taking care of the sludge adequately—then why in these trying economic times should we abandon successful local programs for a more expensive, less workable Federal program?

Recommendation—the national pretreatment control program should provide for alternative local-based programs under certain conditions. We set forth four detailed specifications in the written testimony.

Issue 3: the challenge of nonpoint sources. I support a renewed national emphasis on the need for nonpoint source control. I welcome reasonable and fiscal responsible enhancements of the nonpoint source program.

Recommendation: We need to constructively build upon the base provided by certified and approved water quality management plans developed by the States and more forward in a phased fashion using voluntary approaches and incentives as funding, so as not to exceed our capacity to adequately define the rules of the road.

Issue 4: our progress in construction grants. The grants program is still in the regulatory throws of sorting out major reforms enacted in 1981. I had the chance 2 years ago to testify before your subcommittee, Mr. Chairman, which was a real opportunity and I again want to thank you all for a super job in sorting through those reforms. It was a real battle and what we got is at least workable.

I do want to make the point with you today that there are some transition delays in getting all that worked out. The regulatory stuff is still being worked on so we are in a general sense behind with obligation targets but there is no problem in terms of catching up. I want to make sure that that does not reflect negatively on the 205(g) delegation process.

In terms of Illinois' situation, we have a backlog of over $200 million worth of projects ready to go beyond the money we will receive in the next 2-year period. That is excluding major things in Chicago. So there is plenty left to do.

Recommendation: Congress should continue to support the authorization and appropriation of Federal construction grants assistance.

Issue 5: this is the very "noncontroversial" water quality standards debate. U.S. EPA clearly created a firestorm with their proposed reform regulations last fall. No problem getting interest in that one. U.S. EPA has now regrouped and backtracked to what I think is a supportable stance. Concern for good government calls for exercising judicious restraint in not reacting in kind legislatively to the regulatory miscues of last year.

Recommendation: Congress should maintain the current provisions of section 303 of the act relating to water quality standards.

Issue 6 and the last one: general program operations. Given current levels of Federal funding support we have been able to maintain a stable program in Illinois. I remain optimistic about eventually realizing the potential for effective operation of the Federal-State partnership under the act. Once again persistence pays.

The 205(g) delegation for construction grants has worked well.

I know this committee was instrumental in some of those initiatives but I cannot say the same for the NPDES program unfortunately.

Recommendation: Congress and U.S. EPA should implement positive reforms that will further streamline the program operations for NPDES.

I respectfully suggest that there is now a place for good government and a reasonable measure of trust. Yes, a real wild word like "trust," among principal movers of the national clean water program. We on the front lines need responsible reforms at the national level if another round of self-fulfilling prophesies of inadequacies of public administration is to be prevented.

Thank you very much for including us and I would be pleased to answer questions or supplement the record with more information if you desire.

Mr. ROE. Thank you for your summary, and I defer to Congresswoman Martin.

Mrs. MARTIN. Thank you, Mr. Chairman.

We were wise to listen, since I think you have at least covered briefly my first question. That is, pretreatment by local government units, using local government units, if they are in place. Would you comment to a greater degree, should there be, in fact, must there be that alternative within any legislation?

Mr. KANERVA. We feel strongly that there be—should be. To put it as strongly as I can in Illinois, we have 3,000-some industries felt to be subject to pretreatment in 754 publicly owned treatment works in the State. That 3,000 industries is 20 percent greater than the entire direct discharge program that I run as a State manager now. That covers some 2,500 discharge permits. So it is a big issue with us.

It brings us to this committee wanting to make the points about the need for running the pretreatment program effectively. It is not like we have just a few folks we have to deal with out there.

We have gotten well along the way toward evaluating the local entities and can share with you thoughts about just how the legislation ought to approach that issue.

Mrs. MARTIN. Staying within that same subject area, what costs and benefits do you see for federally designated pretreatment on those treatment plants that are publicly owned? I get—after your reply—Mr. Chairman, I would like to put into the record specific reasons for that question.

Mr. KANERVA. We have been studying intensively the 41 POTW's we have that are greater than 5 MGD flow. Our reason for that is that that subportion of our public treatment works are mandated to have programs under the Federal regulations.

Now, of those 41, 25 of them that we have studied receive no additional benefit at all from implementing the Federal pretreatment program. They already have local limits they enforce, the plant is

OK, the receiving water is OK, and the sludge is managed OK according to our permit requirements and all.

Now, 13 of the 41 stand to gain at least a little benefit and only one really absolutely would make major strides ahead. In other words, they have not done well at all with pretreatment.

That results, when you consider the number of industries in those differing categories—the 25, 13 and 1—that results in 86 percent of our industries now today receiving adequate pretreatment control. That is without the Federal program.

Mrs. MARTIN. The reason for this specific question, Mr. Chairman, it is something that doesn't happen usually on the local basis. In my largest city, a referendum actually passed for sewage treatment, a massive system, done looking ahead, looking ahead to the fact that industry was important, industry united with environmental groups, with community groups, and passed by an incredible percentage this mostly locally funded and federally helped entire sanitary facility.

I happen to have had the highest unemployment in the United States, 22 percent. Were this legislation to go into effect and achieve the goals it envisions, this would cost the same industries today that now pay a pro rata share—who imposed that cost on themselves and fought for this—impose an additional $15 million with no benefit to the environment, no benefit to the industry, and surely no benefit to the workers because some of those businesses, of course, are in very fragile economic-circumstances.

So that I would hope that one of the things from Mr. Kanerva's testimony comes the point clearly that if the legislation describes a goal and allows flexibility in how to achieve it, that we don't lose sight of the goal, that we don't allow backsliding, that we don't allow the excuse of time or even the economy. But if that goal is being achieved, we must assure all concerned that we do not additionally impose costs that would have no benefit for any purpose whatever except the rule.

Lastly, I would appreciate it if you would look at tables 1 and 2 in your testimony. One of the purposes for me on public works, frankly, was to watch out for Illinois, both Republicans and Democrats. I wonder if you could say again that for a majority of Illinois areas that are already reaching the goals what legislation without the flexibility of allowing that to count would mean, including my own home city of Rockford?

Mr. KANERVA. Again, this table 1 is the detailed layout of those figures I summarized before. This table has 41 POTWs on it. As I said, the last column refers to the assessment of whether there would be any benefit at all, a little or a major benefit to communities in Illinois to understanding the additional cost and problems of the Federal program.

As I say, 25 of the POTWs receive no benefit; 13 receive very limited benefit; 1 receives a major benefit. Again, that represents 86 percent of the industries that are listed on these columns already being under effective control without the need for this additional work.

One thing I didn't—two things I didn't mention were that you brought up the point about the expense to industry, which is excellent in the one situation. We have talked to some of the POTW's

on this list in the 41, we don't show costs, but in the written text we indicate it would range as high as $1 million a year additional expense, operating expense, to add the Federal pretreatment program on top of what they are doing, and they won't get any benefit in terms of what the plant will see, the plant will see or sludge disposal will see.

At the State, in the worst case, the State expenses may nearly double.

Now, there are not State dollars and I don't think there are additional Federal dollars to pay another $1.5 million which we are already paying for the direct discharger program. So I am stuck in a situation where from the State level if these facilities were to be implemented, my costs to participate might double, the resources are not there, so I either do less enforcement of the direct dischargers, which means that imposition of the Federal program becomes a dirty water program, I don't do as well with direct dischargers and I would lose ground. So I get set back.

Or, alternatively, I limp into the pretreatment program and wind up with a dog-faced version to play along, but it doesn't get me anywhere.

Mrs. MARTIN. I would have to add selfishly that of the cities that receive no benefit that have those pretreatment plants, however, all the cities in my district receive no benefit, just costs. So obviously my bias is clear. It is a bias toward flexibility of achieving the goal; in no way do I suggest nor do I think—nor is Roger suggesting changing the goal.

I would hope under your leadership, Mr. Chairman, that that flexibility could be built into the legislation that will come from this committee.

Thank you.

Mr. ROE. I thank the gentlelady from Illinois. The gentleman from Missouri.

Mr. YOUNG. No questions, Mr. Chairman.

Mr. ROE. The gentleman from Oregon?

The gentleman from Oregon passes.

Mr. DONNELLY. The gentleman from Massachusetts passes.

Mr. ROE. I think your testimony is excellent. Let me tell you what I like about it; it is technical but it is realistic. You centered on the important issues when you spoke to good government aspects and then to make rules and regulations where rules and regulations alone will not solve this.

Let me ask you, what is your backlog in needs now for you in Illinois?

Mr. KANERVA. What I gave you was the backlog of ready projects over the next 2 years we know funding is coming in on. That at least is at the $200 million level. Our total backlog is several billion.

Mr. ROE. Several billion.

I wonder if what may be happening; try this on for size, there is no sense in spending a ton of money to do more plans and specs if you know that on the projects you will only get so much money, so you are concentrating on the areas that will be productive. If you got $2 billion in backlog—we have better than that in New

Jersey—there is no use in doing plans and specs because there will be 10 years past before you get the money.

Mr. KANERVA. We have slowed up very much in pushing people to start. We are concentrating on what we have on the boards.

Mr. ROE. That is the point. As far as New Jersey, Illinois, Pennsylvania, Oregon, whatever, Massachusetts, there is no sense of our throwing good money out there if we are going to be 10 years down the line before we get funded because of the way $2.4 billion is divided. It would seem logical if we really wanted to take the steps we wanted to do above and beyond programmatic changes and more local determination, the investment of funds are necessary. Somebody has to invest.

Mr. KANERVA. Yes, sir.

Mr. ROE. From a priority point of view, what does the Congress want to do in its priorities with all the budget constraints we have? Do we spend the money here or don't we? Does it also seem reasonable that whether it is $2.4 billion three or 1.9, I don't think anyone has assessed where we go with the limited funding without slipping backwards.

Mr. KANERVA. I am not sure I understand.

Mr. ROE. Our pollution problems will be with us until the day we die because we got changes taking place all over the Nation. We have growth here and there, and different things, so it is an ongoing thing. But the purpose of the act was to get to a point somewhere at a time certain where we would have the handle on it and as we grew. We could move ahead and refine technology and build to fit it.

From all the testimony we have had over the last 6 or 8 months on this program, that the $2.4 billion is inadequate for us to begin to meet our goals. And beyond that, if you add additional heavy programmatic responsibilities and beefing up your staff needed in the pretreatment aspect, you have to put another 300 people on, who will pay for it?

If you have to cannibalize existing staff, people have more to do and they just physically can't do it. Is that a reasonable point to make?

Mr. KANERVA. That is right.

Mr. ROE. So, what we are saying is without a reasonable level of adequate funding, instead of the program ahead, the program will remain static or it will fall behind. Isn't that a reasonable point to make?

Mr. KANERVA. I see your point. Yes, it is, and one of the key points in the beginning of the act was to get everyone up to a minimum level——

Mr. ROE. With a date certain to do it in?

Mr. KANERVA. And from there on they carry their own cleanup efforts locally. And we are just slipping and slipping.

Mr. ROE. Therefore, when we talk about reauthorizing the bill, we are reauthorizing, granted there will be changes made that are necessary, but that is not the solution to the problem. The solution is to what level investment do we want to make in the program? Is that reasonable to say?

Mr. KANERVA. That decision has to be come to grips with if the rest of it will mean anything.

Mr. ROE. OK. If there are no other questions, we want to thank you for your splendid substantive testimony. We appreciate your appearance today. We are going to be looking into your suggestions.

Next we have Mr. Jack Stein, manager of environmental engineering planning, Anheuser-Busch, from the St. Louis Regional Commerce & Growth Association.

TESTIMONY OF JACK STEIN, MANAGER, ENVIRONMENTAL ENGINEERING PLANNING, ANHEUSER-BUSCH, INC., REPRESENTING ST. LOUIS REGIONAL COMMERCE & GROWTH ASSOCIATION

Mr. STEIN. Thank you, Mr. Chairman.

Mr. ROE. We want to welcome you to our committee.

First of all, the distinguished gentleman from Missouri, Mr. Young, will offer a formal welcome.

Mr. YOUNG. Mr. Chairman, I appreciate the opportunity to welcome Mr. Stein. When you see the Anheuser-Busch label there, it does whet everybody's appetite to some degree. We are pleased that you are here, Jack.

You heard some questions coming from Mr. Donnelly and others who recognize the corporation with the eagle and all. We are not doing so well in the standings in the National League, but I want to welcome you here and to follow the Representative from Illinois, the St. Louis Regional Commerce & Growth Association affects both parts of the metropolitan St. Louis area.

So I want to welcome you to the committee, and I look forward to your testimony.

Thank you, Mr. Chairman.

Mr. ROE. The gentleman will proceed.

Mr. STEIN. The St. Louis Regional Commerce and Growth Association appreciates the opportunity to appear once again before this subcommittee to express our views on amendments to the Clean Water Act. RCGA members number over 3,000 and represent business, industry, labor, institutions, and organizations on both sides of the Mississippi River at St. Louis working for economic development in the bi-State region.

RCGA recognizes the improvements in our national water quality which have been brought about by the Clean Water Act. We believe that clean water and economic development are both important and need not be in conflict. We are also concerned about Federal programs which do not measurably move us toward our national environmental goals but which do saddle our local economies with major financial burdens.

I will confine my remarks on behalf of RCGA today to three areas: Mandatory secondary treatment; pretreatment for the control of toxic pollutants; and risk assessment as a technique for directing our national clean water program.

Let me first address mandatory secondary treatment. The requirements of section 201 were written before the staggering capital costs of uniform secondary treatment were realized and before the impacts of the energy shocks of the 1970's on operating costs could be foreseen. Congress has recognized since Public Law 92-500 was passed that in certain instances mandatory secondary treat-

ment is not needed—in the case of ocean discharges—just as it realized in 1972 that some sensitive water bodies merited more protection than secondary treatment alone provided. We request the Congress to examine the need for secondary treatment in selected inland locations as it continues to "fine tune" the Clean Water Act.

The flow of the Mississippi River through the St. Louis region, although seasonally variable, is very great. The average discharge during calendar year 1982 was 278,700 cubic feet per second—180 billion gallons per day—enough water to support a community of 1.2 billion people.

The BOD and suspended solids content of the river is also highly variable, reflecting the predominant influence of rural, nonpoint sources of these pollutants on the river. Under average conditions, upstream sources contribute 24 pounds of BOD for every pound discharged from our largest treatment facility. The proportion of suspended solids is even more lopsided.

These findings are consistent with a 1978 GAO study which showed "that planned expenditures of Federal funds for secondary treatment works in the St. Louis, Missouri area will only minimally improve the quality of water in the Mississippi River."

The GAO report also concludes that:

> Because available Federal funding for municipal wastewater treatment projects falls far short of national needs, we believe available funds should be directed to those projects where improvements to water quality can be optimized. The national requirement to provide secondary treatment may be too rigid, and Environmental Protection Agency regulations may preclude the earliest financing of pollution control projects which have greater potential for improving water quality.

The current cost estimate—1983—for adding secondary treatment at the Bissell Point sewage treatment plant operated by the Metropolitan St. Louis Sewer District is in excess of $300 million. This cost equates to a capital expenditure of $672 to remove each pound of BOD generated daily.

Since the activated sludge process requires high energy consumption, $15 million will be needed every year for electricity alone, with an additional $10 million annually for other operational costs. The expected impact of these added capital and operating costs will be a threefold increase in current residential user charges. This cost increase will pay for the removal of less than 4 percent of the BOD loading in the Mississippi at St. Louis.

Current estimates of annual power consumption for operation of the secondary treatment process at the Bissell Point sewage treatment plant are approximately 136 million kilowatt-hours. This equates to the annual power consumption of over four typical major hospital complexes.

The GAO report quoted earlier in this testimony suggests that mandatory addition of secondary treatment in certain cases may prevent funding of other projects which would have a more direct and immediate effect on water quality projects.

In St. Louis, at or above river stage 20, approximately 60 percent or greater of the dry weather sewage flow cannot reach the existing treatment plant. River water inflow control gates by design must be closed to prevent backwater flooding of the treatment system.

The river is above stage 20 more than 20 percent of the time during average rainfall years and more than 50 percent of the time during high rainfall years.

Current 1983 estimates for construction of a computerized, hydraulically operated gate system for 28 flood wall pump stations to correct this situation is $62 million. We see no logic in increasing the treatment level of a system which is incapable of receiving a large proportion of wastewater generated by the community.

It is recognized that secondary treatment has a varying capacity for removal of toxic organics and heavy metals. The percentage removal varies among treatment plants. Utilizing a large secondary treatment system as a safeguard against the discharge of toxic pollutants into receiving waters does not seem justified.

Economies of scale are only applicable to the removal of pollutants for which a system is designed, i.e., compatible pollutants for POTW secondary systems.

It is more effective and certainly more efficient consideration interaction of toxics with other wastewaters to remove toxics at the source and thereby prevent their entry into the sewer system.

This concept was thoroughly recognized by Congress in Public Law 92-500 and in its 1977 amendments, Public Law 95-217. The pretreatment of toxics by the generating source prior to discharge is the logical methodology to utilize for protecting the sewer system and treatment processes from damage preventing the pass-through of such substances into receiving waters or the contamination of treatment plant residues.

At this point, I would like to amplify RCGA's views with respect to the Federal pretreatment program.

The existing programs being administered under the Clean Water Act for control of conventional and toxic pollutants are based upon national technology based standards and mandatory secondary treatment.

While RCGA supports the basic objective of the program, RCGA feels that the implementation lacks flexibility and is not cost-effective in terms of water quality improvement versus resources expended for sometimes unmeasurable water quality benefits.

To achieve the goals under the Clean Water Act in an efficient manner, RCGA believes that regulatory flexibility must be available to responsible publicly owned treatment works in the form of, one, performance equivalency as compared to mandatory secondary treatment; and, two, pretreatment equivalency as compared to the current national pretreatment program.

As noted earlier, RCGA believes that mandatory secondary treatment, as a uniform national requirement, is not justified in terms of both water quality improvement and the cost of compliance.

We are especially concerned about the current EPA endorsement of secondary treatment as an overall solution to toxic pollutant control. While some data are available which demonstrate that some removal of toxic pollutants does occur in secondary treatment systems, this could not and should not be extrapolated to all the thousands of POTW's across the United States.

We believe that the record should be set straight on this issue:

Secondary treatment or an equivalent POTW specific performance standard does not guarantee a defined level of toxic pollutant control.

Toxic pollutant removals will always vary from POTW to POTW due to the wide number of variables which exist within such complex systems.

Cost-effective control and removal of toxic pollutants is best handled at the source of generation by cooperation between the POTW and its industrial users.

The existing pretreatment program, with its implementation based on national categorical standards, severely limits the ability of POTW's to provide cost-effective treatment to the entire community for the removal of toxic pollutants.

RCGA is concerned with the adverse impact the current national pretreatment strategy will have on the economic viability of many manufacturing establishments which are the life blood of our community.

We are concerned also about the obvious technical deficiencies and inequalities of the current program. Aside from these concerns, the current program and regulations will involve POTW's in one of the most horrendous paper processing activities since the conception of the Clean Water Act.

Our local pollution control agencies will need to significantly increase their pollution control budgets to meet the numerous record-keeping and data processing requirements of the regulations without any direct measurable benefit to water quality.

RCGA supports an alternative approach which will take into consideration local agency capabilities to develop equitable solutions to local water quality needs. If a POTW can demonstrate that it can develop and implement a program which will meet national pretreatment objectives and maintain receiving water quality, it should be given the opportunity and responsibility to do so.

We envision a pretreatment program operating at the local level which would contain major operational elements as follows:

The local agency should have the discretion to implement the pretreatment program on a pollutant by pollutant basis based upon the type of toxic pollutant discharged for treatment, concern for system protection, identified water quality goals, and residuals quality acceptance.

A pretreatment program should enable a POTW to develop specific discharge limitations which could then be applied equitably throughout its system of sewers and treatment plants.

Any technical or pretreatment equivalency program should only be made available to the local agencies that can demonstrate they have the technical, financial, and legal resources necessary to support effective operation of such a program.

Implementation of a pretreatment program can best be handled through modification and reissuance of the POTW-NPDES permit with the same checks and balances which exist currently under the national pollutant discharge elimination system.

The end-of-pipe monitoring concept must apply not only to the POTW but to the industries discharging to the POTW treatment system to determine compliance with established effluent and discharge limitations.

Any pretreatment program should enable the authorization of a single effluent limitation for a specific pollutant, for a specific period of time, such as 3 years, or for the duration of the POTW-NPDES permit.

Any developed local pretreatment program should not require dischargers of conventional pollutants to remove such pollutants as a substitute for municipal treatment adequate to meet the requirements of the POTW-NPDES permit.

At this point, I would like to speak to the topic of risk assessment. RCGA is gratified with the increased attention this concept is receiving in the regulatory community. We believe that sound scientific and technical bases should underlie our national environmental protection programs.

We cannot continue to ignore the economic consequences of goals such as "zero discharge," particularly when ever-smaller environmental and health risks can be defined. Sound science and sound engineering should be used as the tools for determining the risks and benefits of such programs as uniform national secondary treatment.

With such information in hand, informed decisions may be made by EPA, with appropriate public participation, such that the twin goals of a safe and healthy environment and the wise use of our limited economic and other resources may be realized.

Thank you.

Mr. ROE. We want to thank you, Mr. Stein, for your substantive testimony, and also for many of the ideas you have presented. I think they have a lot of merit. Are there any specific questions?

The gentleman from Missouri.

Mr. YOUNG. Thank you, Mr. Chairman. Jack, we hear a lot about the decay in infrastructure of our cities. What will the increased cost of secondary treatment do to our cities' abilities to raise local funds to replace their old and failing sewer systems?

Mr. STEIN. I think, as you know, Congressman, on the Missouri side, MSD has had some tremendous problems with sewers that go back into the 19th century. If we increase residential charges for secondary treatment by a factor of three, it is going to be very difficult to obtain local funds through bond issues or other means, to take care of the collection systems, and of course, without the collection systems, the treatment plants can't do their job.

Mr. YOUNG. Mr. Stein, do you think our Federal funds earmarked for secondary treatment plants would be better spent then on infrastructure replacement?

Mr. STEIN. I think that is the way we feel, Congressman. I think the voters have been very supportive of the clean water program over the years, but I think they also demand value for the moneys expended, and certainly it is difficult to make a case for imperceptible changes in streams such as the Mississippi River, and we can't continue with our decaying sewer systems and maintain them in the way that they should.

Mr. YOUNG. Thank you very much.

I have no further questions, Mr. Chairman. Thank you very much.

Mr. ROE. The gentleman from Oregon.

Mr. SMITH. No questions.

Mr. ROE. Mr. Stein, one point I think that you are coming down on above and beyond all of the other important matters you presented, would be based upon the thesis that with $2.4 billion allocated, at least at the perceptible future, those funds are inadequate. We have asked other witnesses to be able to meet the ongoing needs that the States and their political subdivisions have at this point, and maybe if it is determined that that is the maximum, which I think is a national tragedy of the Federal investment, that is to be made over the foreseeable years. Because of budget deficits or whatever the reasons, priorities, that maybe there ought to be a very serious look on a State-by-State basis and come back and say the following:

That it is not good enough to set up, have the States allowed the prerogative of setting up their own, through public hearing, their own priority system. Unless they direct their attention to the needs in their priority system to be able to achieve the first goals first, the most important ones is the substance of your discussion.

It is a partial political problem, as I am sure you are aware. You have got 145 politicians. They are trying to follow what the Congress directed them to do. You have got to have no discharges at a given point, you have got to have secondary treatment. How come your city isn't ready and how come your city is ready and the whole bit? But you are coming back and saying that might be politically ideal to be able to do it that way, but that is not solving the pollution problem?

If a particular city or a particular region of a State need extra funding at a given point to be able to clear up more of the pollution, should they not be given a separate priority because of that situation?

I think that is basically what you are saying.

Mr. STEIN. That is correct.

Mr. ROE. So just mandating certain mechanical things is not going to necessarily clear up the pollution, unless you have the funds to do it with.

Mr. STEIN. I would say that certain mandatory standards made sense 10 or 15 years ago when a large number of our communities had no treatment at all, and certainly they have made tremendous strides, in no small part due to the construction grant program under Public Law 92-500, Public Law 660 and others.

I think, as we get further along in this program, we have got to take a closer look at the benefits that are actually received and adjust our priorities accordingly.

Mr. ROE. But basically everybody that has testified in the last series of hearings we have had, have come back to the underlying point—that you can't achieve the goals unless you are willing to make the commitment.

Mr. STEIN. That is correct.

Mr. ROE. That is basically what it is about, and who is going to pay the bill, isn't that really what it is about?

Mr. STEIN. That is correct.

Mr. ROE. I have no more questions.

Any further questions?

If not, we want to thank you very much for your patience and your indulgence. Your testimony is excellent. We appreciate your taking the time to be with us today.

Mr. STEIN. Thank you very much, we appreciate it.

Mr. ROE. Our last distinguished witness for the day is Mr. Michael Dimino, who represents the Authorities Association of New Jersey. Therefore, I am particularly interested at this juncture and to what you have to say.

I want to welcome you to our committee. I appreciate your patience in waiting. If you would proceed.

TESTIMONY OF MICHAEL A. DIMINO, PRESIDENT, AUTHORITIES ASSOCIATION OF NEW JERSEY

Mr. DIMINO. Thank you, Mr. Chairman, and members of the committee. I have been sitting here since 10 o'clock this morning hearing all these buzzers and whistles going on and off and I was hoping that prematurely someone would not end the session.

I am appreciative of that.

By way of background, the Authorities Association of New Jersey is an association of over 200 water supply and sewerage agencies and professionals from throughout New Jersey whose chief objective is to promote the general welfare of its members through communication among the regulatory agencies, other related trade groups such as the Utility Contractors Association and, of course, all of our members.

In short, we are concerned about the management of the environment by the most cost-effective and equitable means possible. It is this latter concern that brings us to comment about Congressman Howard's proposal to reauthorize the Clean Water Act through 1988.

First and foremost, the association applauds Mr. Howard's efforts. AANJ has gone on record in the past and continues to assert that the grants program is the most equitable and affordable means for all U.S. citizens to share the cost of environmental protection.

To place the financial burden solely upon the users of sewage treatment works is inequitable since this ignores the benefits gained by everyone in this country from the clean waters produced by the expensive operation of sewage treatment sytsems.

In this regard, it is only appropriate to state that the proposed level of funding that Mr. Howard is proposing, meets with AANJ's complete approval. However, the funding percentage should be flexible and be allowed to go as high as 75 percent. It should be up to the Governor to approve lesser amounts, but not less than 55 percent.

On other particular points of Mr. Howard's proposal: One, we agree that EPA should be required to publish a list of waters designated for fishable/swimmable in connection with the implementation of best available technology. EPA's certification that the failure to meet standards is due entirely or substantially to discharge of toxics from a point source is also acceptable.

Two, we agree with the limitations of waivers under section 301(h). The association would add, however, that if such exceptions

for waiver are met by a POTW, the EPA be given a time limitation to approve the 301(h) waiver requests.

Three, we agree that States should be required to adopt numerical criteria for toxic pollutants when revising water quality standards. The numerical criteria should be technically supported, however, and should serve to guide realistic pretreatment removal limitations.

That is the formal feeling of our association. I would like to add a couple of personal views on the term of "affordability."

I would like to give you some real facts on a project in New Jersey, which has already been implemented with the grace of God.

My employer is a regional sewerage utility that services the Princeton area of New Jersey, and we were fortunate enough to have received a 75-percent grant in 1976. The point of this example is that in 1976 we had a 75 percent Federal grants program, and in New Jersey we had an 8 percent matching grants program, as you know, Mr. Chairman.

We were also fortunate enough to fund our local 17 percent share with 5.9 percent financing, and with all of that, between 1976 and January of 1983, construction costs have gone up about 65 percent, according to the Engineering News record building cost ratios.

The point of all this is with all of that in mind, and relatively cheap costs compared to today, we are passing approximately $150 a year to each home owner in the Princeton area of New Jersey.

If that same project, which incidentally costs about $55 million, were built today, under today's scenario of 65 percent funding in New Jersey, or as the existing law will go out into 1985, going to 55 percent, those rates would at least triple.

So what I am saying is that we need an affordable means of achieving our goals, and yes, we wholeheartedly support that grants program as the way to do it.

I will add that I heard remarks this morning from Wayne Bryant, assemblyman representing Camden, and Camden County is one of the members of our association, and we are very sympathetic to their plight.

I will be very grateful to either send you more information or answer any questions.

One more point I would like to make that I haven't heard come up today is that when we build these plants, yes, we are achieving environmental benefits, but I think one thing that we have to not lose sight of is that we are providing a big stimulus to the economy, and I am sure the Utility Contractors Association can certify that they certainly employ many people to build these plants, and that after these plants are built, they are not operated by "donkeys and alligators."

They are operated by human beings that work and derive a good living from operating the plants. In New Jersey, we have thousands of people employed, maybe close to 10,000 throughout the State in our industry, and these are jobs that continue, and if they are law-abiding citizens, they contribute to the tax system that supports this country. I do want to make that point.

Mr. ROE. Very good. We appreciate your testimony.

I think you have summed up and brought into focus the areas of our own deepest concern, because it boils down to the point of view that if we don't have adequate funding to be able to do the job that has to be done, it is not going to be done, No. 1.

No. 2, if we attempt to impose an enormous burden back upon those people that are coming down the line now, it really wasn't any fault of their own that they were delayed, it might have been complex engineering involved. They weren't on the priority list, now they have to pay four times as much as for any other system.

I think that is the point you made.

Mr. DIMINO. Yes, sir.

Mr. ROE. Thank you for being here today. We appreciate your thought processes and appreciate your help.

Mr. DIMINO. Thank you.

Mr. ROE. Ladies and gentlemen of the committee, we have concluded today's session. We will recess until the call of the Chair. We are now, for the benefit of the members, working out the advance schedule. We have still quite a number of witnesses to hear, so we will be working together on both sides of the aisle to establish the next phase of our hearing process.

In the meantime, the subcommittee will recess.

[Whereupon, at 3:15 p.m., the subcommittee recessed subject to the call the Chair.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

TUESDAY, OCTOBER 18, 1983.

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to call, at 9:30 a.m., in room 2247, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen.

The Subcommittee on Water Resources will continue its hearings on the Clean Water Act. We have been having a great number of these hearings, as you know, and we have more to go. We are getting a wide review from throughout the Nation on the many, many issues that are involved.

I see that Mr. Hammerschmidt is here. Do you have an opening statement?

Mr. HAMMERSCHMIDT. No, Mr. Chairman.

Mr. ROE. Well, we do have with us our very distinguished colleague from Maryland, Hon. Roy Dyson as our first witness this morning.

Mr. Dyson, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

PREPARED STATEMENT OF CONGRESSMAN ROY DYSON

Mr. Chairman and distinguished members of the Subcommittee, I want to thank you for inviting me to testify a second time before you on H.R. 2817, legislation I introduced earlier this year that would amend the Clean Water Act to provide for the enhanced water quality of the Chesapeake Bay.

In my previous testimony of August 2nd, I indicated that the Bay is the major economic and environmental resource of my home State of Maryland and is of extreme importance to all states in the Chesapeake Bay region. It provides thousands of people with jobs in the fishing and outdoor recreation industries, particularly constituents of mine in Maryland's First Congressional District. It is a thoroughfare for nearly $240 million in maritime commerce annually. And it is home to countless forms of marine and aquatic life.

My purpose in speaking to you today is to bring you up to date on significant events in the ongoing effort to improve the quality of the Bay.

First, at the end of September, the Environmental Protection Agency released its official findings from the Chesapeake Bay Study. This seven-year, $27 million effort answered some of the most pressing questions about the conditions of the Bay. These results, however, only indicate how much work remains to be accomplished.

I take some satisfaction in the completion of this project since I secured the funding to finish this analysis in the final days of the 97th Congress.

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The EPA's report clearly indicates that the Bay is an ecosystem in decline. It suggests that actions throughout the Bay's 64,000-mile watershed can affect the water quality of the rivers flowing into the Bay. Degradation of the Bay's water and sediment quality can, in turn, affect the living resources in it.

Thus, effective management of the Chesapeake Bay must be based on an understanding and an ability to control both point and non-point sources of pollution throughout the Chesapeake Bay basin. It is clear that to achieve this there is a need for the Federal government and the states to work together closely to develop specific management plans that address the regional problems identified by the EPA.

Mr. Chairman, it is clear that the final report of the EPA's Chesapeake Bay Study points to the need for a solution that I hope will begin with the inclusion of my Bay legislation in the re-authorization of the Clean Water Act. It provides the necessary federal incentive, $10 million in each of the next four fiscal years, to prompt the states in the Chesapeake Bay Basin to devise a comprehensive and effective management plan. In return, the States must commit themselves to pay an amount equal to 45 percent of the total cost, or roughly $8 million annually over the same time period.

The second event of importance in our efforts to clean-up the Bay since August took place just yesterday in my congressional district, when I hosted some key colleagues of mine from the House of Representatives for a trip on the Bay. These Members represented virtually every area of the country, were both Democrats and Republicans, and all of them demonstrated a keen interest in preserving the Chesapeake Bay.

I took them to my district, which encompasses almost all of the Bay, to give them a first-hand glimpse of the Chesapeake's beauty and the problems it currently faces.

I am pleased to report that the response from this bi-partisan group was enthusiastic for efforts to save the Bay and for my legislation in particular. Tom Bevill of Alabama, Chairman of the Energy and Water Development Appropriations Subcommittee, pledged his total support for the initiative, reinforcing his long-standing concern for the Bay. I was also happy that another of my Southern colleagues, Mr. Hammerschmidt of Arkansas, and a member of this Subcommittee (who is here today), could join me, demonstrating his commitment to saving the nation's largest estuary.

The presence of this group of distinguished legislators, who represent such diverse constituencies, symbolizes the growing national consensus to protect one of our country's greatest natural resources. That same growing consensus is urging passage of H.R. 2817 as a crucial first step in this preservation process. This support compliments the regional support for my Bay legislation. Currently the bill is cosponsored by all members of the Maryland and Virginia Delegations, and over two-thirds of the members from Pennsylvania, three of whom are members of this Subcommittee. In addition, the governors of all three states have publicly endorsed the bill.

Because the Chesapeake Bay is our largest and most productive estuary, the efforts we make to enrich and preserve it can serve as a model for resolving pollution problems in other estuaries in this country. Dr. Joseph Mihersky, the University of Maryland's top expert on the Chesapeake Bay, who accompanied me yesterday, said, "the whole nation is watching how we handle the Chesapeake Bay. Prompt action to enact policies that will preserve this valuable body of water will be seen as the example of how to reach the necessary consensus in resolving estuary pollution."

Mr. Chairman, I believe that Dr. Mihersky's point is well-taken and coincides with the intent and structure of my Bay legislation. It calls for an effective and creative means of federal-state cost-sharing so as to be realistic in an era of restrained government spending. These funds will be used to deal not only with the Bay itself, but with the river basins that contribute the nutrient run-off that has caused much of the estuary's decline.

Yesterday's trip on the Bay was a historical event because it involved such a broad spectrum of Congressmen who are interested in supporting legislation that will clean-up the Bay. Such a development has never happened before with respect to the Chesapeake.

The legislation which I am offering as an amendment to the Clean Water Act has that same unprecedented significance. It is an important first step in restoring and maintaining the Bay's ecological integrity.

I hope that in the future, Mr. Chairman, you and the other members of the Subcommittee will be able to join me for a tour on the Bay so as to acquaint you first-hand with its present beauty and its future needs.

Mrs. James Michener, wife of the author of Chesapeake, commented yesterday on our trip that saving the Bay is an important and unique way by which we can im-

prove the region's quality of life. I believe that the inclusion of my Bay legislation in this year's re-authorization of the Clean Water Act is the needed first step to insure this much-needed improvement for the citizens of the Chesapeake Bay region.

Mr. Chairman and members of the Subcommittee, I urge you to include my bill in the Committee's version of the re-authorization of the Clean Water Act. Then we can be certain that we have made the best step in beginning a new era for the Bay. I again want to thank you for your past cooperation and your future consideration.

Thank you.

Mr. ROE. Please proceed.

TESTIMONY OF HON. ROY DYSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND

Mr. DYSON. Thank you very much, Mr. Chairman, my friends, and colleagues. This is a little different from the last meeting where I appeared before you. Quite a few members heard me then. This is a more intimate gathering.

Mr. ROE. This is a quality gathering.

Mr. DYSON. I recognized that right away, Mr. Chairman. I was just talking to my friend here, and he indicated that with your permission, I would ask unanimous consent to submit a statement. Since we are a smaller group this morning I prefer to sort of speak off the cuff, first of all to tell you how much I appreciate——

Mr. ROE. Let me accept first, your formal statement will be included in the record.

Mr. DYSON. I would like to again thank you not only for this hearing but the hearing you held back in August when you gave me the opportunity to testify on behalf of the Chesapeake Bay bill that I have introduced, H.R. 2817. As you know, I am attempting to amend this legislation to the Clean Water Act.

What it would do is basically provide grants to the three States, Pennsylvania, Maryland, and Virginia, to set up an interstate management coordination team for the Chesapeake Bay region. This would put the cleanup process in motion. As you know, yesterday some members of your subcommittee and some members of the committee I sit on, merchant marine, took a tour of the Chesapeake Bay. We had just had presented to us the $27 million EPA report begun back in 1976 that showed a number of things about the Chesapeake Bay.

First, it indicated it is an estuary in decline and that most of that decline can be attributed to human activity. I think what we are attempting to do is to try to reverse this decline and restore the bay to what it once was. We have a monumental task on our hands. The EPA report addressed issues like sedimentation in the Chesapeake Bay. Of course, that is coming from both agricultural, rural, and urban runoff. Very often we like to point the finger at our farmers and talk about agricultural runoff, particularly fertilizers like nitrogen and phosphorus that are having a devastating effect on the Chesapeake Bay.

That finger can also be pointed to our sewage treatment plants; and they, in their efforts to make the effluent as pure as possible, have been also flushing a tremendous amount of nitrogen and phosphorus into the estuary.

Toxic compounds are a very serious problem for the Chesapeake Bay. We know that there are about 308 toxic chemicals, or what

are called heavy metals, are dumped into the Chesapeake Bay. They come from three major tributaries, the James, Susquehanna, and the Potomac. Neither of those tributaries has its origins in the State of Maryland.

These kinds of issues are very critical to us if we are going to attempt to clean up this estuary. You know, I look with some favor on what congressional concern for the Great Lakes has done to reverse the damaging trends in Lake Erie and the other Great Lakes.

I see what Great Britain has done with the Thames River, which had pollution problems like the Potomac. They have cleaned that up. Rome has attempted to do the same thing in Italy. But the Chesapeake Bay is a unique estuary. It is one of the largest inland bays in the world. If we can clean up the Chesapeake Bay, and the entire Nation is looking toward us in that effort, I believe there isn't any environmental task that we cannot accomplish. Restoring the bay is what we need to do.

Now, I say we because it is a task that is far too big for the State of Maryland. It is too much for the State of Pennsylvania. It is too much for the State of Virginia. In this whole vast region of about 64,000 square miles where all the major tributaries are that enter the bay we need to develop a comprehensive approach to the Chesapeake Bay. And I think we can do it.

As I told you in the last hearing that you held at my request, and I thank you for that, the Governors of Maryland, Pennsylvania, Virginia have gotten together. They are putting the beginnings together of a program on a regional basis to clean up the bay. Last Friday I was part of a process, along with the Governor of Maryland, that accepted reports from the chairmen of various workshops that were established to devise plans to restore the bay. I understand Governor Robb is doing the same thing, and Pennsylvania is going to follow soon.

There is going to be a Chesapeake Bay conference for December 7-9, at George Mason University in Virginia. Its purpose is to coordinate all those efforts so that by the time that your committee, and I hope we will have my legislation in it, reports out its bill, the three States will have a working group established that will, in fact, be able to make a presentation on their plan to help restore the bay. Then the State officials can go back to their own State capitals with a proposal that will in fact work to clean up this Chesapeake Bay.

Now, what can we do? I represent basically the rural eastern shore. I also have parts of southern Maryland and part of the Baltimore suburbs. Of course the finger is pointed at us all the time about the agricultural runoff for these areas. As you know, this PIK program that we are currently wrapping up with this harvest has had a tremendously, positive effect in cleaning up the waters of the Chesapeake Bay by allowing farmers to take land close to the shoreline out of production.

We have experienced a devastating drought this year. As a result, we need to be careful about the expectations we place on farmers this year.

Through our Soil Conservation Service, which has been encouraging no till farming, we are seeing attempts along our shoreline to stop runoff of the fertilizers that have in the past been so damag-

ing to the water quality in the Chesapeake Bay. So there are practical ways to stop pollution.

The bill I introduced that I am asking you to include in your omnibus bill to reauthorize the Clean Water Act would, in fact, encourage our States to be more responsive. It is not a "big brother" approach where we would attempt to come in and tell farmers how to prevent runoff. We are giving them the financial potential to come up with an acceptable plan for the Chesapeake Bay region.

But again, let me emphasize that it is too big a task for Maryland, it is too big a task for Pennsylvania, it is too big for Virginia. It is too big for the three of them together. The States are going through a tremendous financial scrutiny right now. We are having revenue shortfalls. As you know, many States are required by their constitutions to have balanced budgets, Maryland in particular. The only option they have is to raise taxes to pay for this sort of thing.

Our Governor has indicated he may even be willing to do that. He feels that strongly about the Chesapeake Bay. But we do need the Federal help. If we can show the world, and I think the world is watching us, that the Chesapeake Bay can be restored, it will serve as a model method for preserving estuaries.

As you know, Mr. Chairman, off the coast of New Jersey, there is a critical ocean pollution problem facing us. If we can do it for the bay, I think we can demonstrate that we can deal with any environmental problem in the world.

I again thank you for the opportunity to be here today, and again my purpose is to urge you and your staff to include my bay bill as a part of your overall bill when you mark it up later this year.

Mr. ROE. I want to thank the gentleman for his valuable testimony.

Let me ask you, basically one thought that occurs to me, Roy, in that report—I am sure it is 5 feet thick.

Mr. DYSON. At least.

Mr. ROE. Is there any particular synopsis or breakout in that report that relates to the status of the sewage treatment facility program along the bay? That would affect all three States.

With the cutback that was made in the grant money for our sewage disposal construction program, plant construction program, I am just wondering what effect that has had upon the bay, per se.

One of many pieces of legislation pending now is to try to importune both the Senate and House and the administration to increase the quantitative dollars available from $2.4 billion a year to $4.3 billion or $5 billion as it was before, to accelerate the sewage disposal plant construction program under the Clean Water Act. It would be helpful to us to specifically ascertain what is the situation in the States of Maryland, Virginia, and Pennsylvania on their construction program and how has that slowed down the cleanup program you are speaking about to the Chesapeake Bay. That would be helpful.

Mr. DYSON. We would be glad to get to that information. I can give you sort of a brief summary of what is happening in Maryland. I had a long conversation with our Governor about that because of that very situation. As you know, in Maryland, through

the department of health and mental hygiene, revenues from the Federal Government are given to local jurisdictions or municipalities who in turn, construct the treatment plants.

The Governor is very much concerned because most of the treatment plants are on tributaries that eventually empty into the Chesapeake Bay. He feels that obviously the local governments are not going to be able to come up with the cost sharing or make up that difference. If the Federal Government doesn't make up the difference he is prepared to seek the funds at the State level. It is going to be very costly. We are going to have to pay for it somehow or other, but it is the only thing we can do if we are serious about cleaning up the Chesapeake Bay.

We would be glad to get that information for you.

[The information follows:]

PREPARED STATEMENT OF CONGRESSMAN ROY DYSON ON THE CONSTRUCTION GRANTS PROGRAM FOR THE CHESAPEAKE BAY REGION

Mr. Chairman, as you know, to assist communities with upgrading their Publicly Owned Treatment Works (POTW's) to meet secondary-treatment regulations, the Clean Water Act established the Construction Grants Program. It is a Federal and state cost-sharing program.

The attached table summarizes the Federal dollars spent on the Construction Grants Program within the Chesapeake Bay basin between 1972 and 1983. Basin-wide, nearly 2.5 billion dollars was spent by the Federal government to improve the level of wastewater treatment. When added to the approximately 25 percent share paid by the states, municipalities and local governments, the total amount spent is almost 3.3 billion dollars.

I am also attaching for the record a section of the recently-concluded Environmental Protection Agency's Chesapeake Bay Study that explains the situation in the Chesapeake Bay region with respect to the Construction Grants Program in some detail:

"Data indicating what has been bought by these [construction] grants in terms of water quality improvement are scarce, but nonetheless encouraging. One of the areas in the Chesapeake where water quality trends are improving is the Potomac River. Approximately one billion dollars were spent there to limit POTW loadings. During this period, the volume of effluent (flow) discharged by POTWs in the James more than doubled, yet the BOD_5 load was nearly halved. Nutrient discharges have continued to increase in the James relative to flow because secondary-treatment is the highest level of treatment required there. In the Potomac, there has been a similar increase in flow, but both the BOD_5 and phosphorus loads have been reduced, the latter due to implementation of phosphorus effluent limitations at Blue Plains and other sewage treatment plants discharging to the upper Potomac. Improvements in water quality observed since the late 1960's in the Potomac estuary are principally attributed to these reductions obtained through the NPDES and Construction Grants programs. In areas where nutrients are contributing to poor water quality, secondary-level treatment alone is not effective in curbing phosphorus or nitrogen loadings; some form of advanced wastewater treatment will be needed to limit further nutrient enrichment due to point source loadings in problem areas of the Bay.

"Nutrient enrichment in the main stem of the Bay is currently being addressed by implementation of the EPA's Upper Chesapeake Bay Phosphorus Limitation Policy. This policy, approved by the EPA for funding in 1979, was established to reduce increasing chlorophyll *a* concentration in the upper Bay, an indication of eutrophication. Under the Upper Chesapeake Bay Policy, Maryland and Pennsylvania have imposed phosphorus effluent limits on POTWs impacting this area. In Maryland, the policy requires all point sources with flows greater than or equal to 0.5 MGD discharging into the Maryland portion of the Bay north of and including Gunpowder River (Zone I), or POTWs with flows greater than or equal to 10.0 MGD between Gunpowder River and the southern edge of the Choptank River (Zone II), to meet the effluent limitation 2 mg L^{-1} effluent. In Pennsylvania, state regulations require 80 percent removal (approximately equal to 2.0 mg L^{-1} effluent) of phosphorus of all new or modified wastewater treatment facilities discharging to tributaries

and the main stem of the Susquehanna River below its confluence with the Juniata River.

"Chesapeake Bay Program modeling studies indicate that full implementation of the Upper Chesapeake Bay Policy will only maintain existing point source phosphorus loadings to the Susquehanna River in the year 2000. More stringent phosphorus limitations may be necessary in the future to improve upon the present condition of the upper Bay.

"In the Potomac River basin, phosphorus limitations at the larger POTWs has resulted in water quality improvement of the tidal-freshwater portion of the river. In the Patuxent River basin, the State of Maryland is preparing to limit nitrogen effluent concentrations, as well as phosphorus, in an effort to reduce chlorophyll *a* concentrations in the tidal-freshwater portion and to alleviate low DO concentrations in the lower reaches of the river. Water quality monitoring over a number of years will be necessary to determine the effectiveness of this policy once implemented. Then, based on water quality improvements in the Patuxent, Bay-area states may choose to limit nitrogen from sources contributing to other problem areas around the Bay.

"Although loadings of conventional pollutants and nutrients, to some extent, have been lowered by existing programs, compliance monitoring data indicate that nutrient loads could be further reduced if permit compliance were improved. National EPA statistics on plant performance indicate that at any point in time, 50 to 75 percent of the POTWs are somehow in violation of their NPDES permits. (Statistics may include administrative or effluent violations and do not necessarily reflect the severity or duration of the violations.)

"The Maryland Office of Environmental Programs, Department of Health and Mental Hygiene, estimates that in 1983, six (17 percent) of the 56 major municipal dischargers were not in compliance with either BOD_5 or TSS permit limitations. The Virginia Bureau of Enforcement, State Water Control Board, estimates that in 1982, 21 (37 percent) of the 56 major POTWs were not in compliance with either BOD_5 or TSS permit limitations (VA SWCB 1982). The Bureau of Water Quality Management, Pennsylvania Department of Environmental Resources, estimates that approximately 20 percent of all wastewater treatment facilities in the Susquehanna River basin were not meeting their BOD_5 and TSS permit limitations. A higher percentage of facilities, however, in the lower Susquehanna River basin (below the confluence with the Juniata River) that are required to remove 80 percent of the phosphorus load, are not meeting their phosphorus permit limitations.

"In summary, although loading trends for both POTWs and industries indicate continuous reductions in certain conventional pollutants and nutrients in certain areas, the improvements may be inadequate. Secondary-treatment, the minimum POTW discharge limitation, is not designed to control nutrients, and permit noncompliance is evident. Another concern is the fact that may segments of the Chesapeake Bay system are showing early or advanced signs of nutrient over-enrichment and oxygen depletion that parallel historical trends in the Potomac. The inability of some localities to improve wastewater treatment capabilities in step with population growth and the need for water quality protection indicates that many of the gains made in point source controls during the past decade have leveled off or are being hampered by administrative and technical problems such as operation and maintenance (O&M) deficiencies and lack of pretreatment."

CONSTRUCTION GRANTS PROGRAM FUNDING OF THE CHESAPEAKE BAY DRAINAGE AREA (WITH THE EXCEPTION OF NEW YORK)

[Dollars in millions]

State	Step 1—Planning		Step 2—Design		Step 3—Construction		Step 4—Design/construction		State total	
	Number of projects	EPA amount	Number of projects	EPA amount	Number of projects	EPA amount	Number of projects	EPA amount	Number of projects	EPA amount
District of Columbia	13	$14.2	2	$0.7	5	$165.1			20	[1] $180.0
Delaware	10	0.8	8	1.2	14	33.2	5	$8.4	37	[1] 43.6
Maryland	143	19.7	74	27.0	201	835.1	43	42.6	461	[1] 924.4
Pennsylvania	75	7.5	29	13.5	144	557.3	15	27.6	263	[1] 605.9
Virginia	70	7.3	51	20.3	85	643.5	6	5.6	212	[1] 676.7
West Virginia	11	1.1	12	2.4	12	23.5			35	[1] 27.0
Region	322	50.6	176	65.1	461	2,257.7	69	84.2	1,028	[1] 2,457.6

[1] This amount represents 75 percent of the eligible cost of the projects.

Mr. ROE. Are there any other questions to the gentleman from Maryland?

Mr. Hammerschmidt.

Mr. HAMMERSCHMIDT. Mr. Chairman, I would just like to comment that I was among the group that went down to the Chesapeake Bay yesterday. Of course we have heard a lot of testimony on it, and we are very familiar with the background of that study. But being there on the bay sort of emphasizes the fact that the Nation's largest estuary is one of our important national resources. It is probably appropriate to make sort of a pilot program study to see how good we are at cleaning up the Nation's water.

Roy didn't mention, I am sure it is in his statement, just the economic impact is tremendous. I think they do about $240 million a year in just maritime commerce, probably all the other economic factors add up to a couple billion dollars in what the Chesapeake provides in the way of the economy of the Mid-Atlantic.

I don't want to digress, but given this opportunity, I will for a moment. In my own district we have a lake that is deteriorating. It isn't an estuary. It is a Corps of Engineers lake, a large one, probably 60 or 80 miles long. At the headwaters of it there are two counties where the population has doubled in the last 10 years.

So you can compare the two to some degree in that we have the phosphorus and nitrogen from agricultural runoff and perhaps to some degree from sewage plants. We have to regulate industrial waste. We have the photosynthesis problem that exists from the browning and greening of agricultural runoff and industrial waste that Dr. Mikursky taught us about yesterday.

Mr. DYSON. Taught us all to become experts, didn't he?

Mr. HAMMERSCHMIDT. And I only mention this in totally supporting our friend Mr. Dyson's interest, but also saying that around the Nation I am sure that we have a lot of problems. We all know this, but I did want to mention I have one real close to home as well. But I do have great interest and support of your effort.

Mr. DYSON. I very much appreciate your coming on the trip yesterday. You added an awful lot to it, along with our colleague from San Diego, Mr. Packard, and the gentleman from Georgia, Mr. Rowland.

Mr. ROE. The gentleman from Georgia.

Mr. ROWLAND. Mr. Chairman, I want to express my appreciation to our colleague, too, for the opportunity to go to the Chesapeake Bay yesterday. I had not been there before. This was my first trip. And flying over the area I saw that there is a lot of agriculture in that area with a lot of farms right down to the water's edge. The presentation that was made to us about the greening and browning of the water and photosynthesis, as our colleague from Arkansas mentioned, was very good and certainly gave me some insight into what was taking place there.

I had an opportunity to talk with one lady who said, I believe, they were harvesting about a million bushels of oysters now, and several years ago they were harvesting 5 million bushels of oysters. Certainly a great change has taken place in the ecology of that area that I wasn't aware of. It was a very good trip for me, and I wanted you to know that.

Mr. DYSON. Thank you. I appreciate your coming.

One of the things John Paul just talked about is that yesterday we had a particularly beautiful day. James Michener's wife joined us, saying to me just before we started out, you are bringing your colleagues out here on the wrong day. I asked why she said that. She said it should be raining and bleak and cold so they will go away with the impression that we ought to do something about this. And I said no, I don't want them to go away that way. But one of the people on the trip said to me that everything looks fine on the bay. But yet when we pulled into the dock I said you don't see any bay grasses any more in this area, the Kent Narrows, which was once filled with bay grasses. The geese we saw flying over and the ducks we saw on the pond there, they fed on those grasses at one time. These geese live primarily in the Atlantic Flyway, which the bay is part of. These grasses are what they fed on for many, many years.

I am sure you remember seeing some of the people associated with the trip feeding them. People are doing that more and more, and this is not part of the natural system. The natural process is missing now. You know, 400 million gallons of effluent are dumped into the Chesapeake every year. This kind of manmade pollution is catching up with us. If we don't do something, it is going to be at a point where we can't reverse it any more. It is just going to be too late.

We don't believe we are at that point yet and with your help I think we can prevent that from ever happening.

Again, I thank you for coming yesterday.

Mr. ROE. Any further questions of the gentleman?

The gentleman from California.

Mr. PACKARD. Just one comment, Mr. Chairman. I think that the problem our colleague, Mr. Dyson, brings out is a problem that extends certainly throughout the entire estuary of the Chesapeake, but also I think it extends across the country. I am speaking, of course, about nonpoint sources of pollution. I am not sure we have well identified a policy that addresses that issue generally. This is certainly a case in point that is very graphic and important to this area and to the whole country. But I think it extends to all areas, and perhaps at some point in time this committee ought to look at that whole issue of nonpoint sources of pollution.

I think we are finding ourselves in a position of addressing nonpoint pollution in terms of specific areas rather than as a general broad conceptual problem for the entire country.

Mr. ROE. If the gentleman would yield on that point, it is my intent to recommend to the committee that we get into that as a special issue in this whole review of the legislative process.

Mr. PACKARD. I don't think that ought to hold up procedural——

Mr. ROE. No, no, particularly the Chesapeake Bay, of course.

Mr. PACKARD. Or any other specific area that is struggling now. But I appreciate your comment that we are going to be looking at that. I see that as a serious problem all over.

Mr. ROE. Are there any further questions? Well, we want to thank the gentleman for his splendid testimony. We look for that other information on the sewage disposal. I am interested in that from the point of view how it relates in the timeframe of getting the bay further cleaned up.

Mr. DYSON. I think if things stay the way they are and we are not able to meet that obligation, I think we are going to see something dramatic in a negative way, probably in just a very short time. And it seems to run counter to everything we are attempting to do.

Mr. ROE. We thank the gentleman for his testimony.

Mr. DYSON. I thank you for the opportunity to be here this morning, with this intimate crowd of members of your committee.

Mr. ROE. Good.

Our next witness is Mr. Ross Swimmer—is Mr. Swimmer here?—representing the Council of Energy Resources of our Indian tribes; is that correct?

Mr. SWIMMER. Yes, sir.

Mr. ROE. You are going to be filling in for Wilfred Scott; is that correct?

Mr. SWIMMER. Yes, sir.

Mr. ROE. The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF WILFRED SCOTT, CHAIRMAN, COUNCIL OF ENERGY RESOURCE TRIBES AND VICE CHAIRMAN, NEZ PERCE TRIBE

My name is Wilfred Scott, Vice-Chairman of the Nez Perce Tribe and Chairman of the Council of Energy Resource Tribes (CERT). I am please to have this opportunity to testify before this committee on behalf of the 37 tribes that make up the Council of Energy Resources Tribes. CERT urges this committee to adopt amendments to the Clean Water Act that would recognize Indian tribal governments and provide full protection for water quality on Indian reservations.

CERT is a coalition of Indian tribes that own and produce energy resources. Our goal is to assist member tribes develop the capability to manage our resources to provide economic prosperity on our reservations in a manner that is consistent with each tribe's goals. To accomplish this CERT gives tribes technical assistance in economically and environmentally sound resource development practices.

The Indian tribes that belong to CERT produce, oil, gas, coal and uranium. Last year Indian tribes produced over half a million barrels of oil equivalent in these resources. The potential for greater production is tremendous.

Resource development can mean jobs, income and tribal revenues, all of which are badly needed on economically depressed Indian reservations. But resource development can also have serious environmental affects which must be controlled if energy resource development is to be an acceptable path to economic prosperity for Indian tribes.

Environmental quality is particularly important to Indian tribes. The reservations are our homelands to be protected and preserved for future generations. The maintenance of a tribe's limited land base is essential if the tribe is to achieve lasting

economic prosperity. For Indian tribes the land is what ties our people to our traditions and our history.

Managing the environment on Indian reservations, is, therefore, of major concern to the tribes and CERT. Unfortunately the Clean Water Act does not provide adequately for the protection of water quality on Indian reservations. This is so because the Act does not recognize or support the authority or tribal governments to control water quality on Indian reservations.

The Clean Water Act authorizes EPA to delegate to states responsibility for implementing most of its provisions. It also authorizes funding to state governments to support state programs. But the Act makes no mention as to who should regulate on Indian lands nor does it provide funding to support the efforts of tribal governments to do so. The result has been a regulatory vaccum on Indian lands.

States cannot assume authority on Indian lands because Indian tribes are not political subdivisions of states, as are local governments (see U.S. v. Wheeler, 435 U.S. 313, 329 (1978)).

Nor would it be appropriate for States to be given authority to implement the Act on Indian lands. Federally recognized Indian tribes have a direct relationship, established by treaty or executive order, with the federal government. This direct relationship is seen by tribes as essential to the continuation of our existence.

Furthermore, it is to tribal governments that Indian people look for environmental protection. Only tribal governments are able to protect the reservation environments in a manner consistent with the goals and values of the Indian people they represent. But because the Clean Water Act does not recognize a role for tribal governments no one has clear authority on Indian lands.

The tribes wish to reiterate their very strong desire to develop viable, technically sound environmental resource management programs on the reservations. Just as important, the tribes are committed to develop these programs in cooperation with the EPA and affected state agencies and in full compliance with federal environmental legislation and regulations. In other words, the tribes are willing and able to take on the responsibility of environmental regulatory enforcement consistent with federal policies and requirements and in cooperation with the states.

A few tribes have sought to fill this regulatory vacuum with their own programs to control water quality but have met with another obstacle: the Act provides limited support for tribal programs.

The Clean Water Act authorizes financial assistance to all levels of government including tribal governments. But, unfortunately those asistance programs that have served as a critical base of support for water pollution control programs are not available to Indian tribes. Specifically, Section 106 grants which provide comprehensive grants to states to support the administration of programs for the prevention, reduction and elimination of water pollution are not available to Indian tribes. Seciton 201 Construction Grants are technically available to tribes but in order to qualify, tribes have to compete with populated cities on a state priorty list. This is because tribes are defined inappropriately as municipalities by the Act. Thus, tribes are effectively foreclosed from the Construction Grants Program. Also, Indian tribes are not eligible for the Water Quality Management Planning grants under section 205(j) of the Act. This program would allow tribes to develop water quality baseline information and to conduct planning for water quality programs.

Indian tribes are eligible for Section 208 Water Qualty Management Area Waste Treatment Program grants. But, in fact even that source of funding has been foreclosed to tribes as money has not been appropriated for the program since fiscal year 1981.

In spite of the lack of adequate support tribes have not stood by and done nothing to manage water quality. Attachment 1 is a description of the efforts of several tribes in this area. These efforts, largely planning and baseline data gathering, represent a start, but they are far from adequate to protect water quality on Indian lands. But without adequate assistance tribes, like states, lack the resources to develop full regulatory programs.

It was certainly not the intention of the Congress to leave any area of the country uncovered by the Act. Yet that is what has happened on Indian land. The only way to correct this problem is for Congress to clearly define implementation authority on Indian lands and to authorize funding for tribal governments.

The Board of Directors of CERT passed a resolution in November, 1982 calling for amendments to the Clean Water Act that would provide tribal governments with recognition, authority and assistance equal to that given the states (attachment 2). Based on that resolution CERT urges Congress and this committee to amend the Act so that EPA would be authorized to delegate authority for implementing all provisions of the Act on Indian land to tribal governments. It is anticipated that

only the larger reservations with significant surface water problems will participate in water quality management programs on this reservations. When a tribe is not able to assume authority or does not wish to do so EPA should have authority to carry out the Act on Indian land. Furthermore, those assistance programs which have provided the backbone of support for state programs should be made available to tribes.

By incorporating these recommendations as amendments to the Act, the Act's deficiency with respect to Indian lands would be corrected in a manner that is consistent with the historic relationship between Indian tribes and the federal government. This solution would recognize the proper role and responsibility vested in tribal government by their citizens to protect their land and their people.

CERT believes that our recommendations are in the interest of sound public policy and environmental health. They are also in the interest of Indian tribes striving to responsibly exercise their right of self-government. CERT's recommendations would ensure that tribal governments have the authority and the means to manage water quality for the benefit of present and future generations of Indian people.

ATTACHMENT 1.—PARTIAL LISTING OF TRIBAL INITIATIVES TO CONTROL WATER QUALITY

Tribe	Water quality problem	Project outputs
Southern Ute	Agricultural Pollution, soil erosion, salinity	Best management practices, guidelines for farming.
Ute Mountain	Salinity, soil erosion, irrigated agriculture	Guidelines for farming practices.
Blackfeet	Agriculture pollution, oil and gas drilling, timbering, hydroelectric.	Water quality standards, compliance and enforcement program, instream flow requirements.
Northern Cheyenne	Instream flow, mining	Water code development, source inventory and assessment, mining best management practice.
Fort Peck	Power plant impact on Popular River	Source inventory and assessment, water quality standards and classifications.
Fort Belknap	Domestic wells, septic tanks, mining	Source inventory and assessment water quality management plan.
Flathead	Agriculture, domestic sources, oil and gas	Water quality management plan.
Rocky Boys	Septic tanks and lagoons	Water quality inventory and assessment.
Crow	Agriculture sources of pollution, toxics, energy development.	Point source and nonpoint source inventory and assessment, management strategy.
Fort Berthold	Agriculture nonpoint sources, erosion	Instream studies, inventory and assessment.
Turtle Mountain	Agriculture pollution	Best Management practices and guidelines for agriculture.
Frandreau	Individual septic systems	Assessment and remedial action.
Standing Rock	Septic systems, stream bank stabilization, rangeland.	Inventory and assessment.
Crow Creek	Waste water treatment, stream bank stabilization.	Do.
Cheyenne River	Rangeland, septic tanks, heavy metals	Do.
Lower Brule	Irrigated agriculture, septic tanks, rangeland	Do.
Yankton-Wagner	Streambank stabilization, landfills, agriculture septic systems.	Do.
Pine Ridge	Rangeland, mining septic systems	Do.
Rosebud	Rangeland, septic systems, pesticides	Do.
Siseton-Wapheton	Agriculture, septic systems, lakes	Do.
Northern Utes	Lake eutrophcation, nonpoint sources	Do.
Navajo	Nonpoint sources, grazing, mining	Do.
Wind River	Nonpoint sources, agriculture, septic systems	Do.

Mr. ROE. Please proceed.

TESTIMONY OF ROSS SWIMMER, PRINCIPAL CHIEF, CHEROKEE NATION, ON BEHALF OF WILFRED SCOTT, VICE CHAIRMAN, NEZ PERCE TRIBE, REPRESENTING COUNCIL OF ENERGY RESOURCE TRIBES

Mr. SWIMMER. Mr. Chairman and members of the committee, I am Ross Swimmer, principal chief of the Cherokee Nation. I am filling in for the chairman of the CERT organization, Council for Energy Resource Tribes, Mr. Scott, Vice Chairman of the Nez Perce. I serve on the executive committee of the CERT organization and my testimony is on behalf of the member tribes of that organization, and all tribes that have waterways running through the reservations or Indian areas.

Mr. ROE. Could you explain a point just for the record? What is the connotation of the Council of Energy Resource Tribes? What does that mean specifically?

Mr. SWIMMER. Yes, sir. The Council of Energy Resource Tribes is an organization that was formed several years ago in an effort to provide technical assistance to energy tribes that are predominantly energy Indian tribes, in other words, that have energy resources on the reservations or Indian country. There are approximately 37 members of that organization. It is simply corporate—its corporate status is a nonprofit organization that is set up to provide this technical assistance. It is estimated that today, nearly 20 percent of all America's energy resources are located on Indian tribes' reservations. In the past the tribes have not fared to well in negotiating agreements, so the CERT organization stepped in a few years ago, was incorporated by a few tribes, has grown to 37 tribes, and its purpose is to provide this technical resource to tribes that are attempting to develop their energy resources.

Mr. ROE. Are we speaking of all types of energy resources, hydropower, oil?

Mr. SWIMMER. Yes, sir. You have entered our prepared statement into the record, and I will speak to the statement, a few comments, if I may.

Mr. ROE. Without objection.

Mr. SWIMMER. The energy resource tribes of America consider one of their major assets to be energy, and the energy resources under their lands. This is geothermal, uranium, coal, oil and gas, practically any kind of energy resource imaginable is on Indian country. If we are to develop these resources, it means the possibility of pollution. It means getting into the water and getting into water quality problems. We are very concerned that the Water Quality Act does not provide a vehicle for the tribes to address the water quality problems. What is being proposed is that there would be a delegation to the States of certain authority to manage their water resources, and I suppose indirectly that this is in anticipation to be applied to Indian tribes. This won't work.

There is right now a situation where tribal governments do have a government-to-government relationship with the Federal Government. There is no State authority over tribal lands. So what happens is that we have a vacuum, in effect, that no one really watches what happens on the reservations or in Indian country, especially in regard to the water that flows through these lands.

We consider it to be of primary importance that the water quality be governed by the tribes which own the water where it flows through Indian country. We at least would like to have the opportunity to have in the act a provision that delegates this responsibility to Indian tribes as it does to States.

In the event that Indian tribes choose not to exercise that delegation of authority, we would ask that the water quality standards be maintained by the EPA. Not by the States. In other words, that authority stay with the Federal Government in regard to Indian tribes and that it not be delegated to State governments. There are several provisions in the act, like section 106, that makes grants to States to support the administration of programs for the reduction, elimination of water pollution.

These grants are not available to Indian tribes. We have section 201 construction grants that are technically available to Indian tribes but practically are not because Indian tribes would have to compete with other municipalities for these grants, and in the act, I believe that the tribal governments are classified as municipalities, which is a mistake. They are not. They should not be, and they should be identified simply as Indian tribes.

We have other sections such as 205(j), water quality management planning grants where tribes are not eligible at all. While we are eligible for the 208 water quality management area waste treatment programs grant, no moneys have been appropriated. We would like to see in the act for Congress to define the implementation authority on Indian lands and to authorize funding for tribal governments so the tribal governments can regulate water, water quality, what is going to happen to it and how it is going to be treated as it goes through Indian country.

That is the basis for our position today. What we would like to see included in the act. We did last year present a resolution from the CERT board of directors that contained the specific comments and requirements we would like to see in the Clean Water Act. And I would appreciate a review of those, and have the opportunity for you to consider including those in the Clean Water Act when it is passed.

Mr. SMITH. Mr. Chairman.

Mr. ROE. The gentleman from Oregon.

Mr. SMITH. Thank you, Mr. Chairman.

I represent several tribes in the West. I am interested in your request, and want you to clarify it for me a little further than you have. If I understood you, you wanted the Clean Water Act controlled by the tribes rather than the States, is that what I heard you to say?

Mr. SWIMMER. Yes, sir; as there is a delegation in there to States that choose to assume that delegation, we would like a delegation to tribes to assume the same jurisdiction. In the event of a conflict that might arise, say a stream flowing through tribal land and State land where there was a conflict in policy, we would ask that EPA resolve that conflict. Otherwise, we would appreciate us having the opportunity to address the water-quality problem as the water flows through Indian country.

Mr. SMITH. For further clarification, only in the time of conflict between the State and tribe would you want EPA, or would you want EPA——

Mr. SWIMMER. Yes.

Mr. SMITH. If the tribe did not——

Mr. SWIMMER. If the tribe chose not to exercise the delegation, then we would ask that EPA come in and make a study and work with the adjoining State, if there is one, or whatever the situation is, to work out the policy for the tribe. We would ask that that stay with EPA and not be delegated to the State.

Mr. SMITH. What kind of example could you envision in which the tribe and State might be at odds about that would be to the detriment of the tribe?

Mr. SWIMMER. I wish I could. I would imagine that right offhand it could have something to do with energy resource development, such as uranium or coal, that might be extracted from Indian country, and not be involved in the stream further down. And that a tribe might be dealing with an energy company that would have some problem with the water quality that is affected on the reservation, but then would not be as the stream flows on through.

That would be an example that comes to mind immediately. I cannot cite you a specific example of what we are asking for in this regard other than that.

Mr. SMITH. I would be happy to visit with you about this. I am just worried that we divide up the jurisdiction so much that we create further conflicts of interest rather than preventing them. I wouldn't want us in a constant battle in the courts about where we stand and whose water is affected.

Mr. SWIMMER. I think that can be corrected in the act which would show that if there is a conflict, EPA would step in and set the standard. But that involves tribal government, and State government, and Federal Government. Where we have a sovereign within a sovereign, that that should be the organization that has the ability to management and regulate the water quality that flows through its land, just as we are asking that States have that opportunity.

I don't think, I really don't see that it would be a serious conflict. As it is now, Indian tribes would be almost impotent to do anything. The State is pretty much responsible, and except on that strip of Indian land where the State really has no jurisdiction, other than what might be conferred by this act, we wind up with a vacuum, where an Indian tribe really has nothing to say about what happens and the State may be considering a situation that is totally different from what is happening on the reservation.

We also have conflicting laws on reservations now where tribes have their own tribal courts or tribal laws, and their own government-to-government relationship with the Federal Government which is going to make it very difficult, then, for a State to come into a reservation and say this is what you are going to do or this is what we want to do. It helps us down here. But you need to do this, too, without having the tribe be able to say, well, wait a minute. We need to have something to say about this situation.

And by law, by the Clean Water Act, we do have a right to say something. It also provides the—what we are asking for would pro-

vide the tribes with the opportunity to have funding to do some of the construction projects, some of the planning projects and to hire people who are capable of working with tribal governments to manage this water-quality problem.

Mr. SMITH. That portion I am really not concerned about. I am concerned about somehow this interfering with what at least in the West has been a very sensitive issue, and that is the issue of water rights and how they are distributed between not only Indian tribes, but also States rights in water, and also individuals' rights in water.

As you know, we live and die by water, or the lack of it, in the West. And any kind of intrusion into those rights by law of the Federal Government, without knowing it, would interrupt tremendously what has been occurring in a rather quiet, peaceful arena to date.

Mr. SWIMMER. I am not sure that it is rather quiet and peaceful. It might be. It might be right now.

Mr. SMITH. It depends on where you are.

Mr. SWIMMER. Yes, sir; I understand that. I don't see that this would usurp anyone's jurisdiction over the ownership or the use of water. Those are decisions that will ultimately be made later, either by courts or by agreement. But as the water does flow through the tribal reservations anyway, that is where we are particularly seeking jurisdiction of the quality and management of it.

Mr. SMITH. As you know, we are battling now what happens to the fish that swim through the waters that go through the tribal lands.

Mr. SWIMMER. True.

Mr. SMITH. Thank you.

Mr. SWIMMER. Thank you.

Mr. ROE. Are there any further questions of the witness?

Mr. Moody?

Mr. MOODY. I am looking at the statement that says only tribal governments are able to protect the reservation environments in a manner consistent with the goals and values of the Indian people they represent. When you have an ambient substance such was water which flows through jurisdictions, how practical is it really to have one jurisdiction with its own administration of standards or decisionmaking on standards, yet without it affecting other jurisdictions. This is a moving substance, water. It moves in and out of the jurisdictions in question. Is it practical to have different, as you call them sovereign, entities making separate decisions in this way? Doesn't there need to be a uniform, some uniformity? Isn't it more practical to have as large a unit as possible handling these kinds of questions in our Nation, rather than having subdivisions, I mean States are about the biggest units we have short of the Federal Government. Isn't that sort of a practical unit of government to handle this kind of problem rather than breaking it down into small units such as tribal governments?

Mr. SWIMMER. Well, I think that the problem can be solved by delegating the tribal governments without affecting that management problem. There are areas, for instance, the Navajo, that that land mass is much greater than the size of several States. There are other Indian tribes that have several million acres of land that

would be equivalent to the size of many States in the East. So we are talking about some pretty large land masses. We are really not talking about a situation where the reservation is on a 5-by-5 mile square area and a strip of water flows through and we are saying this is ours and the rest of the State is yours.

We are talking about some pretty big areas that are covered, and I think that for that reason, it would be good that the tribal governments begin this responsibility so they can have something to say about that water that flows through their reservation area. Just as it has been proposed to delegate to States, I don't think we are talking about that many more jurisdictions, really.

As it goes from one State to another, there are likely to be some, maybe not problems, but at least concerns that both States will have to address and come to a meeting of the minds on. Essentially, that is what we are asking for, is that the State and tribal governments would address the issues, come to a meeting of the minds, and if they don't, the EPA would resolve differences.

Mr. MOODY. I will grant you that some Indian tribal areas are bigger than some States, that is in the extreme true. But there are also little tribal areas that are little parts of a State and you do get the problem I mentioned.

Mr. SWIMMER. Sure.

Mr. MOODY. Would you apply the same principle to clean air, ambient air that traveled across jurisdictions?

Mr. SWIMMER. Yes.

Mr. MOODY. You think tribes should also control the air above——

Mr. SWIMMER. Yes, sir.

Mr. MOODY. Independently of a separate jurisdictional responsibility?

Mr. SWIMMER. I think they should have a code of laws consistent with the Clean Air Act and should have something to say about that. Both of these issues, water and air, are directly affected by energy resource development. Much of that energy resource development is going to happen in Indian country. For that reason, I think the tribes should have something to say about both those areas.

Mr. MOODY. One last question if I could, Mr. Chairman.

Mr. ROE. Sure.

Mr. MOODY. Do tribes have the administrative capacity, the bureaucracy, in effect, to match the competence of States in this area?

Mr. SWIMMER. I would say in many cases they do, but also in many cases they don't. I would say that the latter is a problem now and that, yes, we do have to establish competency in this area. Part of that establishment of competency would come from adequate funding of this particular act that would allow us to hire the professional and technical people to carry it out.

The same applies to States. I don't know if very many States have that ability to manage today. So we are both growing. We are both learning about this area, but there is nothing that would prevent a tribe because of its organization or tribal government from acquiring those skills. Essentially, that is what we would like to do.

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It also is an economic benefit, of course, to Indian tribes to do this, and to train their people in water quality control and things related.

Mr. MOODY. Thank you.

Mr. ROE. I think for clarity in the record, I don't know whether this is coming through the way you mean it to come through. No. 1, what we are saying is that there is a particular relationship that exists between the Indian tribes and the Federal Government which is separate in part and in large measure from that which you would have with the State. In other words, the tribal lands under much of the Federal laws also are handled as if it were a State in that sense, is that correct?

I am saying that because of the special laws that exist between the Federal Government and tribal lands there is a direct relationship between the tribal lands, and Federal Government, per se.

Mr. SWIMMER. Sure.

Mr. ROE. Basically. So if we are talking about 20 percent of the energy resources being on tribal lands, and as the tribes in themselves and councils decide as to how they are to develop their lands and how they are to make their own economic units out of their lands, they have a responsibility. That is what you are saying basically.

Mr. SWIMMER. Yes, sir.

Mr. ROE. Therefore, for example, if somebody is going to develop an area, just for clarity of the record, if somebody is going to develop an area for coal slurry, or mining coal, or whatever, they are going to be creating nonpoint sources of pollution basically. So there is a void is the point you are making in the interrelationship between this act and how we deal with that kind of development on Indian lands where they have the right to do that development under Federal jurisdiction, isn't that correct?

Mr. SWIMMER. Yes, sir.

Mr. ROE. Therefore, you are coming back and saying it is not a question of a confrontation with the State. It is that we are going to develop our Indian lands. We are polluters. Everybody is polluters.

Mr. SWIMMER. Yes.

Mr. ROE. So there has to be an interrelationship there. If the State doesn't have the total jurisdiction, why not kind of marry those two jurisdictions up so we can achieve the goals we are trying to achieve.

Mr. SWIMMER. Very well put. Yes, that is exactly what I am trying to say.

Mr. ROE. If the gentleman from Oregon would yield. What you are saying, as I understand it, it is not a confrontation on water rights, those issues are there anyway. We are simply saying how do we tighten up the whole operation so we can work together to achieve the goal.

Mr. SWIMMER. That is right.

Mr. ROE. Just because I don't know, for clarity, say for example that on one of your reservations you decided to establish an industrial park or development. You would have the right to do that.

Mr. SWIMMER. Yes, sir.

Mr. ROE. Therefore, the effluents from those particular facilities and so forth, they could easily be coming into the headwaters of a river going to another State. So it is vitally important what you folks do with your authority and responsibility on your pollution control on your land as relates to other States.

Mr. SWIMMER. Very much so, yes, sir.

Mr. ROE. Isn't that the pattern you are trying to establish?

Mr. SWIMMER. Yes, it is.

Mr. ROE. The gentleman from Pennsylvania?

Mr. CLINGER. Thank you, Mr. Chairman. I think Mr. Moody basically asked the questions I was going to ask. But for my clarity's sake, under existing law who is responsible, EPA or the State?

Mr. SWIMMER. EPA at this time.

Mr. CLINGER. So it is a sovereign-to-sovereign relationship existing?

Mr. SWIMMER. Yes, sir.

Mr. CLINGER. I think your answer to Mr. Moody was that you felt that, whereas the competence level might not exist on the reservations now, given the funding you could develop that expertise?

Mr. SWIMMER. Yes, sir, we certainly could. We have a list of several tribes that have, in fact, begun water quality programs that is attached to the testimony. So we are in the business of doing that now to some degree even though we don't have the funding to do it. But we have done it out of necessity because there is that void or that vacuum between jurisdictions, and the States just don't have the authority to come into Indian country and regulate.

Mr. ROE. If the gentleman would yield, when you have that kind of situation where there would be a critical relationship, who would do that now, EPA?

Mr. SWIMMER. EPA.

Mr. CLINGER. Under the existing setup, of course, all States have some agency or bureau that is responsible for this.

Mr. SWIMMER. Yes.

Mr. CLINGER. So we are really saying that you have a ways to go to get to the point where you would be able to do this. How many tribes are we talking about? In other words, if this were to become part of the law, how many tribes would be involved?

Mr. SWIMMER. I wish I were prepared to answer that. I would say less than 30, but I can't speak with authority on that because I am not sure. It is mostly in the West, and I am not familiar with every tribe that might have that particular problem. We represent 37 energy resource tribes. There might be 37 rivers for all I know. There probably are. So we could be talking about 30 to 40 tribes that would be directly affected by it. Others that might be somewhat affected by it. I don't know.

We have a river that flows through our area, in fact, that is owned by the Cherokee Nation. We have problems there. We have a different situation than most of the tribes in the West, however. What possibly could be done is the tribes would delegate all responsibility to the State. By mandate of Congress, of course, Indian tribes could be put under State law. We would reject that idea, however, because of the other problems inherent in the reservation economy and reservation thinking and reservation development.

And we would prefer that it stay either under EPA, or that those tribes that can, develop their own water quality programs.

Mr. CLINGER. But if they were unable to or chose not to develop their own water-quality programs?

Mr. SWIMMER. It would remain with EPA.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman. I think I have some of the same concerns that have been expressed by other members of the committee. At present, many States have regulatory policy that extend beyond what the Federal Government has. The Federal Government establishes minimum quality requirements. Then States may, and in many cases do, mandate stricter requirements. They cannot abrogate the national standard but they can certainly implement a more strict policy of their own. It would appear to me that if you had Indian territory in a State that would render a portion of that State territory and boundaries inconsistent with one another, it could create some conflict.

I would have some concerns about granting to the Indian government complete liberty to establish their own policies, perhaps irrespective of the Federal or State governments. I have five Indian reservations in my small district. They are not the size of Nez Perce, or Apache, or the Navajo Tribes. These are small reservations that I can drive across in 15 minutes. And they are contiguous, one with another, so I could drive across all five in a matter of 20, 30 minutes.

A river runs through almost all of those, and there are major, major concerns now about water rights, and mineral rights, and energy rights in that basin. Their lifeblood depends on it. There may be only 250 members of that whole tribe, and the tribal government may be absentee. They don't live on the reservation. They live somewhere else. I can see under something of this nature where you would have five different tribal governments determining policy that affect a small area of my district, and certainly a smaller area of my State that could throw into total confusion any consistent policy between State and Federal Government.

Mr. ROE. If the gentleman would yield on that. However, again I think that we have got two ships that may be passing in the night in the discussion here. That is not what the gentleman is suggesting. In my understanding, let us take that specific case. It would seem to me that is the art of our ability to write legislation that would accommodate these particular issues.

For example, let's take a hypothetical case, your case, specifically in the State of California. If the California regulations were higher, which is the case in many States, in water-quality requirements than, for example, the Federal Government had established, that could be written into the law. If the Indian nations were located within that State, that would be a higher level of water quality for everybody within that State and its political subdivisions including Indian tribes would have to inure to.

What he is saying is something else unless I get you all wrong. He is saying one point. That there is a void now in the development of those lands as it relates to the Federal water quality because there isn't an interrelationship. I don't think the gentleman is speaking to abrogating or setting the Indian lands up as a sepa-

rate government. What he is coming back and saying, it is a separate government. We want to be treated equally as we would treat a municipality.

Is that a reasonable point to make? That is what I am interpreting.

Mr. SWIMMER. That is exactly right. This void does exist, and States don't have control. In effect, the water quality that is established in those five little tribes isn't under control of anybody at this time.

Mr. PACKARD. If that is in fact the case, then I think that there is a point that needs to be made.

Just as I would have concern about five different Indian governments having their separate policies interjected into a State geographic area, so I would have some concerns about one geographic area interjecting into a State and having a different policy. I would have some concern if there was a specific area—namely, tribal lands—that would live by national standards, whereas the rest of the State surrounding those tribal lands would live by a State standard that might be more strict.

Mr. ROE. If the gentleman would yield, that specifically is the point. For example, let's suppose you have a piece of land that is Indian land located within the State. It has an Indian relationship with the Federal Government which abrogates the State. Therefore, if you are developing any of the Indian lands, if you are developing municipal lands at that point, or they want to develop Indian lands rather, it kind of messes up the State.

I think what they are saying is create another level. I don't think you are saying that you are. You are not talking about setting up a separate policy in your determination about water quality. You are saying that what we want to do is be counted as part of a whole.

Mr. SWIMMER. We want to be consistent, yes, absolutely.

Mr. ROE. If you had an economic development situation on your lands and it was going to potentially create a nonpoint source or point source pollution, as it is now, that would be EPA negotiating with you rather than the State; is that correct?

Mr. SWIMMER. Yes.

Mr. ROE. What you are saying is let's create some mechanism where we as Indian tribes can work with the States, as I understand it.

Mr. SWIMMER. Absolutely; and develop a policy consistent with the surrounding area. Rarely would we have an opportunity to conflict, in my opinion. If a conflict, in anybody's imagination, happened, EPA would settle it. What we are trying to say is that as municipalities of certain authorities to deal within the State, tribal governments would, and we would be able to work to develop policies that were consistent with the Federal policy and State policy that surrounds us.

Mr. PACKARD. If what you are saying is that Indian lands would live with the rest of the regulations the rest of the State lives with——

Mr. SWIMMER. Essentially that is right. Regulatory authority would be something else.

Mr. PACKARD. This is what my perception was, that you would be asking that you live by Federal standards and not have to report to State standards. Then I would have some concerns.

Mr. SWIMMER. No. The other issue would be regulatory control; that we would want to regulate those standards, but that the standards would be consistent. We are not asking for the ability to set a standard that is inconsistent with any other standard. It is just that once it is set, we want to be able to regulate it.

Mr. ROE. The gentleman from Oregon.

Mr. SMITH. Thank you, Mr. Chairman.

Are you suggesting that there be a third party, the Indian nation, involved in the question of the State and Federal Government? Or are you suggesting that all you want is to be recognized as an integral part of the decisionmaking? Please answer that.

Mr. SWIMMER. A little bit of both. In fact, the Federal Government delegates to the States now. The States, by that delegation, do not have specific authority in Indian country. We are asking that that authority, particularly regulatory authority, be delegated to Indian tribes. But we would be consistent.

Mr. SMITH. This is going to be a third party involved in the discussion, Mr. Chairman, now. We have the State and Federal Government now. What he is suggesting is—as I understand it—a third party. Frankly, that concerns me.

Mr. ROE. Just again—I don't mean to belabor the point; I want to be sure I understand this—let's take a case where we have Indian lands in Oregon. You would be coordinating with the State almost in the same relationship as a municipality would.

Mr. SWIMMER. Absolutely.

Mr. ROE. What I am trying to get at, Bob, if any language is written to accommodate that goal, then it has to be language that goes in that direction. That is what I want to be sure you are asking for.

Mr. SWIMMER. I think we could even accept a situation that would say that the Indian tribes would be consistent in the regulations with States and/or EPA policy, but that regulatory enforcement of these policies would be left with the tribes.

Mr. ROE. As it would be the responsibility of a community or city responsible to regulate according to Federal and State standards?

Mr. SWIMMER. Yes, sir.

Mr. SMITH. Mr. Chairman, let's just carry it again. I don't want to belabor this.

Mr. ROE. It is an important issue.

Mr. SMITH. It is an important issue.

Mr. ROE. It is.

Mr. SMITH. Because, you see, as I understand what occurs today—let's take the State of Oregon—if there is a problem on the Columbia River with water quality, all concerns, be it within the State—and there is Federal land there and there is also an Indian tribe on the Columbia River—so Federal and State people reach an agreement. It is either the State of Oregon or the Federal Government. Both have water quality standards that must be met. So if there is conflict, they finally get together reflecting all rights.

If you are suggesting there be a third party, that the Indian nations be treated separately somehow in this discussion, then that is my concern. If you are suggesting the Indian tribes only be consult-

ed as are other Federal users of water or Federal interests in water along that Columbia River to the decision, then I have no problem with your point.

Mr. SWIMMER. OK. You are essentially right. That is what we are asking for; and that we would simply be consulted about what is going on.

Now, regulatory enforcement of those policies once established, however, is something else, because we don't have—the State or Federal Government doesn't have the ability to come into that reservation area and make those people do what they are supposed to do. So we are asking that there be a delegation of regulatory enforcement directly to the Indian tribes so they can be——

Mr. ROE. As would be delegated to a city or multiple group of municipalities. You are not asking for any more than that?

Mr. SWIMMER. That is right. We are not asking for a third arm of government to set up a separate set of policies that would possibly conflict, but simply in that regard be consulted, know what the policy is going to be, and then be able to enforce it in our country.

Mr. ROE. The gentleman from Nebraska.

Mr. DAUB. Mr. Chairman, if I might just—this is important. We have three reservational situations in Nebraska. I want to ask it again.

You have us all very, very interested in your view, and I read the testimony quickly that you put before the committee. You are not asking for any direct relationship to be established between tribal government and the Federal Government with respect to the law. You want the tribal circumstance to be as if it were a municipality within the boundaries of the State in which it resides?

Mr. SWIMMER. Yes.

Mr. DAUB. I don't want to put words in your mouth. That is a question I am asking. Because I didn't get that from the testimony.

Mr. SWIMMER. We want it to be as a tribal government within the State boundaries; not as a municipality. We are now in the act as a municipality. We don't want that designation. We want to be designated as a tribal government with the government-to-government relationship with the Federal Government.

Mr. DAUB. That is where I am having trouble.

Mr. SWIMMER. I think we are talking about regulatory enforcement more than policy. I think we could live with a situation that says we have the opportunity to work with the State and Federal Government in developing the policy. But then once it is developed, that we do want the authority; then to administer that policy and to regulate that policy, and to do that we have to have those resources as municipalities do now.

Mr. DAUB. I am left, and this is my final thought, with the impression that you are testifying in favor of—and I worked on the Constitution Rights Subcommittee in the Senate, and was involved with constitutional rights of native Americans, got into a lot of tribal law and a lot of contract law—a direct Indian nation-Federal-State relationship that would bypass essentially municipal and State EPA law and regulation. That is what I view the testimony as, and what I view your last statement as meaning.

Right or wrong?

Mr. SWIMMER. That is right.

Is that in conflict with what I have told you, Congressman Smith?

Mr. SMITH. Well——

Mr. DAUB. I have got my question asked and answered. I didn't mean to take anyone else's time.

Mr. SWIMMER. We do want a government-to-government relationship with the Federal Government. We do believe we can be consistent with the policy that the State and Federal Government develop, but in that relationship we expect to have the authority delegated to the tribes to manage water quality on Indian reservations.

Mr. DAUB. I am not trying to indicate how I feel; simply to get you to answer the question.

Mr. SWIMMER. I understand. Maybe I am being vague about it.

Mr. ROE. Are there any other questions?

I think we have exhausted it, but I am still confused. As chairman of the committee, I would like to be helpful because maybe I am seeing—I don't have any tribes in my district. I have a lot of people in my district, but I don't know if there are any tribes or not.

Mr. PACKARD. Mr. Chairman, may I ask one more question in light of what Mr. Daub asked? This is my concern, too.

Assume, in the case I referred to earlier, the Federal regulations are in place and every State and every jurisdiction across this country has to live at least to the minimum level of standards that the Federal Government has established. If a State has added to those regulations or at least has a stricter policy at the State level than the Federal, in such a situation, if there were one or more tribal reservations in that State, with your recommendations and desires, what policy would the Indian government have to live by?

Mr. SWIMMER. Federal.

Mr. PACKARD. And not the State necessarily?

Mr. SWIMMER. Yes, sir.

Mr. ROE. We will see that is contrary to what we said earlier. I would have to rebuff that, too.

Mr. SWIMMER. I am, too. I apologize.

Mr. ROE. No, no. Let's assume there is a flood control program important to a whole region of which you are a part. As it is now, the Federal Government would negotiate with you on that issue, would it not?

Mr. SWIMMER. Yes.

Mr. ROE. You are coming back and saying all Americans ought to be treated alike and we ought to have the right to determine what our interests are, local level, to what that flood control situation is, I would think.

Mr. SWIMMER. But as we said in the testimony, if in fact we conflict——

Mr. ROE. No, no. I am not quarreling about the remedies. I am trying to get the thesis of exactly what you are looking for.

It would seem to me we have small quantities of Indian lands and vast quantities of lands. We are talking about enormous energy supplies being on the Indian lands and they want a certain amount of determination on the Indian lands themselves to be able

to make those decisions. Some of the decisions made on the Indian lands can have a very marked influence.

If you are going to develop a refinery, certainly the requirements ought to be such that effluents from the refinery which goes into the water which goes down to affect another part of the State ought to have some kind of consistency. But we ought to also have a right on the Indian reservation to be part of those recommendations, as any municipality would have.

That is how I hear you. If so, it would be of advantage to the overall water quality program to have some interrelationship. But if it is going to be a separate confrontation, so to speak, with the Indian tribes saying, well, we want to go by a different set of rules, then we would have difficulty with that.

I don't think your testimony clarifies that point.

Mr. SWIMMER. I think that maybe there is not the understanding that we should have. What I am saying is that we do want the regulatory authority. We want the Clean Water Act and authorities contained therein to be delegated to Indian tribes. We do want the ability to set regulations for the use of—for the water quality in Indian country. We are asking for that.

The issue has been brought up several times about, well, what happens if that policy we set in Indian country conflicts? Our response is that EPA would then be the organization to set the policy, that we would deal with EPA. And that gets back to your question that, no, the State does not have superior authority over the tribe if it sets a different water quality standard outside that reservation, and would come on to the reservation and say, well, this is what we have set; yours needs to be consistent. We would say no. We need to go to EPA and ask EPA to review the situation and for EPA then to set that standard.

Mr. ROE. Again, let me just make this final observation: The committee, this committee and the Public Works Committee with all of its vast jurisdictions in economic development and everything else, have been enormously sensitive and very much so toward the rights of our Indian heritage, if you like. We have been very, very sensitive to that. In fact, this committee has broken all kinds of old precedents and we have written equality every place we can into a law.

But I don't think your position is clear enough for us to understand precisely what you want. I don't want to nail you down today. I think you ought to think it out further for just one reason alone.

The committee had developed over a period of years recognition that regionalization of many of our water supply systems was vitally important for the integrity of the system itself. For example, on the Delaware River basin, I just made a speech yesterday and dealt with four different States, the States of New Jersey, New York, Pennsylvania and Delaware. Our concern was how do we maximize the optimum yield of those water resources in the whole gamut, protecting fisheries resources, protecting whatever?

In the course of the discussion, we determined that it was very fortuitous indeed that the Delaware River Basin Commission was established by an act of Congress. It is not a regional organization that was established by Executive fiat, as has been the case in

many areas throughout the country. So there is an enormous tool to be able to work with.

What happens to that river and its tributaries and all of its relationships on natural resources is critical to those four States. Therefore, we can't have one State going off in one direction, one State in another direction, or we have citizens in different areas saying, hey, look, we don't want that pump diversion there because it is going to hurt our area. Somebody has to make decisions someplace or nothing is going to happen.

I think the concern of the committee that is coming through now is that if we set up another governmental agency called the "Indian Rights Group" now, we have a different situation existing. We are looking to get the maximum optimum yield of those natural resources in a coordinated process. So we are sympathetic as far as the committee would be concerned in Indians' concerns and Indian Americans' rights, but we have to get into this a little bit more so we better understand what level we could even be accommodating to you.

Do you see what I am trying to get at? And I don't think we are getting to that this morning.

Mr. SWIMMER. Well, I appreciate that.

Mr. ROE. So I would like to suggest that if the gentleman and committee agrees, why don't we put you on hold and make this the first part of your testimony, because we are going to have a lot more hearings, then get back into this a little more. Maybe consult a bit, then get back to this and testify with a little more refinement to what your presentation is.

Could we ask you to do that for us?

Mr. SWIMMER. Certainly may. I appreciate that and apologize for being unprepared to some degree.

Mr. ROE. It is not an apology necessary. It is a very vast issue. We want to be sure we understand precisely what we are talking about.

Mr. SWIMMER. Surely.

Mr. MOODY. Could we ask the witness when he does come back to address a particular question I didn't get to ask but I think would be relevant. If you did have two different sets of standards with the State, let us say being a lower standard than the tribal standard, suppose the tribal standard was higher under this sovereignty principle, it could be as I understand your testimony.

Mr. SWIMMER. Yes, sir.

Mr. MOODY. Would the State with the—would the tribe have the right then to sue the State, take it to court for water that passed from one part of the State into the tribal area? Would the State find itself in that court where you have a moving resource, moving between jurisdictions?

Mr. STANGELAND. The same would hold true in that case as holds true today. If a lower State in a watershed sets a higher standard than an upper State, can the lower State sue the upper State. I question if they can.

Mr. MOODY. That is what I am asking, would they have exactly the same standing the State would have to sue.

Mr. SWIMMER. I think they would. I think that would be, of course, that obviously can be mandated by Congress, too.

Mr. ROE. OK. If there are no further questions, we want to thank the gentleman and look to hear from you further, because I think you are bringing forth an entire re-review of the relationships between our Indian reservations. So we thank you very much. We will be calling you back again, Mr. Swimmer.

Mr. SWIMMER. Thank you, Mr. Chairman. I assure you I will be prepared for you.

Mr. ROE. Our next witness is Mrs. A. Reid Johnson, clean water chairman for the National Affairs and Legislation Committee of the Garden Club of America.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

PREPARED STATEMENT OF MRS. A. REID JOHNSON, CLEAN WATER CHAIRMAN, NATIONAL AFFAIRS AND LEGISLATION COMMITTEE, THE GARDEN CLUB OF AMERICA

The Garden Club of America was founded in 1913 and has approximately 20,000 members representing roughly 200 clubs throughout the United States, including Hawaii. The Garden Clubs concentrate on only four or five issues, and leading the list are Clean Water, Clean Air and Toxics, as well as Endangered Species. We supported the original Clean Water Act, and we especially wish to commend Rep. James J. Howard on his Water Quality Renewal Act of 1983, H.R. 3282, and James L. Oberstar on his bill, H.R. 4037, which addresses the non-point source pollution problem. They have our enthusiastic support!

There are several issues that we would like to highlight as being of particular importance and concern to the Garden Clubs:

Wetlands—both tidal and non-tidal; bottomland woodland swamps and areas that may be inundated at only irregular intervals; bogs; prairie potholes; the Alaskan tundra; mudflats and wet meadows. All wetlands serve a purpose and are of tremendous ecological value. Many species can only exist under wetland conditions or through the food chain and chain of life provided by them. Many types of hardwoods, shrubs, grasses, rare plants and a variety of waterfowl, flora and fauna depend on wetlands for breeding, feeding, growing, existing. We don't begin to know the importance of all the plants in these areas and the major contribution they may be able to give to medical science and to improving strains of vegetables in future years.

Forty percent of the original wetland acreage in the lower 48 states has been destroyed.

In writing the Clean Water Act, Congress wisely recognized that our nation had a responsibility to be the trustee or steward in the management of its waters, wetlands and associated resources and environmental aspects. The states and the Federal Government should act in partnership, sharing this Public Trust and protecting these invaluable areas. Correcting mistakes is far more costly than protecting our resoruces in the first place, and, more often than not, once gone these areas and the life they sustain are lost forever. *Section 404 is vitally important and, if anything, needs stronger language so that it cannot be circumvented through Corps regulations. Especially, we must ensure that no weakening amendments are permitted.*

Many states have wetlands laws but others do not. Some of the wetland laws that exist are not properly enforced due to political pressures in the states, or they are not effective and strong enough. Some state laws apply to tidal wetlands, only, and give no protection to non-tidal wetlands, headwaters, bogs, lakes and streams. The hardwood swamps of Louisiana, the Everglades, prairie potholes, bogs and rivers in Maryland, and other areas from coast-to-coast lack protection. *It is very clear to our members that we must depend on the Federal Government to make strong laws to protect all the varieties of wetlands for the states do not do it alone.*

Nonpoint Source Pollution. Our members have worked on numerous projects to cut down on nonpoint source pollution, but volunteer efforts are not enough. Particularly in Ohio, our members have worked for green parking lots, where waters are absorbed into the ground and recharge our aquifers, instead of pollutants running off into the waterways. Throughout the country they have assisted in planting green strips in urban areas next to waterways to absorb pollutants. This has helped, but it is not enough. *Federal laws to restrict nonpoint source pollution are needed,* as this ubiquitous runoff appears to be contaminating our waters almost more than

anything else. Direct outfalls from industry and sewage treatment plants are easier to pinpoint and more controllable. Run-off from urban streets and parking lots cause major pollution problems. There is the problem of insecticides and herbicides entering the waterways from spraying along highways, from use by homeowners and from farmers. Fertilizers used on home gardens and farms, with their large amounts of nitrogen and phosphorous cause overenrichment of our waters—our reservoirs, lakes, even the Chesapeake and other bays. Our waters and aquatic grasses are being poisoned and dying from excessive phosphorous, nitrogen and other types of nonpoint source pollution. Sediment run-off keeps light from reaching the bay grasses, causing them to die, and this, in turn, reduces the population of shellfish and finfish. All these nonpoint source pollution problems have been recognized in the EPA studies and by scientists as a major cause of the degradation of the Chesapeake Bay and its depleted resources.

Rep. Oberstar's bill H.R. 4037 addresses the nonpoint source pollution problem effectively as it would: Identify stream segments where nonpoint pollution is a problem; identify the kinds of sources producing the runoff; develop the "best management practices" (BMPs) for controlling nonpoint pollution; set a time schedule for implementing the management practices as soon as possible; and identify federal programs and financial assistance which should be consistent with state nonpoint programs.

The bill provides 50 percent cost sharing with the states, and this would encourage correcting this difficult problem which must be addressed if our waters are to continue to be living resources. It is a problem which some industries and farmers and gardeners would like to ignore, but the time has come when conscious and unconscious polluters need to be served notice that Congress is serious about cleaning up contaminated run-off that is polluting our waterways.

The Cheaspeake Bay is the most productive estuary in the world, but its resources and value are slowly declining. The EPA study pointed out a number of the problems. Maryland, Virginia and Pennsylvania, and their Governors, have committed themselves to address the problems and improve the situation. The states cannot do this alone, the need Federal financial backing and a strong Clean Water Act if any success is to be achieved. Money, commitment and mandated directives to the states and the Federal natural resources agencies (the Corps, EPA, U.S. Fish & Wildlife Service and National Marine Fisheries) are a must to achieve the necessary goal of enhancing the quality of the Cheaspeake Bay.

Toxic Hot Spots.—As mentioned at the beginning, toxic are one of our major areas of concern. Strong legislative action is needed to clean up our toxic dumps and hot spots and prevent further illegal and thoughtless dumping of toxics and sludge. We question the ocean incineration of toxics because of the number of human errors that can occur in the way of spills and infractions in following regulations. These problems need to be addressed in the bill.

The current law requries industries to treat toxic wastes prior to discharging them into publicly owned sewage treatment plants. Congress must reject proposals that might weaken these provisions in the law.

The law requires industries to use the "best available technology economically achievable" (BAT) to clean up wastewater before it is discharged into our waterways. Because EPA has delayed in setting BAT standards, deadline extensions are needed, but these should not be for more than three years, and BAT standards should not be lowered.

Through regulatory changes, EPA is proposing to allow states to degrade stream water quality. These proposals should not be permitted as they would make it impossible to protect pristine waters in parks and refuges, and to achieve the goal of making our waters fishable and swimmable.

Sewage Treatment.—No untreated effluent should be permitted to enter our bays or oceans. Secondary treatment of sewage entering the ocean should be required unless the municipality has no pollutants in its sewage and the daily output is small, but even then primary treatment should be minimum. Clambeds have had to be closed and water quality thoroughly polluted by the dumping of sludge being permitted in waters off the coast—such as the 12-mile zone off New York, and the former Philadelphia dumpsite for sludge off the Delmarva Peninsula. The sludge has spread causing additional closing of clambeds. We question the proposed 106-mile dumping site as there is so much evidence that those dumping ignore regulations and dump short of the mark, or include illegal substances.

The Garden Clubs also feel the Safe Drinking Water Act H.R. 3200 (introduced by Rep. Dennis Eckhart) is a very important piece of legislation and hopes it will move forward without weakening amendments.

In closing, the Garden Club of America enthusiastically supports H.R. 3282, H.R. 4037 and H.R. 3200. If weakening amendments are proposed, they should be rejected, and we hope our concerns will be included in the final draft of the bill.

We request that our full testimony be included in the hearing record, and greatly appreciate the opportunity of addressing these issues.

We urge you to push this bill forward promptly and not delay.

Mr. ROE. Please proceed.

TESTIMONY OF A. REID JOHNSON, CLEAN WATER CHAIRMAN, NATIONAL AFFAIRS AND LEGISLATION COMMITTEE, GARDEN CLUB OF AMERICA

Mr. ROE. Mrs. Johnson, what State are you from?

Mrs. JOHNSON. I am from Maryland.

Mr. ROE. A good State to be from.

Mrs. JOHNSON. Very good State. I am glad you all were there having a tour of the Chesapeake.

I have submitted written testimony and I will give you brief excerpts from it.

The Garden Club of America was founded in 1913 and has approximately 20,000 members representing roughly 200 clubs throughout the United States, including Hawaii. The garden clubs concentrate on only four or five issues, and leading the list are clean water, clean air, and toxics, as well as endangered species. We supported the original Clean Water Act, and we especially wish to commend Representative James J. Howard on his Water Quality Renewal Act of 1983, H.R. 3282, and Representative James L. Oberstar on his bill, H.R. 4037, which addresses the nonpoint source pollution problem, which is extremely important.

We would like to highlight several issues. One, wetlands we are particularly concerned with, both tidal and nontidal, bottomland, woodland swamps and areas that may be inundated at only irregular intervals, bogs, prairie potholes, Alaska tundra, mud flats, and wet meadows. Many species can only exist under wetland conditions or through the food chain and chain of life provided by them and the various plants growing in these areas.

We don't begin to know the importance of these plants and their possible future contribution to medical science and improving strains of vegetables or in use for recombinant DNA. Forty percent of the original wetland acreage has been lost, as you know, and we are losing more at a rate of 450,000 acres a year. We are very concerned about the new corps regulations and how they are expanding their nationwide permits and granting letters of permission which remove protection from thousands of acres. We feel very strong wording is needed to be written into law to prevent the corps from circumventing the intent of the Clean Water Act and issuing regulations which remove protection from many critical and important inland areas.

For instance, bottomlands are totally removed from the new corps regulations. We are finding this difficult in many of the States. I won't go into all the examples as many are in my written testimony. The corps regulations would also remove from the States the right to object to many types of projects and they are inconsistent with many of the States' coastal zone management plans. Maryland feels this particularly.

In writing the Clean Water Act, Congress wisely recognized that our Nation had a responsibility to be the trustee or steward in the management of its waters, wetlands and associated resources and environmental aspects. The States and the Federal Government should act in partnership, sharing this public trust and protecting these invaluable areas. Correcting mistakes is far more costly than protecting our resources in the first place, and, more often than not, once gone these areas and the life they sustain are lost forever. Section 404 is vitally important and, if anything, needs stronger language so that it cannot be circumvented through corps regulations. Especially, we must insure that no weakening amendments are permitted.

Many States have wetlands laws but others do not. Many protect tidal wetlands, but the nontidal wetlands, there is no control over them at all. Maryland is one of those States, but there are many others. It is very clear to our members that we must depend on the Federal Government to make strong laws to protect all the varieties of wetlands for the States do not do it alone.

Nonpoint source pollution is extremely important. Our members have worked in a voluntary way on numerous projects to cut down on nonpoint source pollution, but volunteer efforts are not enough. Particularly in Ohio, our members have worked for green parking lots, where waters are absorbed into the ground and recharge our aquifers, instead of pollutants running off into the waterways. Throughout the country they have assisted in planting green strips in urban areas next to waterways to absorb pollutants. This has helped, but it is not enough. Federal laws to restrict nonpoint source pollution are needed, as this ubiquitous runoff appears to be contaminating our waters almost more than anything else, and we certainly are finding that in the Chesapeake Bay.

Sediment runoff keeps light from reaching the bay grasses, causing them to die, and this, in turn, reduces the population of shellfish and finfish. I think you all had a demonstration of that yesterday.

Representative Oberstar's bill, H.R. 4037, addresses the nonpoint source pollution problem effectively, as it would identify stream segments where nonpoint pollution is a problem, identify the kinds of sources producing the runoff, develop the best management practices (BMPs) for controlling nonpoint pollution, set a time schedule for implementing the management practices as soon as possible, identify Federal programs and financial assistance which should be consistent with State nonpoint programs. The time has come when conscious and unconscious polluters need to be served notice that Congress is serious about cleaning up contaminated runoff that is polluting our waterways. Adequate funding is essential to correct this problem.

The Chesapeake Bay is the most productive estuary in the world, but its resources and value are slowly declining. The EPA study pointed out a number of the problems, as was pointed out so clearly by Representative Dyson. Maryland, Virginia and Pennsylvania, and their Governors, have committed themselves to address the problems and improve the situation. The States cannot do this alone, and need Federal financial backing and a strong Clean Water Act to achieve any success. Money, commitment and man-

dated directives to the States and the Federal natural resource agencies (the corps, EPA, U.S. Fish and Wildlife Service, and National Marine Fisheries) are a must to achieve the necessary goal of enhancing the quality of the Chesapeake Bay. We see a real need for the various agencies and the States working together on this.

TOXIC HOT SPOTS

Strong legislative action is needed to clean up our toxic dumps and hot spots and prevent further illegal and thoughtless dumping of toxics and sludge. You all know of the many problems in that respect. The current law requires industries to treat toxic wastes prior to discharging them into publicly owned sewage treatment plants. These provisions in the law should not be weakened, and I think there may be efforts toward this.

Through regulatory changes, EPA is proposing to allow States to degrade stream water quality. These proposals should not be permitted as they would make it impossible to protect pristine waters in parks and refuges, and to achieve the goal of making our waters fishable and swimmable.

Clam beds have had to be closed and water quality thoroughly polluted by the dumping of sludge being permitted in waters off the coast—such as the 12-mile zone off New York, and the former Philadelphia dumpsite for sludge off the Delmarva Peninsula. We question the proposed 106-mile dumping site as there is so much evidence that those dumping ignore regulations and dump short of the mark, or include illegal substances.

In closing, the Garden Club of America enthusiastically supports H.R. 3282, H.R. 4037, and H.R. 3200. We urge you not to delay and not to have more and more hearings and delay on the point where you never get it out of committee and on the floor for a vote.

Mr. ROE. Thank you very much. The committee has not been delaying at all. The committee has been having intensive hearings because I am sure as you can appreciate in order to arrive at a consensus with 435 Members of the House and 100 Members of the Senate we have to do our work thoroughly. You wouldn't want us to close someone off from testimony until they have had the opportunity to make their presentation. That is the purpose of our forum.

Mrs. JOHNSON. Yes, well, I realize that.

Mr. ROE. Now, are there any questions? We should vote right now on your bill. I want to thank you very much for an indepth presentation. I think it is excellent. I, too, agree, particularly in the area of H.R. 4037, Jim Oberstar's presentation, because I don't think the committee has devoted enough attention, nor has the Senate, to that particular issue on the nonpoint source runoff.

We will get into that in depth.

Mrs. JOHNSON. I think it really——

Mr. ROE. It needs that kind of review.

Mrs. JOHNSON. It certainly does.

Mr. ROE. So we appreciate your testimony very much, and will give it every consideration.

Mrs. JOHNSON. Thank you very much.

Mr. ROE. Our next witness is Mr. Mark Hyner of the Connecticut Association of Metal Finishers to be introduced by Congresswoman Nancy Johnson.

Is Nancy here?

Mr. HYNER. I am afraid her plane was delayed.

Mr. ROE. And she is trying to get here. Well, on behalf of Mrs. Johnson I want to welcome you very much to the committee. I am sorry her plane is late. She is a very substantive Member of Congress. She will add to your presentation.

TESTIMONY OF MARK S. HYNER, ON BEHALF OF CONNECTICUT ASSOCIATION OF METAL FINISHERS

Mr. HYNER. Chairman Roe, distinguished members of the subcommittee, council and staff, my name is Mark S. Hyner, and I am here today representing the Connecticut Association of Metal Finishers.

On behalf of the association, I would like to take this opportunity to publicly thank Representative Johnson for her efforts on our behalf and further thank this subcommittee for its time and attention to our concerns. As background, our association has, over the past few years testified before the House of Representatives Environmental, Energy and Natural Resource Subcommittee and the Senate Subcommittee on Environmental Pollution, with respect to the Resource Conservation Recovery Act and the Federal Water Pollution Control Act, respectively. I reference this testimony only to better acquaint you with our analysis of the existing Federal environmental programs.

Our association members represent approximately 100 metal finishing companies in the State of Connecticut. The 2,000 or more people employed in the metal finishing industry in our State supply services for a broad spectrum of industries, including the aircraft, automobile, computer, and metal equipment fields. Even unsophisticated products like paperclips and pencils could not be made without our services. Our processes prevent corrosion, increase life, reduce wear and insure the operating reliability of American-made products.

Since the enactment of the Clean Water Act, Connecticut business and industry has been at the forefront of the development and implementation of waste treatment and disposal technologies, especially as related to the metal finishing and electroplating industries. During the past 10 years, the metal finishing industry in the State of Connecticut has invested millions of dollars and thousands of hours of time of highly qualified technicians and engineers to make certain that it would meet the standards established by the Clean Water Act.

Our industry has spent this money and performed these functions because we believe that the metal finishing industry, as well as all other industry, does have a public responsibility to make sure that rivers and streams are not polluted by our processes. We believe that the aims and the purposes of the Clean Water Act are proper and believe strongly that uniform standards should be established to assure that metal finishing companies in all States

adhere to these standards and thereby provide a better environment.

We are extremely proud of what we have accomplished environmentally in our State. We again have salmon in the Connecticut River. We boat, swim, and fish in rivers that 10 years ago were nothing more than open sewers. In Connecticut, we have met and continue to meet the objectives of the Clean Water Act.

While being justly proud of our accomplishments which have cost our industry millions of dollars for pollution abatement equipment and constant ongoing operating expenses associated with treatment facilities, we find ourselves in the midst of a dilemma.

We have abided by the Clean Water Act, the regulations and enforcement procedures promulgated by the act. We have not fought nor opposed State interpretations of the act. We find, however, a complete lack of uniformity in the interpretation, implementation, and enforcement of the act throughout the country. This inequality has placed us at a severe economic disadvantage. It is ironic that we, the metal finishers of Connecticut who have supported the goals and purposes of the act should now find ourselves wondering whether our competition in other States will ever achieve our levels of environmental success.

As you are well aware, our concern and dissatisfaction is not directed at this subcommittee nor H.R. 3282. To the contrary, we wish to commend the authors and sponsors of this bill for all of their efforts with respect to this product. It is our hope that the language of this bill will, to a large extent, be incorporated in the Federal Water Pollution Control Act and go far to establishing technological and enforcement parity amongst and between the States as well as the EPA regions, with respect to water quality, direct discharge, publicly owned treatment works, and pretreatment regulation. Our continuing concern with national uniformity of standards and enforcement is a direct result of being placed at a 10 to 25 percent economic disadvantage to the industry located in the States immediately surrounding Connecticut. The several specific comments and concerns which we do wish to raise are as follows:

One, while we support H.R. 3282 for its general emphasis on national uniformity, we also request that any and all revisions or additions to the act be drafted to further that national uniformity.

Two, we want to commend the proponents of this bill, the House of Representatives, and this subcommittee for not including in the bill any provision for publicly owned treatment works to opt out of the national standards. The absence or deletion of the opt-out provision goes far to allay the association's fears and concerns expressed in the Senate hearings. Namely, that a program allowing publicly owned treatment works to opt out of national standards is not politically nor economically realistic, not enforceable, and will result in minimal treatment if any, increased industrial forum shopping, and increased hazardous waste problems.

Three, with respect to section 303(c)(2) of H.R. 3282, the Association supports the proposed language which would require that certain factors be demonstrated before less restrictive uses are allowed. The Connecticut Association of Metal Finishers does, however, advocate that with respect to States wishing to improve or up-

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grade their water quality standards, national criteria should be established which a State would be required to satisfy prior to such a revision. Absent such criteria, the program envisioned might result in greater disparity in jurisdictions and foster the unsound environmental result of forum shopping by industry.

If water quality classifications are scheduled to be upgraded, the reclassification should be accompanied by a time line so that the regulated concerns can formulate sound environmental planning decisions. An additional concern with this section of the proposal is that if the water quality classification of the receiving or downstream jurisdiction is more restrictive than the upstream jurisdiction, then the waters crossing the State lines should be subject to the more restrictive standard.

Four, with respect to section 304 and the recommendation that the Administrator establish individual control strategies for specific point source discharges of toxic pollutants which prevent or impair the attainment of a given water quality, the Connecticut Association of Metal Finishers supports this proposal. To avoid the degradation of downstream waters and/or the resultant environmental forum shopping, the association does, however, recommend that H.R. 3282 be revised to provide interstate standards as well as a mechanism for enforcement.

For the foregoing reasons, we support H.R. 3282 as amended by our comments. Our association appreciates your attention and hopes that you will incorporate our comments concerning the uniformity of water quality, pretreatment and enforcement standards. Most importantly, we urge you to pass this legislation this session.

On behalf of the association, I again want to thank you and Representative Johnson for this opportunity to appear and present testimony.

Mr. ROE. Thank you very much for a very concise, clear presentation. Does anyone have any specific questions?

The gentleman from Minnesota?

Mr. STANGELAND. Thank you, Mr. Chairman.

You indicate support for uniform standards to assure that metal-finishing companies in all States are subject to the same requirements. It is my understanding that the effluent guideline regulations for the metal finishing industry have been promulgated. Is that correct?

Mr. HYNER. They have been, and if they are enforced uniformly and they meet, I guess it is the April 1984, we would be satisfied. It has been a history of 10 years for us of having these standards promulgated, fought off, promulgated and fought off, and they are still not in place in many, many States.

Mr. STANGELAND. I gather the Connecticut metal finishers are satisfied with those standards?

Mr. HYNER. We have no problem with them.

Mr. STANGELAND. Are there differences between those standards and those throughout the country?

Mr. HYNER. There sure is. We used to be part of the National Association of Metal Finishers. Approximately a 1½ or 2 years ago we withdrew from the national over this very issue. We felt their tactics were delaying and serving no purpose.

Mr. STANGELAND. Could you give us the view of the national group?

Mr. HYNER. I think the national feels the standards are too strict and too costly. We disagree.

Mr. STANGELAND. You also mention on pages 3 and 4 that current implementation of the Clean Water Act requirements lacks uniformity and has placed the Connecticut metal finishers at serious economic disadvantage. How has this economic disadvantage been created, and why aren't all metal finishers near the State of Connecticut or throughout the Nation not subject to the same standards?

Mr. HYNER. Because region I has the same standards we are talking about in the testimony. The States of Vermont and Connecticut have chosen to formulate their own Clean Water Act. Connecticut did this, I believe, in 1969, so from the early 1970's all the metal finishers in Connecticut have been treating their water.

Rhode Island, for example, has not chosen to do that and metal finishers in Rhode Island still are not treating their water with a couple exceptions.

Mr. STANGELAND. Is that because Connecticut and Vermont chose higher standards?

Mr. HYNER. Connecticut does have higher standards than the proposed Federal standards but chose to enforce them and start their own program. In the case of Rhode Island, Region I EPA has just chosen not to enforce that because these regulations have not been fully promulgated or accepted. As it stands now, I believe it is April 1984 that these have now been settled, I hope.

Mr. STANGELAND. The regulations will have been formulated by April 1984?

Mr. HYNER. I think that is the date they are suppose to go in place. I am not certain. It keeps changing.

Mr. STANGELAND. You also suggest that this committee should not support any amendment to the Clean Water Act which provides for publicly owned treatment works to opt out of the national standards. There has been much discussion about the possibility of creating a pretreatment equivalency or opt-out opportunity in the act. I assume this is what you are referring to.

If the POTW can demonstrate that the locally imposed pretreatment program is at least as environmentally protective as one that would be required under uniform national standards, why shouldn't that POTW be allowed to operate under its own system?

Mr. HYNER. We addressed that specifically in the Senate testimony. But to go over it briefly, we don't feel that the control on a day-to-day basis can be exercised by a POTW. We feel the vast majority of them are set up to treat household and human waste. They are not set up to treat industrial waste. We are equipped to treat what we deal with. We don't feel they are. They can't handle specific discharges. They have trouble if there is an overflow situation.

We feel that, and this has been the subject of discussions with the Connecticut EPA which has worked with us on this testimony, that the technology at POTW's just is not built for handling industrial waste, and it is better to treat it there.

Second, what metals, for example, from our industry do come out into the sludge then contaminates the sludge from the POTW

which if uncontaminated can be used for fertilizer or can be incinerated. If you contaminate it with metals, you have contaminated a huge amount of waste under RCRA.

Mr. STANGELAND. I guess the question is if the pretreatment is proven cost effective and also environmentally protective, then you wouldn't oppose the opt out. And a POTW couldn't opt out if they couldn't prove that.

Mr. HYNER. Well, there would have to be some considerable proof I guess for me to accept it, because I just don't believe that that would be a long run—we have problems with our own systems on a day-to-day basis. I would hate to see what would happen as we put stuff into a POTW.

Mr. MOODY. You have said the fact you have gone ahead and invested this money puts you at an economic disadvantage with your competitors in other States that haven't done so?

Mr. HYNER. Yes, sir.

Mr. MOODY. Thank you.

Mr. ROE. You know I think you are making a good point which I would just like to kind of close on this note. We have been fighting since 1972, and I am afraid unsuccessfully, to have the combined sewer issue, are you familiar with that issue?

Mr. HYNER. Somewhat.

Mr. ROE. Of that as an integral part of the system. And constantly and constantly and constantly between the Senate and administration. Not this administration, all the administrations. They have written that off and said we can't afford to do that.

You are coming back and saying one of two things. If we don't do the pretreatment as we are doing as you handle it now, removing any of these toxic materials, and others, before it gets to the main sewage disposal plant, then we are simply contaminating the sludge from the sewage disposal plant which has another problem, to take care of it, is that correct?

Mr. HYNER. That is exactly it.

Mr. ROE. It literally astounds me why these people can't understand that in the Senate particularly, because in the Northeast, particularly in the State of New Jersey, and also in Boston and other areas in Massachusetts, they still have the combined sewer situation. So that immediately when we have any major storms, major runoffs, it scours out all the material and puts it right back into the river. So basically what you are saying, if the Federal Government opts out not to be concerned about correcting the combined sewer issue, separating those sewers, then it almost mandates you to do something to treat those heavy metals or whatever in the plating industry before it gets into the sewer system because it will never even get to the sewage disposal plant where they have those combined sewers. Is that correct?

Mr. HYNER. You are absolutely correct.

Mr. ROE. Could you talk to your people in Connecticut, Vermont, and Rhode Island on that very issue in the Senate? It would be so helpful.

Mr. HYNER. I have appointments with both of them this afternoon.

Mr. ROE. Please make that point. I say this as a citizen technically trained, it is a tragedy. I hate to see the American people had, or

being told something that isn't true. We are never going to clean up those rivers in the Northeast and those bays until we correct that combined sewer program, because it is flying in the face of everything we are talking about on these standards.

Mr. DAUB. Will the chairman yield?

Mr. ROE. Yes, of course.

Mr. DAUB. It is not just true of the Northeast. I served on the Environmental Control Board in the State of Nebraska for 2 years with some familiarity with RCRA and sludge management. We can do all the farm and feedlot sludge management program we want, but if on the borders of cities where we are not doing the right things with industrial waste problems, tool and diemakers, and other kinds of light and medium industry, we end up with the same problem. We didn't solve it.

I do think we need to work on it. I think pretreatment opt-outs are not to be rejected out of hand, however. I think you should take a look at the opportunity from a Federal point of view of just being sure that the pretreatment plan is tested, workable, and operative. There may be circumstances where they are useful.

So I didn't want you to miss the point of the dialog a minute ago, that they may be all right if in fact they are just not a piece of paper that you know is approved by somebody and then, here, go do it. That in fact if that is not in place and with best available technology is not going to function to be the standard as required by RCRA, then I don't think the opt out should be allowed.

But I do think they should not be discarded simply because they, as a policy option, might not be administered correctly.

Mr. HYNER. May I make a point?

Mr. ROE. Of course.

Mr. HYNER. Part of our approach is that we do not wish to see treatment by dilution. One of the things that at least the State DEP has said to us is that that is frequently what happens. If you have to meet a standard of one part per million of nickel, if that happens to be the standard that is established on a river or through the EPA standards, if it gets into a system that dilutes it down from 10 parts per million to 1 part per million without effectively removing the metal, at the end of the pipe that metal is still there.

Mr. DAUB. I just don't want you to prejudge what kind of treatment might be suitable or appropriate on that basis. That is the point.

I thank the gentleman for yielding. I want to cooperate with him on working on this combined treatment idea because we are really not going to, in cities and border farm communities, solve a lot of problems if we don't have a combined attitude about how we interrelate the two processes.

Mr. ROE. Mrs. Johnson made a good point. You also closed your testimony and came back and said to get something done—and we want to, too. We wrote the first part of this bill in 1972. This very same committee, many of the people on this committee. We have lived with this interpretation, if you like, and to try to get the thing done to achieve the goals. What exasperates us is we know what we are trying to write into law and we know what we are trying to achieve, but when we get to the regulatory end of

it and other people interpreting what Congress means, it comes out just the opposite. That is what our concern is.

I think what the gentleman is saying is that we have to have some kind of flexibility. But we also have to educate Members of Congress and the administration, whatever the administration may be, to understand that we are dealing with the whole. We are not dealing with a part.

Yesterday, in discussion with representatives from those four States I tried to point out one very important thing to them. I said what we do in clean water is important. What we do in the water resources development bill, which is the construction bill, hydropower, water transportation, that is important. What we do in the Superfund, RCRA bill is critical but they are all one and the same.

If we have one set of regulations fighting one another, even from EPA, regulations counter each other. Just keep that in the back of your mind when you are talking to your senatorial representatives. We could use help on the Senate side.

Mr. HYNER. We will do that.

Mr. ROE. If there are no further questions from the gentleman, we want to thank you for being with us this morning. We certainly will give the greatest attention to all the testimony this morning.

The committee will recess until tomorrow morning. We will reconvene in room 2167 tomorrow for continuation of our hearing.

Committee stands recessed. For the members benefit, the hearings will start at 9:30 tomorrow morning.

[Whereupon, at 11:15 a.m., the subcommittee recessed, to reconvene at 9:30 a.m., Wednesday, October 19, 1983.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

WEDNESDAY, OCTOBER 19, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to recess, at 9:40 a.m., in room 2167, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen. We will continue today with our hearings of yesterday on the clean water bill.

We have with us this morning Mr. John Siegmund, who is representing the Environmental Affairs Committee of the American Society of Mechanical Engineers.

We want to welcome you, Mr. Siegmund.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF THE ENVIRONMENTAL AFFAIRS COMMITTEE

Mr. Chairman, members of the subcommittee, I am John W. Siegmund, a member of the Environmental Affairs Committee of the American Society of Mechanical Engineers, and a partner in the environmental consulting firm of Sheppard T. Powell Associates, Baltimore, Maryland.

On behalf of the ASME committee, I am pleased to have this opportunity to express our views on effluent standards, treatment of toxic pollutants, wastewater pretreatment standards, and groundwater protection under the Federal Water Pollution Control Act.

The American Society of Mechanical Engineers is a technical and educational organization with a membership of 107,000. It has nearly 180 Sections throughout the nation and members with diverse technical interests as represented by ASME's 32 technical divisions. The Society conducts one of the world's largest technical publishing operations, including technical papers, books, codes and standards.

This statement was prepared by the Environmental Affairs Committee of ASME. It represents the considered judgment of this committee, a group of engineers with expertise in the field, rather than an official position of ASME.

EFFLUENT LIMITATIONS

The establishment of BAT effluent standards and enforcement of Public Law 92-500 and Public Law 95-12 will result in almost all major industries with direct discharges to the nation's streams reducing their discharge of pollutants to practical minimums.

The largest polluters of our streams today are (1) municipalities which either have not constructed facilities or properly operated them to adequately treat their wastewater; and (2) nonpoint sources. The adoption of discharge parameters beyond secondary treatment, without consideration of stream self purification capabilities for conventional pollutants, in some instances has resulted in the expenditure of un-

necessary Federal and local funds, as well as the design and construction of facilities too sophisticated to be operated and maintained by personnel who have not had equally sophisticated training.

Therefore, the Committee believes the Clean Water Act should be amended to permit a usage of both stream and effluent standards for conventional pollutants. This, existing effluent standards should remain intact and new more rigid standards required whenever warranted by local water quality conditions.

The adoption of further discharge parameters and BCT requirements without consideration of stream self-purification capabilities for conventional pollutants may result in the waste of resources. Under the previous provisions of Public Law 92-500, all streams in the U.S. have been classified as to usage. Using stream standards as a basis for permitting, reasonable treatment without stream degradation could be provided.

With the significant strides made in cleaning up the industrial discharges to the nation's streams, it is believed that the use of stream standards for conventional polluants offers an opportunity to assess benefits versus costs. Under the current law the importance of stream classifications has been minimized, since all major industry discharges must at least meet BCT levels. The only time stream classifications achieve a degree of importance is when BCT discharges will result in stream degradation, and then stream quality control provisions of the regulations must be brought into play. By initiation of stream standards, attention will be focused on stream classifications and opportunities will be presented to review and possibly reclassify, up or down, streams which have been misclassified in the past.

Water Quality Standards for conventional pollutants will allow the nation to husband its resources for expenditure where the cost/benefit ratio can be more attractive and serve a greater number of people. By utilizing the stream classifications under a water quality standards program, industries, states, and municipalities would not be required to expend funds for BCT or secondary treatment unless the additional expenditure would result in a consequential improvement of the stream.

We must recognize that due to differences in geographical, geological, topographical, and climatic conditions, the same standards cannot be met in all parts of the U.S. The quality of the nation's streams before man made pollution, was dictated by natural conditions in the individual watersheds and streams themselves. A stream's self-purification capabilities are a good example of nature working to solve its problems. Recognizing that it is always difficult and many times impossible to improve on nature, we are happy to see the EPA recognizing a stream's self-purification capabilities in allowing it to return to its natural state.

TOXIC POLLUTANTS

By proposing Water Quality Standards, the EPA has acknowledged the points raised, but may have taken the regulations a step further than is prudent at this time. The effluent limitations on toxic substances must remain in place and not be waived or relaxed.

We have suggested, that over a period of time a workable water quality based approach can be implemented for toxic substances, but in our opinion that time has not yet come. At the present time, the only effects of toxic pollutants on streams that can be predicted with any degree of certainty are the dilution ratios. In many cases it is impossible to measure the levels of toxic pollutants in our streams accurately enough to be of any value. The information needed to develop toxic pollutant water quality standards which would ensure the continued improvement of our waterways is not now available.

Therefore, before such standards can be implemented properly, the EPA must do the necessary research. We recommend that the EPA begin a well funded research program on toxic pollutants which will increase the knowledge of these pollutants to the level we now have on conventional pollutants.

The EPA must develop techniques to predict the fate and effects of the toxic pollutants under a variety of conditions using mathematical modeling based on instream testing. Once this research is completed and proven the EPA should develop Water Quality Standards for toxic pollutants. But to do so before the research is completed would undermine the efforts of the past ten years to control toxic pollutants.

Until this is done, every effort to use available technology should be made to minimize the discharge of toxic pollutant into waterways. At this time, we believe EPA must promulgate BAT for particular toxic pollutants, and dischargers of those pollutants should have three years to develop the appropriate technology and build the necessary facilities to comply.

We believe an effective approach for the return to Water Quality Standards must involve four steps:

(1) The effluent guidelines already developed for conventional pollutants should remain intact and put into effect;

(2) Water Quality Standards should be used to develop permits for those industries for which effluent guidelines have not been developed and those areas where effluent guidelines have not been nor are expected to be sufficient;

(3) The EPA should begin immediately a long-term research program on the effects of toxic pollutants on water quality and the aquatic environment, and to determine the appropriate relation to standard setting; and

(4) When the research is completed and proven, the EPA should promulgate Water Quality Criteria for toxic pollutants.

The Act should be amended to allow for greater use of the "innovative" classification which permits extension of the compliance dates. For example, if a facility subject to permit under section 402 of the Act proposes to comply with the requirements of section 301 by replacing existing production capacity with:

A. An innovative production process which will result in effluent reduction significantly greater than that required to meet stream standards. This would be a move toward the national goal of minimizing the discharge of all pollutants;

B. The installation of an innovative control technique that has been demonstrated on a small scale and has been held by peer review to have a substantial likelihood for achieving a significantly greater effluent reduction than required;

C. A process that achieves the required discharge reduction with an innovative system that has a potential for significantly lower costs than systems commonly in use and has the additional potential for industry-wide application;

Then that facility should be granted an extended compliance date to July 1, 1987. This should only be allowed, however, if actual experimental data are developed and/or the process has the potential for industry-wide application as determined by peer review.

In addition, we believe the term "no discharge" should be replaced with the term "standard of performance." "No discharge" has proven to be impractical in most cases. The term "standard of performance" would be defined as the standard for control of effluent reduction which the Administrator determines to be achieveable through application of the best available demonstrated technology, processes, operating methods, or other alternatives.

PRETREATMENT

EPA has been proposing pretreatment standards for Significant Industrial Users (SIUs) to Publicly Owned Treatment Works (POTWs) for at least the past six years without actually promulgating any standards. States are required to have Pretreatment Standards programs to obtain Primacy, and municipalities must agree to set up and enforce pretreatment standards to be eligible for the Construction Grants Programs. However, EPA has yet to promulgate definitive standards even though in many cases standards for discharge to POTWs were included in the Effluent Guidlines proposed.

It is difficult to understand how states and municipalities can be expected to develop acceptable standards when EPA itself is having difficulty making these decisions. Since most POTWs have been built under the Construction Grants Program and have utilized Federal funds, EPA should be mandated to take a position on pretreatment standards. The agency should either promulgate standards for SIUs or require the states to adopt standards without EPA oversight so this part of the program may proceed expeditiously.

GROUNDWATER PROTECTION

EPA and the states already have sufficient groundwater protection authority. Therefore, the problem does not presently warrant new legislation, but rather implementation and enforcement of existing authority. Because of the myriad of laws concerning quality of water—both ground and surface—coordination and consolidation of such laws are needed.

This concludes the statement, Mr. Chairman. Thank you again for the opportunity to participate in this hearing, and I would be pleased to answer any questions you or the Subcommittee Members may have.

Mr. ROE. Please proceed.

TESTIMONY OF JOHN W. SIEGMUND, MEMBER, ENVIRONMENTAL AFFAIRS COMMITTEE, AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Mr. SIEGMUND. Thank you.

Mr. ROE. We have your testimony but you go right ahead and proceed.

Mr. SIEGMUND. Mr. Chairman and members of the subcommittee, I am John W. Siegmund, a member of the Environmental Affairs Committee of the American Society of Mechanical Engineers, and a partner in the environmental consulting firm of Sheppard T. Powell Associates, Baltimore——

Mr. ROE. Of Baltimore?

Mr. SIEGMUND. Yes, sir.

Mr. ROE. Something very important happened there recently didn't it?

Mr. SIEGMUND. Yes, sir. Stick with those Orioles.

On behalf of the ASME committee, I am pleased to have this opportunity to express our views on effluent standards, treatment of toxic pollutants, wastewater pretreatment standards, and ground water protection under the Federal Water Pollution Control Act.

The American Society of Mechanical Engineers is a technical and educational organization with a membership of 107,000. It has nearly 180 sections throughout the Nation and members with diverse technical interests as represented by ASME's 32 technical divisions. The society conducts one of the world's largest technical publishing operations, including technical papers, books, codes, and standards.

This statement was prepared by the Environmental Affairs Committee of ASME. It represents the considered judgment of this committee, a group of engineers with expertise in the field, rather than an official position of ASME. The full text of our statement has been submitted to the subcommittee, and I will summarize its contents.

ASME's Environmental Affairs Committee believes the Clean Water Act should be amended to permit usage of stream and effluent standards for conventional pollutants. Existing effluent standards should remain intact, and new more rigid standards adopted wherever warranted by local water quality conditions. Adoption of further discharge parameters and best conventional treatment requirements without consideration of stream self-purification capabilities for conventional pollutants may result in a waste of resources.

It is believed that the use of stream standards for conventional pollutants offers an opportunity to assess benefits of effluents treatment versus costs. Under current law, the importance of stream classifications has been minimized, since all major industrial discharges must meet best conventional treatment levels.

In regard to toxic substances, the committee believes effluent limitations on toxic substances now in effect must remain in place, and not waived or relaxed. However, information needed to develop water quality standards for toxic pollutants which would insure the continued improvement of our waterways is not now available.

In many cases it is impossible to measure the levels of toxic pollutants in our streams accurately enough to be of any value. Before water quality standards for toxic pollutants can be implemented properly, EPA must begin a well-funded research program on toxic pollutants to a level we now have on conventional pollutants. Until then every effort should be made to use available technology to minimize the discharge of toxic pollutants into waterways. We believe EPA must promulgate best available treatment for particular toxic pollutants and dischargers of these pollutants should have not less than 3 years to develop the appropriate technology and build facilities to comply.

Another part of the act we believe needs to be examined involves innovative technology. The act should be amended to allow for greater use of the innovative classification which permits extension of the compliance dates. For example, when a facility subject to permit under section 402 of the act proposes to comply with the requirements of section 301 by replacing existing production capacity with an innovative production process will result in effluent reduction significantly greater than required to meet stream standards, then this facility should be granted an extended compliance date to July 1, 1987.

In addition we believe the term "no discharge" should be replaced with the term "standard of performance." No discharge has proven to be impractical in many cases. The term "standard of performance" should be defined as the standard for control of effluent reduction which the Administrator determines to be achievable through application of the best available demonstrated technology, processes, operating methods, or other alternatives.

A serious problem, particularly in the case of small understaffed publicly operated treatment works concerns pretreatment of wastes they receive. EPA has been proposing treatment standards for significant industrial users [SIU's] to publicly owned treatment works [POTW's] for at least the past 6 years without actually promulgating any standards. States are required to have pretreatment standards programs to obtain primacy, and municipalities must agree to set up and enforce pretreatment standards to be eligible for the construction grants programs. However, EPA has yet to promulgate definitive standards even though in many cases standards for discharge to POTW's were included in the effluent guidelines proposed.

Since most publicly owned treatment works have been built under the construction grants program and have utilized Federal funds, EPA should be mandated to take a position on pretreatment standards for significant industrial users, or require States to adopt standards without EPA oversight so this part of the program may proceed expeditiously.

EPA and the States have sufficient ground water protection authority. New legislation is not warranted, but implementation and enforcement of existing authority is needed.

This concludes our statement, Mr. Chairman. Thank you again for the opportunity to participate in this hearing, and I would be pleased to answer any questions you or the subcommittee members may have.

Mr. ROE. We thank you very much for your testimony.

Are there any questions? Mr. Hammerschmidt?

Mr. HAMMERSCHMIDT. Thank you, Mr. Chairman.

Mr. Siegmund, on page 2 of your statement, in discussing the need for increased use of stream standards for conventional pollutants, you mention that "in some instances this has resulted in expenditure of unnecessary funds as well as a design and construction of facilities that are too sophisticated."

On a percentage basis could you estimate the extent to which this situation is occurring?

Mr. SIEGMUND. No, sir, I don't think I can give you a percentage figure on that.

Mr. HAMMERSCHMIDT. On page 3 you mention streams which have been misclassified in the past. To what extent nationwide has there been a problem with misclassification of streams? Why have these misclassifications occurred?

Mr. SIEGMUND. Do you say misclassifications?

Mr. HAMMERSCHMIDT. Yes. Of streams.

Mr. SIEGMUND. Well, some streams I feel, this is my own personal view because I am not expressing the view of the committee, in some cases a stream's capability of handling effluents has been overlooked. And I don't think enough study has been given to all the streams to really classify how much of a waste load they can or cannot handle. In so many cases streams are looked at with a view that they should be 100 percent cleaned up. Well, experience has shown us that a stream can assimilate wastes, and do so without creating a block across the stream to prevent fish life from living nomally in the stream.

Mr. HAMMERSCHMIDT. Well, of course, this is a fairly important issue.

Mr. SIEGMUND. Certainly.

Mr. HAMMERSCHMIDT. About the classification or misclassification of streams. I wonder if you could supply, if not today, perhaps for the record, as many specific examples as possible of streams that illustrate the problem.

Mr. SIEGMUND. I think I can provide you with an illustration along this line.

Mr. HAMMERSCHMIDT. I think the more comprehensive you could make that, the more helpful it would be to the committee.

[The information requested had not been received by the Subcommittee at time of publishing.]

Mr. HAMMERSCHMIDT. I just have one more question, Mr. Chairman.

On page 3 and 4 you take the position that effluent limitations for toxic substances should not be waived or relaxed because we do not currently have the information needed to make proper waiver decisions. You suggest EPA embark on a significant research effort in this area.

What estimates can you provide the committee in terms of the necessary funding level, length of time and program design for such a research effort?

Mr. SIEGMUND. You have caught me again on this one for specifics. I can take this back to our committee and come up with an answer for you I believe.

Mr. HAMMERSCHMIDT. If you would supply that also for the record, it would be most helpful.

Mr. SIEGMUND. Yes, sir.

[The information requested had not been received by the subcommittee at time of publishing.]

Mr. HAMMERSCHMIDT. Thank you for your testimony, Mr. Siegmund.

Mr. SIEGMUND. Thank you.

Mr. ROE. The gentleman from Georgia.

Mr. ROWLAND. Thank you, Mr. Chairman.

Mr. Hammerschmidt touched somewhat on my question. You say that EPA must do necessary research and develop standards. How far do you feel EPA needs to go in developing techniques? Also, do you feel that most of this should be done by government? Or how should industry be involved in developing techniques and standards?

Mr. SIEGMUND. Well, industry does have a good bit of information on handling their own toxic wastes. This information should be used to the fullest but the Government I guess is the best group to research some of the problems we have with some of these toxic wastes.

Money would have to be spent, obviously. One of the problems that we have, or I have as an individual working in the field occasionally are using methods for measuring toxic wastes, first of all. This is why we put that statement in there about measurement. Some of the analytical techniques are far from being what they should be to tell us what is actually there.

I think we need to move in that direction first, to know what we have. And then also to proceed with the necessary treatment that would remove these wastes.

Mr. ROWLAND. Do you feel an adversary relationship exists between EPA and industry?

Mr. SIEGMUND. At the moment I don't feel that tension that I used to feel. I think there is more cooperation today than there has been before.

Mr. ROWLAND. Thank you. Thank you, Mr. Chairman.

Mr. ROE. Fine. Are there any further questions?

Mr. Siegmund, we want to thank you very much, and we look forward to your response to the questions of Mr. Hammerschmidt and others. We appreciate that. Thank you very much for being with us this morning.

Our next witness is Mr. Kermit L. Prime, who represents the National Society of Professional Engineers.

I want to welcome Mr. Prime to our hearing. If you would identify for the record your associate, we would appreciate that.

TESTIMONY OF KERMIT L. PRIME, P.E., CHAIRMAN, NSPE'S LEGISLATIVE AND GOVERNMENT AFFAIRS COMMITTEE, NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS, ACCOMPANIED BY BILL FOGARTY, ASSISTANT DIRECTOR, LEGISLATIVE STAFF

Mr. PRIME. Thank you. The gentleman to my left is Bill Fogarty, Assistant Director of the Legislative Staff of the National Society of Professional Engineers.

Mr. ROE. Mr. Fogarty.

OK. We have your testimony, if you will go ahead and proceed.

Mr. PRIME. Mr. Roe, there have been some slight modifications to the testimony sent to the staff on Monday. The current testimony was given to the clerk this morning. I will do what you choose. I can read the current testimony or summarize.

Mr. ROE. Go ahead and read the testimony. I think it is good.

Mr. PRIME. Thank you, sir.

Mr. Chairman, I appreciate having this opportunity to appear before the subcommittee today on behalf of the National Society of Professional Engineers to discuss the reauthorization of the Federal Water Pollution Control Act. My name is Kermit L. Prime, P.E., and I am chairman of NSPE's Legislative and Government Affairs Committee and a principal engineer with the Boyle Engineering Corp. in Orlando, Fla.

With a membership of approximately 80,000 individuals from every field of the engineering profession and every State in the Union, one of NSPE's primary missions is to serve the public by offering viewpoints on matters of public policy in which engineering background and expertise are pertinent. The Nation's clean water programs certainly fall into this category, and because of the diversity of our membership, we view these efforts from several perspectives.

Our members in private practice and local government recognize the need for Federal assistance in meeting national water quality goals and see the benefits to their communities in upgrading water treatment. However, we are also frustrated by the requirements of the grants program, which are both complicated and subject to frequent change. Engineers in State government and those employed by the U.S. Environmental Protection Agency face the difficulty of translating national objectives into programs which are workable on the local level. Finally, our members in industry have been caught in the debate over pretreatment and the extent to which publicly owned treatment works can be utilized to treat industrial effluents. Therefore, our members have witnessed the successes and failures of the Federal Water Pollution Control Act from diverse points of view.

One of our overriding concerns is the need to bring stability to these programs. Over the years the one major contributor to confusion, antagonism and, in some cases, unsatisfactory results has been the fact that all the players have been shooting at a moving target—a law with attendant rules and regulations, all of which have been subject to change with an unusual degree of rapidity. Therefore, if we make no other point here, we at least hope to stress our support for a minimum of change in the law. While we recognize that some beneficial revisions can and should be made at this time, we hope that the subcommitte will approach any major changes with a large measure of caution.

Having made this very general point, I will reference my specific comments to H.R. 3282, the "Water Quality Renewal Act of 1983," although it is my understanding that the subcommittee has not yet determined what will be the actual vehicle for markup.

First, with respect to funding for sewage treatment plant construction. Mr. Chairman, NSPE opposes the increases in funding

provided under H.R. 3282 for the sewage treatment construction grants program in fiscal years 1984 through 1988. We support funding levels of $2.4 billion per year, consistent with the Omnibus Budget Reconciliation Act of 1981.

Mr. ROE. If I can stop you there. You have made very profound statements already. Tell me why you say that.

Mr. PRIME. Again, that is consistent with our observations that the law and regulations relating to the construction grants program has changed so dramatically. Furthermore, the uncertainty with respect to the future of Federal funding puts many grantees or local political subdivisions in the position of uncertainty with respect to action that they should take. Should we wait a couple more years and see what is going to happen, if the Feds are going to generate more money? Or should we proceed today with our own projects and our own funding?

Mr. ROE. What puzzles me by that statement is, first of all, I agree with what you have said so far. I think you have made an excellent opening statement. Having said that, one comes back and says we already know that there are projects stopped all over this country that have been segmentalized under this and previous administrations, only part and pieces completed.

Don't you think we ought to go ahead and finish those?

Mr. PRIME. Yes, sir. I think in the next paragraph we give our position with respect to completing projects and offer alternative suggestions for funding the remaining projects that aren't——

Mr. ROE. Then I better wait until you have finished. Go ahead.

Mr. PRIME. Yes, sir. Again we advocate continuing that annual level of grant assistance until those projects currently approved for funding on the various States' priority lists are funded. So, this, Mr. Chairman, addresses the segmented projects you were referring to I believe.

Mr. ROE. What puzzles me, I know what has happened in my own State. It is a function of whether we have enough money to get the job done. In effect, with the lack of funding or minimal funding we are falling behind in every area in that State. We can't raise enough money to do it locally.

Mr. PRIME. Let me reemphasize, the point is maintain the $2.4 billion funding level to complete those projects which are on the fundable portion of the State priority list currently, not the planning portion. What we are saying is those projects that have been assured they would receive funds, have planned for, have gone through the redtape necessary to be eligible for grant funding——

Mr. ROE. It just doesn't work that way. That is what I am trying to say to you. It just doesn't work that way. I have to speak to my own State at the moment. I shouldn't be interrupting your testimony, and I am not suggesting that you are wrong. I am simply saying we know the program in New Jersey will be set back 10 years at the rate we are funding it now. No question about it.

Shouldn't the engineers be in a position of saying we ought to be able to accept that? But I shouldn't interrupt. Go ahead.

Mr. PRIME. I would like to be sure I am making myself clear. The things we are talking about funding are the ones that are currently on the fundable portion of the priority list, not the ones that are on the planning portion, which I think is where you will find the ma-

jority of these projects that would take 10 years to complete lie. With respect to those, we offer an alternative method of solving the problem.

Even though the short-term economic interest of engineers might be better served by a larger grants program which stimulates more POTW construction, we are convinced that the $2.4 billion annual cap is more appropriate. Not only will the doubling of the size of the grants program by fiscal 1986 exacerbate the Federal Government's severe budgetary problems, such an action also would continue the pattern of widely fluctuating funding levels which have undermined the program's stability in the past.

It also would impose an additional administrative burden on Federal and State agencies which already are overburdened. Furthermore, State and local officials cannot possibly be expected to formulate realistic plans for meeting wastewater treatment needs under these conditions. On one hand, they cannot accurately gauge their chances for receiving grant assistance because the national government has not maintained a consistent level of funding. On the other hand, proposals for sharp increases in funding cause those officials to be reluctant to undertake projects utilizing their local resources in view of potential Federal assistance. If we truly hope to encourage the States and localities to shoulder more responsibility in providing wastewater treatment, then the grants program funding must be stabilized at current levels, and clearly identify those which will receive funds.

Discussions with engineering firms around the country have revealed that many communities which should upgrade their facilities and could finance the work from local resources are delaying this work in hopes of achieving Federal grant assistance. Even in communities where the potential for receiving such aid is extremely low, local officials are reluctant to commit money as long as the possibility of grant assistance exists at all.

Unfortunately, proposals to substantially increase this funding encourage such attitudes, even though doubling the size of the program would still leave many eligible communities on waiting lists for many years. We just might see more progress on sewage treatment facility construction if local leaders knew that grant assistance will not be forthcoming in many instances, and that they must arrange their own financing for such projects.

We recognize that some communities will not be able to finance needed work from local resources. In such cases, we recommend a greater reliance on mechanisms such as low interest loans and privatization as alternatives to a grants program for those projects not currently on the fundable portion of State priority lists in this fiscal year.

Looking specifically at loans, we believe that this particular mechanism has important advantages over the adoption of a greater emphasis on grants. First, funds provided for loans can benefit a larger number of projects when compared to the same amounts awarded as grants. This is especially true when the loans are provided through revolving funds which allow the repaid loans to be reinvested in additional projects. Proposals to this effect have been introduced in both the House and Senate, although the revolving

funds generally have not been confined to wastewater treatment plants.

Second, in many cases, low interest loans can be substituted for grants without placing unreasonable economic burdens on communities. Our professional engineers in private practice division has conducted an analysis of financing packages using different combinations of grants and low-interest loans for communities of under 25,000, and estimated the impacts of various options on rates paid by individual households. They assumed that the loans would be repaid with a 5-percent interest rate over 40 years. A copy of this study is provided. [See page 1073.]

Our private practice engineers found that a greater emphasis on loans, while causing the rates paid by the individual households to rise somewhat, did not result in major rate increases. For example, one section of this study took a hypothetical community with a population of 6,250, and looked at the impacts on rates of different financing packages. For secondary treatment and the funding alternatives analyzed, the lowest rates per household were achieved by the use of a combination of a grant covering 55 percent of project costs with a subsidized loan funding the remainder of the project. A grant covering 75 percent of the project cost with no loan component produced slightly higher rates. A loan covering all project costs raised rates by approximately $55 per year over the lowest option.

Perhaps most significantly, a low-interest loan covering 100 percent of project costs raised the average household rate by only about $53 per year—or less than $4.50 per month—when compared to a grant covering 75 percent of costs.

Third, we believe that the Federal and State imposed factors which delay grant-funded programs will be minimized with a loan program. Recent analyses indicated that it takes an average of 8 to 9 years to implement a grant-funded wastewater treatment project. These delays actually serve to increase costs and should be avoided through a loan program.

Finally, we feel that a greater dependence on loans will result in a more realistic assessment of needs by the States and greater State and local responsibility for those projects. Some States and localities may maximize their needs assessments to improve their prospects for attaining grants. However, since loans must be repaid, there is less incentive to inflate State needs assessments.

The Farmers Home Administration's loan program for wastewater treatment could be viewed as a precedent for this general type of program. We believe that agency's efforts have worked well in many respects.

For these reasons, Mr. Chairman, we urge the subcommittee to consider the utilization of alternative financing mechanisms such as subsidized loans in place of a larger grants program. While we recognize that the higher grant funding levels in H.R. 3282 represent a well-founded concern over the need for more Federal support for improvement of local treatment capabilities, we strongly believe that such assistance can be provided in a more cost-effective way through loans. We further advocate that such loan programs be administered by the States to the greatest extent possible.

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Let us now speak to the extension of the BAT and BCT deadlines. H.R. 3282 calls for the extension of the deadlines relating to the achievement of best available technology and best conventional technology standards by POTW's. We reluctantly support these extensions. This will not be the first time the deadlines have been postponed, however, and the credibility of any deadline becomes suspect with its continued extension. The agency has had a full decade to develop a workable program to meet the act's goals, and if the new timetables provided under H.R. 3282 are adopted, they should be implemented without additional delay. If the agency again fails to meet the new deadlines, Congress should place the burden on agency officials to explain why the timetables could not be met and to propose alternative, achievable schedules.

Let us now speak to ocean discharge waivers. We have several reservations regarding section 301(h), dealing with ocean discharge waivers. This provision of H.R. 3282 would exclude almost all applications for waivers of secondary treatment for discharge into estuarine areas. However, current regulations have extremely rigorous requirements to show that no degradation is occurring because of discharges. If these requirements are met, it should not matter if the discharge is in the estuary or the ocean.

Also, the POTW's which have been complying with the waiver requirements since 1979 have spent tremendous sums of money to do so. To change the rules now would mean that this money was wasted. Furthermore, statutory changes are not really needed because EPA has not been giving many waivers in estuarine areas. Concerns that the current regulations have opened the door for a mass reduction in secondary treatment in estuarine areas simply are not well-founded.

By the same token, the amendments in the bill would exclude waivers in stressed waters even if there is no impact on the receiving waters from the less-than-secondary effluent. Such a change would seem to be unnecessary.

H.R. 3282 would also require POTW's to demonstrate that they have a pretreatment program in place which in combination with the less-than-secondary treatment systems removes the toxic compounds at the same rate that a secondary treatment system does without pretreatment. This is extremely difficult to prove for several reasons. One is that removal data for secondary plants does not exist for all pollutants in question. Second, the pollutants in question are not clear. Are they the ones scheduled for categorical pretreatment regulation or are they the all 129 priority pollutants? Third, the information that does exist for secondary treatment removal shows wide variation in removal. The proposed amendment is not necessary in light of the current regulations which have extensive toxic control and bioaccumulation sections.

Finally, I would simply note that the bill makes reference only to "interstate" estuaries. However, there are some important estuaries wholly contained on the coast of only one State, such as the San Francisco Bay, Puget Sound, and Trinity-Galveston Bay.

With respect to section 404 dredge and fill permits, in regard to this provision of H.R. 3282, we are concerned that the language is vague and places an unreasonable burden on those applying for dredge and fill discharge permits. Specifically, the measure pre-

cludes specification of a site by the Secretary unless he determines that the discharge will not have an "unacceptable adverse effect" on the aquatic environment and that there is "no practicable alternative." Mr. Chairman, we believe that it will be very difficult to properly interpret and utilize these terms. Accordingly, they are virtual invitations to litigation, which would only serve to delay implementation of this provision.

With respect to nonpoint source pollution, while H.R. 3282 does not deal directly with nonpoint source pollution, we would urge the subcommittee to explore this issue. Recent studies have pointed out that nonpoint sources are major contributors to our water pollution problems, and the Federal Government has yet to address this important aspect of water pollution in an effective manner. We will be happy to call upon our members who work close to this problem to assist the subcommittee, if you so desire.

With respect to the water quality standards issue, H.R. 3282 basically requires a nondegradation policy for the national water quality standards. While we certainly concur that permitting a lower level of water quality in any body of water should be permitted only under unusual circumstances, we feel that the provisions of H.R. 3282 are too strict. They would be especially difficult to implement in the absence of a national strategy to control nonpoint source pollution.

In particular, we would note that the existing water quality standards were developed utilizing little or no concrete data. To freeze those standards as of January 1, 1983, and thus not allow consideration of new data certainly would seem to be an unwise decision.

Furthermore, the conditions specified in H.R. 3282 under which standards could be waived are stated in very vague terms, which would be difficult to implement and would invite future litigation.

Therefore, we suggest that no legislative changes be made at this time.

In conclusion, Mr. Chairman, while we recognize the need to thoroughly review the Federal Water Pollution Control Act at this time and to make certain adjustments, we encourage the subcommittee to make as few changes as possible, and to emphasize the need for a stable program. The National Society of Professional Engineers believes that such a stability will be a crucial component of a successful ongoing national effort to maintain and improve water quality.

Mr. ROE. We thank you for your testimony.

Are there any questions? The gentleman from Arkansas?

Mr. HAMMERSCHMIDT. Thank you, Mr. Chairman.

Thank you, Mr. Prime, for your very comprehensive testimony. Mr. Prime, it seems that there is a certain tension in your testimony between maintaining program stability on the one hand, and moving program financing in the direction of increased reliance on loans and reduced reliance on grants on the other.

Do I understand your testimony to say that while you believe a mix of loan and grant funding may be best, even more important than increasing construction grant program financing is the need to allow the program to operate as it is currently structured for as long as possible?

Mr. PRIME. With respect only to the financing, if I understand your question correctly, your question relates to the financing aspects, our position is, that is one area where change is needed. We have addressed that we need changes in areas, and in other areas we would like to leave them alone.

Mr. HAMMERSCHMIDT. Let me ask that part of the question again. You believe that a mix of loan and grant funding may be best. You want to move in the direction of increased reliance on loans and reduce reliance on grants?

Mr. PRIME. Yes, sir, we recognize what I believe to be Chairman Roe's position, that there are many——

Mr. ROE. Oh, I haven't stated it yet.

Mr. PRIME. Through your questioning earlier, I am sorry. There are many communities that must receive some form of Federal assistance to meet the objectives stated in the act. The problem is we have had a decade of experience with the grants program. For the reasons I have outlined that experience has been less than optimal. We have watched projects that could have been funded in a period of 4 to 5 years stretch out to 8 or 9 as the national average. That is not the horror stories. That is the national average.

Our source of data there was EPA. That results in increases of project costs. We have watched the loan programs where the bureaucratic redtape is less and lower move in a much more expeditious way. We feel that that would be a goal that we should move toward.

Now, because we have committed to the communities, we will give you funding. Particularly those that in good faith started in, went through all the redtape, got the first year's funding on a segmented project. Achieved the proper position for funding on the State priority list, not the planning portion, but in the fundable portion. They should go ahead and proceed through the process at current funding levels, and then start into the grant, or loans program, I am sorry, and let that carry the program for the next 10 years.

Mr. HAMMERSCHMIDT. As I am hearing you, you just restated your case the way I understood it, I believe. In other words, you don't want to grant money alone. You want to go ahead with it. You want to rely more on loans and you think stability in the program is the most important thing.

Mr. PRIME. Yes, sir.

Mr. ROE. Would the gentleman yield?

Mr. HAMMERSCHMIDT. I yield to the gentleman.

Mr. ROE. I have to tell you something. Your testimony is very provocative to say the least. I don't understand what you are talking about. When we got into the point of the loan area, are you talking about loans on top of the 55 percent? Are you suggesting that?

Mr. PRIME. No, sir, that is for those projects that would not be funded——

Mr. ROE. What puzzles me is, what gives you the idea that it is going to work better if there is a loan involved? We have operated under a lot of loan programs and it hasn't done any better. That is the thing that confuses me. Are you suggesting we don't have any

grant system at all and go into a loan system, is that your ultimate goal?

Mr. PRIME. Yes, sir.

Mr. ROE. Are you suggesting that here we have a State such as mine or Arkansas and we have 500 projects pending. And they are all polluting. We are trying to get to them as quickly as possible. You think we are going to get to them faster that way.

Mr. PRIME. Yes, sir, faster and, "get more bang for your buck."

Mr. ROE. Do you think it is fair for us to say like in my State, for example, where those people on the top of the priority list, they should get the money and the others should wait? Or we should just delay those and finish the others first? Isn't that polluting, too?

Mr. PRIME. We are again saying, transition from the grant to the loan, I hope. We are not saying the loan on top of or in addition to. Go ahead and give the ones that your State agency, I am not familiar with New Jersey for certain, but it is probably the State now that is managing the priority list, not the regional office of EPA. The State has probably made commitments to certain communities to fund them.

Go ahead and fund those. Don't go back on the commitments that have been given. The ones that have not received commitments as of fiscal year 1984, tell them, we will make low interest loans available to you. It has about the same impact on the ultimate user fee. If you look at the current market rate for money, municipal financing, and compare that to the 5-percent rate, you will find those communities doing a better job of planning. Not playing the games that are played within the grants program. You will find that happening quicker. You will find, again for the reasons in our testimony, that that will generate more pollution solutions, if you will, in a shorter period of time and with the same amount of money, commitment on the Federal Government's part, within the grants program. We have watched the FmHA program work, particularly for small communities. And it seems to work quite well.

The way FmHA administers it is that if the rates fall within a certain percentage of the median income of the community, then they can support that with a little bit of grant money. But I don't think we are advocating that. You might want to consider it. Again, we feel that is a better delivery mechanism for a lot of reasons than the pure grants approach.

Mr. HAMMERSCHMIDT. Mr. Prime, I would, just to reclaim my time, Mr. Chairman, I would agree with you that the Farmers Home program does work very well, this loan and grant program. It appears to me that if we followed your suggestion, we would need to pass new legislation for a purer loan program, or we might use a provision, the loan guarantees for construction of treatment works which is section 213, which has never really been implemented.

It has never been funded and guidelines never drawn. But of course it is a guaranteed loan rather than a direct loan. Do you want to comment on that?

Mr. PRIME. First, we as a committee haven't discussed 213. I have no personal experience with it. It may be the right mecha-

nism. Again, I think we would be willing to come in and give you some help, work with your staff to see if we could flesh out a workable program within the confines of section 213 of the act as it currently exists.

Mr. HAMMERSCHMIDT. Thank you very much, Mr. Prime.

Mr. ROE. Any further questions?

The gentleman from California.

Mr. ANDERSON. Thank you, Mr. Chairman. Just a couple of clarifications.

You talk about the financing package and combination of grants and low interest loans for communities under 25,000. Why did you pick 25,000? In the areas that I am most familiar with, the ones that perhaps need the most help are the bigger ones, and not the small ones. I am not saying small ones are not needed but the ones, the big ones. Why do you just suggest aid for only the small 25,000 or less communities?

Mr. PRIME. I am looking for that.

Mr. ANDERSON. Professional engineers and private practice division conducted a national system of financing package using different combinations of grants and low interest loans for communities under 25,000 and so on.

Mr. PRIME. All right. We are not recommending that this only apply to communities below 25,000.

Mr. ANDERSON. In other words, you are talking about using it straight across the board, you are just using a study of 25,000 to back up your deal.

Mr. PRIME. That is right.

Mr. ANDERSON. So I don't have to worry about the larger communities in my area if this type of suggestion were to come in then?

Mr. PRIME. That is correct.

Mr. ANDERSON On the loan part, I personally prefer grants with a matching requirement from the local agency. I think that ties them in a little tighter and more realistic.

If you make loans, would you still require a matching basis on the local community or an outright loan so it would be a 100-percent financing from the Government?

Mr. PRIME. I would recommend a 100-percent loan.

Mr. ANDERSON. And the next thing is if they can't pay it—and I can think of many communities now that obviously could not pay it, perhaps need it most, might be able to come up with a little matching but could never pay back a 100-percent loan—what do we do? Have a bill come in 2 years later with a forgiveness program? Because I have seen that in so much loan legislation that they come in with great ideas, and they are good ideas, we give them a 100-percent loan.

Then a few years later they obviously can't pay it. Then a Congressman starts saying we will give us a forgiveness program. We forgive them for 10 years.

Then another 10 years. Pretty soon we wipe it off. Now, is that the answer? Or if they can't pay it and I know of many that can't, what do you do? Foreclose on the community?

Mr. PRIME. OK. Let me make one point and then answer the question.

The point I would like to make is that, again, based on our analysis that you referred to, the rate that would have to be charged to the citizens of that community would be very similar, very little difference between that and the rate that would be charged if the community received a grant, 55 percent or 75 percent.

Oftentimes, you will find the O&M component to be as significnt as the debt reduction. So the fiscal impact would be the same.

Let's say, as long as you are talking about the same project, if they can come up with the local share, the matching share of a grant, it will cost them about as much money as a 100-percent loan at 5-percent interest rate for 40 years.

So the fiscal impact on the community would be similar. With respect to whether waivers should be given, again, I think you should consider a similar process to what we have now which is where the community has to show that they have or will adopt ordinances and rates appropriate to repay the debt.

This is common practice in municipal financing through conventional techniques if they have to bond the local share. I would say by far the large majority of them just do that.

They are not funding the local share from cash on hand.

Mr. ROE. Will the gentleman yield?

Mr. ANDERSON. Just one last thing. I am a little bit worried about how you collect that money. Again, when I first thought you were talking about smaller communities, I did visualize smaller communities maybe being able to have a $53 per household tax on each one added.

But then I got to thinking about New York where they are having a tough enough time just to be able to maybe get food on the table. I wonder how the mayor of New York would like to have to tack a $55 tax on every household in New York to finance this thing.

I think they would not do it this way. They would have to go someplace else to get this financing.

Mr. PRIME. You would control that. Let's talk about the existing scenario. You are giving out 55 percent. They have to come up with the other 45 percent.

Depending on the market conditions for money at the point they go to the bond market, this $55 difference could evaporate. This analysis was done assuming 10 percent cost of money for the local share.

If that cost of money goes back to 15 percent, which it has been there, I would say to you that the 55-percent grant will cost the resident more than 100 percent loan at 5 percent.

Mr. ANDERSON. Now, you are aware that some States, California where I am from is one, has passed a proposition where local governments cannot put a new tax on. They are prohibited by laws voted in by the people.

There is no way they could put an additional $55 per household tax without changing the laws of the State.

Mr. PRIME. Yes. I would strongly recommend—again, this is a personal recommendation, not a statement of policy, but based on my experience with municipal government—strongly recommend that you not think in terms of taxes for the local share.

Let that be a function of user——

Mr. ANDERSON. I just saw your $53 per year, per household that you have to raise somewhere.

Mr. PRIME. Through user fees or impact fees. Again, that $53 is only valid if your cost of money is 10 percent versus 5 percent subsidized loan. If the actual market conditions change to 15 percent, which I don't want to crystal ball the cost of money, but it is a realistic figure, then that $50 will go away.

Mr. ANDERSON. I am going to have you come out to my district and answer some of my constituents. You can answer this a lot easier than I can.

I am trying to answer now why they have to pay more for their telephone per month. If you are going to add 53 bucks per household, it is going to be very difficult unless you find some other way. A new user tax where they don't know they are paying it, I don't know how you are going to do it.

Mr. MOODY. Will the gentleman yield?

Mr. ANDERSON. Fine.

Mr. MOODY. You suggest we switch to user fees rather than taxes. One of the big advantages of not doing that is that property taxes are federally tax deductible and user fees aren't.

The appropriate tax enables you to export the burden of the communities back to, in fact, a substantial degree. So what you make in one statement has a tremendous fiscal negative impact.

Mr. PRIME. I understand your point. Let me first say existing EPA rules will not allow for taxes to be used to pay the local share of construction grants projects. Under today's rules you are not allowed to use property taxes.

There is one exception, and it does not apply in Florida so I don't have personal experience.

Mr. ROE. Will the gentleman yield?

You are not clear. Are you talking about 100 percent loan money?

You are talking about a function of time and space. I agree with you.

I think you have made a good point. We have adopted that process, or at least that theory in our $800 million loan for water rehabilitation program in the water resources development bill so we have taken that step.

But I think what you have to clarify, which is very important in my judgment, is are you talking about 100 percent low interest loan money?

Mr. PRIME. Yes.

Mr. ROE. That is a very, very different point in my judgment than your testimony came out. I think it is very important to say a project is x number of dollars, and we are talking about 100 percent loan money at, let's say, a pegged interest rate, a low interest rate over a longer period of time.

Mr. PRIME. Right.

Mr. ROE. In other words, in the water resources development bill, what we are saying is that time is a function to that issue. We have already run the curves on that as far as costs are concerned and user fees.

We have said if it is going to be 100 percent loan money, 5 percent, whatever the case may be, a stabilized rate, that is a whole switch in the whole program.

Mr. PRIME. Yes.

Mr. ROE. I am not suggesting you are wrong. I think there is some merit to what you say. You know it is awfully difficult to digest the point of view that we are going to cut out a 50-percent grant on the table and come back and give you a 40-year 5-percent interest loan figuring they are going out on the bond market for 12 or 13 percent now.

Mr. PRIME. Yes. I am sorry I didn't make that point earlier.

Mr. HAMMERSCHMIDT. Will the gentleman yield?

Mr. ANDERSON. Go ahead.

Mr. HAMMERSCHMIDT. I just want to follow up on the chairman's question.

You are suggesting the lowest household rate would be the combination of a grant and loan. That is usually what occurs under Farmer's Home. That is the ideal situation, isn't it, where you get up to a certain level of charge to a household?

Mr. PRIME. Yes. FMHA will provide for a combination loan and grant if the resultant impact is above a certain percentage of the median income of the community. That is a workable system.

Mr. HAMMERSCHMIDT. I think it is, too.

Mr. ROE. The gentleman from California.

Mr. ANDERSON. Yes, I was just kind of wondering. You are giving me a little different concept of a user fee, then. I think my feeling of what a user fee was, you had a choice.

If you wanted to buy a boat, you had to pay a user fee. If you wanted to have something else, you pay a user fee.

In water, it is a different thing. Everybody needs so much water. So you are talking about a user fee on everybody to at least a minimum amount that each of us use and consume personally today.

I realize some of us use more than others in irrigating and stuff like that, but what you are talking about is a new concept for the words "user fee." User fee is normally for something you have a choice not to do. It is not something every person has to do.

We have to use our water every day, everyone of us here.

Mr. PRIME. Well, it is not a new concept. It may be in your area of the country. Most municipal financing which is done through revenue bonds as opposed to general obligation bonds is repaid through user fees.

In fact, there are bond covenants that relate to how those fees would be set. Furthermore, EPA requires through the existing regulations that the community demonstrate that they can satisfy their operation, replacement and maintenance requirements through user fees specifically.

Furthermore, that those user fees be set equitable between user classes. So that has been in the regulations, I know, for the last 5 or 6 years.

Mr. ANDERSON. If they can't pay, then what? We are going to go to the user. I am thinking now again about the metropolitan areas. I mentioned New York awhile ago. People today who are getting welfare just to live.

This user fee that they wouldn't be able to pay, what do we do with that?

Mr. PRIME. That is addressed differently in different communities. The point is that it is a fee for having a commodity provided. You can effect the user fee or cost to the household by moving the rate at which you consume, if you will, one of this Nation's greatest resources, and that is water.

That encourages water conservation. There is a school of thought that that is not a bad idea. If you don't tie it to a consumption basis, it has been shown that some people abuse the privilege and squaunder the resource.

So there is more than one way to view that issue. But it is not a new concept. The concept has been around for quite some time.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman.

Mr. Prime, I am particularly interested in your ocean dumping discharge waiver provisions. The present system has created some problems in some areas. The San Diego Bay area, for example, has tried to receive waivers of the existing provisions, and to compete with areas like New York Harbor, and so forth, where there is an entirely different scenario than in the San Diego area because of nonpoint pollution. Just the size of the problem is different.

They have not been able to receive waivers. Under the provisions of the proposed legislation, I think it will tighten up those restrictions. You have addressed that.

What provisions would you recommend be made in the proposed legislation that would allow a variation of circumstances to play a part in the decisionmaking process of waivers?

Mr. PRIME. Mr. Congressman, I have no direct experience with ocean discharge. This is the one thing that I am personally weak on. I understand the other issue better.

I think it may be appropriate for us to get back with the committee on that. I was under the impression that under current statutes, if the administrator was faced with unique situations, they had the authority to grant exceptions, and particularly with respect to the relaxation of the secondary treatment standards, and that this was to affect the discharge into estuaries and so forth.

I, however, am uncomfortable with that answer and prefer we get back to you on that.

Mr. PACKARD. I think you recognize under current legislation that very few waivers are granted.

Mr. PRIME. Yes.

Mr. PACKARD. Over the last 6, 7 years that the law has been in existence, there have been very few, nationally, waivers granted. Perhaps under the proposed legislation, there would be even less, whereby several areas are seeking relaxed regulations that would permit waivers to be granted on the basis of meeting water quality, rather than on specific, almost impossible, standards to meet.

My own area is a case in point. They are willing to meet the water quality standards and would hope to be able to get waivers on that basis, but have not been able to do so.

I thought maybe you would have some specifics in terms of how to address the new legislation that would permit that flexibility.

Mr. PRIME. I apologize. It is my personal shortcoming not being an expert in that area.

Should we follow up to the committee?

Mr. PACKARD. I would say probably to the committee.

[Additional testimony of Mr. Prime, National Society of Professional Engineers, appears on page 3383.]

Mr. ROE. If the gentleman would yield, I happen to think that your testimony is extraordinarily important simply because of the organization you represent.

I think it would be enormously helpful to the committee in two directions. One, the ocean dumping which is a major concern of ours. The second point I would like you to amplify further, is the combination loan and grant program.

We know that that is implemented in part under Farmer's Home which has worked really quite satisfactorily. I don't know whether I agree with all the points you have made.

You have to give us more on it. You have glossed over it. I think what we ought to do is ask you to come back again in depth on the ocean dumping issue and in depth on your proposal of financing with some particular examples, so that we can digest that.

That would be helpful to us. We would like to have you come back again.

Mr. PACKARD. What would help me is precisely what the chairman is asking for, recognizing that there is a serious problem in the New Jersey/New York area. But the water pollution problems there are significantly different than they are in San Diego Harbor.

To require San Diego Harbor to meet the same conditions that New York and New Jersey area is being required to meet may present an impossible situation for San Diego.

Mr. PRIME. Yes.

Mr. PACKARD. I am looking for a way to meet the needs of cleaning up the water in the New York Harbor and off the shores of New Jersey. But at the same time, allowing some flexibility so that those areas that do not have the same kind of problems are not required to live by the same kinds of standards, and therefore making it impossible for them to even consider a waiver, which is very expensive for them to continue the way they have been going.

Mr. PRIME. We will address the issue. Mr. Chairman, so I can understand, are you saying that you would like for us to come back to give more oral and written testimony?

Mr. ROE. Yes; we will invite you to testify again.

Mr. PRIME. All right, sir.

Mr. ROE. I would also like you to get into another issue from a purely engineering point of view. We have been trying to get across for the last 15 years one element that has to do with elimination of combined sewers.

Frankly, we have not been successful because the people just don't understand the issue. That goes to the point of pretreatment. Query: what do we do? Do we strengthen the pretreatment aspect of it, then come back and say, well, the ultimate sludge we receive from the receiving, whatever, sewage, regional plant is not contaminated with heavy metals and so forth?

Or do we look at the ocean dumping aspect of it. If we don't have pretreatment, it gets to the sludge. Do we dump it in the water, on the land? What do we do?

I think you folks are in a particularly unique situation to talk to us in a purely technical engineering point of view. We can write all the laws in the world and that isn't going to change anything in my humble judgment, if you will pardon me. I don't mean that unkindly.

We are looking for what is a solution to the problem. Do you understand what I am trying to get at?

Mr. PRIME. I fully appreciate it.

Mr. ROE. Therefore, I think the gentleman from California has made it very clear. We would like some more indepth—we are not looking for philosophy. I don't mean that unkindly. We are looking for what do we do.

So we need some more technical response from you.

Mr. PRIME. It may be appropriate, if the chairman desires, for us to get into the breadth of issues you are addressing——

Mr. ROE. Yes.

Mr. PRIME. We would need to provide for you more than one expert, if you will.

Mr. ROE. Yes.

Mr. PRIME. There is probably a different person——

Mr. ROE. Bring that panel. We want to hear from the engineering society. I think you have done marvelous in your initial testimony here. You have made us think.

We want to hear from you the key issues we are dealing with. I know that if we don't solve that combined sewer problem we are fooling the people.

You know it as well as I do. So we have got to deal with that. Now, how do we convince the authorities that be, the administration or any administration, and everybody else, that this is something we have got to do, otherwise we are not going to solve the problem?

Is that a reasonable point?

Mr. PRIME. Absolutely. Our staff will be in touch with your staff to set a time. And the characteristics, if you will communicate to your staff a list of things that you would like for us to address. I have heard you say the ocean outfall, financing, pretreatment and combined sewer overflow issue.

If there are others, we will then assemble a group of people that we think can speak to those issues and offer you a panel.

Mr. ROE. We will set an agenda and get back to you. The gentleman from Wisconsin.

Mr. MOODY. Before I ask my main question on that point, I want to follow up with the chairman's comments. If you deal with plants with overflow, I think there may be trouble for you to reconcile that with your statement of stable funding, since this is an expensive ticket.

Mr. PRIME. I understand.

Mr. MOODY. I would like you to elaborate more on your section of the testimony which, by the way, I think is excellent about nonpoint source pollution. You give a very short paragraph to that.

As someone new to this area, to some extent I have followed it locally, but, in my community, but we have a tremendous nonpoint source pollution problem. And the city of Milwaukee that I represent is under a tremendous financial burden to meet standards that have been set down in court stipulation to water quality.

At least half, if not more, of our problem is nonpoint pollution, which we can't do anything about given the environment we are living in. So we are pressing harder and harder on the urban taxpayer to handle the point source pollution problem, but this runoff from both rural and shipping center stuff that is coming in, we are just ignoring that.

How realistic is it to work harder and harder on one-half of the problem and let the other half be exempt?

Mr. PRIME. Our position is that the Federal Government has not spent enough time and energy on the water quality problem, too much on the—you can see an outfall from a waste waterplant and regulate it easier than you can the diverse nonpoint.

So we understand maybe the reasons, and I will talk personally now, not as a society, because we have an official position on this, my personal feeling is that we are spending too much money in waste water treatment plants to solve a problem we can't solve through waste waterplants.

In Florida where I have personal experience, it is clearly shown that in some areas as much as 80-plus percent of the pollutant loading to our lakes—and we have a temendous number of lakes—is from nonpoint sources.

Yet in one community that is probably one of the fastest growing communities in the Nation, they have been faced with a no discharge at all to surface waters. Just no pollutants. Zero. Is that fair? Should it have been that way? Or could we not have spent the same number of dollars to deal with pollutants coming from nonpoint sources, and had a larger effect on the actual quality of water in the surface—surface waters.

Mr. MOODY. In other words, there is both an efficiency question, bang for the buck.

Mr. PRIME. That is right.

Mr. MOODY. And also an equity question, isn't there?

Mr. PRIME. That is correct.

Mr. MOODY. We let one group of polluters off scott free.

Mr. PRIME. The Clean Water Act addresses it through section 208. Lord knows, every council in the country went around trying to talk about 208.

But as a society, we did not feel it got quite far enough. It said here are some BMP's, and here are some model ordinances that you may or may not adopt. But there was nothing that said you had to adopt them.

Again, that may be the bigger problem as far as the Nation's waters are concerned.

Mr. MOODY. Have you had a chance to look at the Oberstar bill?

Mr. PRIME. No, sir. I haven't.

Mr. MOODY. Maybe when you come back you would have had a chance to look at that.

Mr. PRIME. Yes.

Mr. ROE. I think the gentleman is making an extraordinary contribution this morning. In my judgment, speaking as one member of this committee, I totally subscribe to what the gentleman is saying from Wisconsin, that we have not given the attention to that issue.

I put that in the same category like a broken record with that combined sewer situation because I know exactly what is happening, particularly in the urban areas of America, the old urban areas.

So it would be very helpful to us that as we put together your agenda, we would like you to direct your technical attention, to give us an overview what you see in that particular nonpoint. I think that is the wave of the future as far as this legislation is concerned.

Any further questions of the gentleman.

If not, we want to thank you very much and will call you back. Our staff will be in touch with you to proceed from there.

Thank you very much for your excellent testimony.

[The following was received for the record from Mr. Prime:]

February 2, 1983

Draft Report of the Committee on
Construction Grants and Loans - NSPE/PEPP
"COST OF CLEAN WATER - IMPACT ON SMALL COMMUNITIES"

A substantial backlog of necessary water pollution control projects in small communities and scheduled reductions in the Construction Grants program make it likely that many small communities will have to construct their improvements with reduced or no grant support. This may place the cost of wastewater treatment outside the reach of many small communities.

The use of less costly methods of wastewater treatment such as lagoons or trickling filters, which may be permitted where they do not cause water quality degradation, does reduce user costs. This substitution, however, will not offset reductions or the elimination of grant support. Low interest loans, such as the 5%, 40 year loan available through the Farmers Home Administration, in combination with a 55% grant, can yield user charges comparable to those under the current 75% grant program. However, we view the recent reductions in federal aid as a trend toward zero grant support. This paper evaluates the impact of that trend on small communities of 25,000 or less.

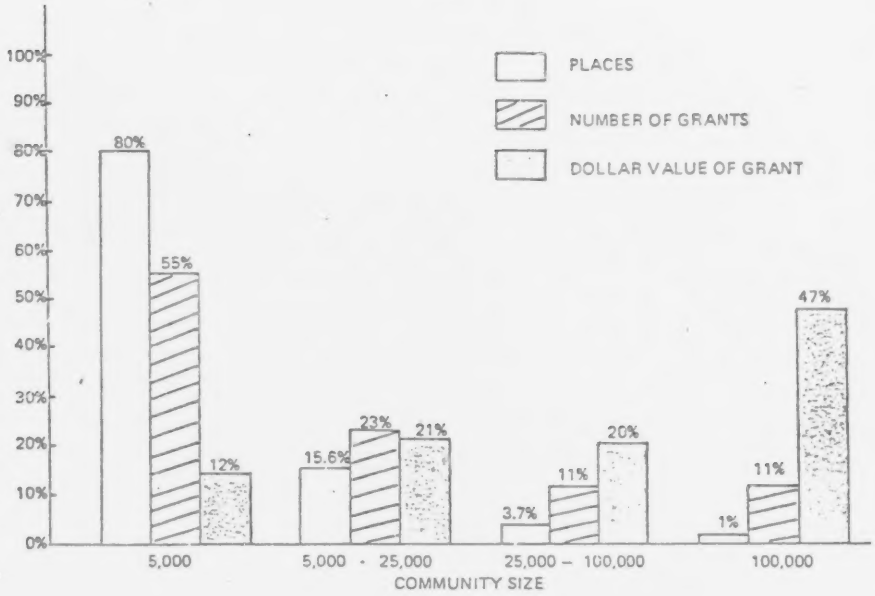
Background

From 1972 to 1980, the heyday of the construction grants program, the federal government obligated over $29 billion for the construction of water pollution control facilities. Wastewater treatment plants of less than 1.05 mgd constitute 79% of the number of treatment plants in the U.S. but account for only 8.4% of the total treatment capacity. Treatment plants over 50 mgd comprise only 0.6% of the number of treatment facilities while accounting for 38.8% of the total U.S. wastewater treatment capacity (Feliciano, 1982). In order to achieve the maximum benefit for pollution control dollars spent, grant monies were intentionally directed by Congress and EPA toward the larger dischargers. As shown in Figure 1, only 31% of the grant money went to communities with populations under 25,000 and only 12% went to communities of under 5,000, despite the fact that such communities represent 95.6% and 80% respectively of the total number of communities, and contain half of the country's population.

Many factors have contributed to the substantial backlog of wastewater treatment facility needs in small communities. Grants were awarded based on state

FIGURE 1

DISTRIBUTION OF PLACES, NUMBER OF GRANTS AND GRANT DOLLARS BY COMMUNITY SIZE



Source: EPA 1990 Preliminary Draft Strategy for Municipal Wastewater Treatment January 1981

priority lists which tend to favor larger communities due to population points, volume of discharge and other factors. In addition, the EPA regulations in effect during the 1970's tended to favor regional treatment plants as opposed to smaller local treatment facilities. EPA required extensive documentation to justify the need for sewers in order to obtain grant support, and otherwise made facilities planning in small commmunities difficult. In many cases, small communities could easily obtain a Step I grant for preparing a planning report only to be too low on the priority list to implement the plan. The very existence of the grant program tended to discourage and delay the construction of wastewater treatment facilties in many small communities since it is difficult to justify the expenditure of 100% local funds when the possibility exists for receiving a 75% grant. In addition, many small communities had existing facilities, such as trickling filters, which could not consistently meet the treatment levels required by PL 92-500. In some cases those facilities were anticipated to be abanooned and therefore not maintained as well as they would have been otherwise.

The Municipal Wastewater Treatment Grant Amendments of 1981 authorized $2.4 billion for construction grants in fiscal 1982 and the same amount for each year after until 1985. Grants awarded prior to October 1, 1984 will qualify for a federal grant of 75% of the eligible costs while new projects after October 1, 1984 will only receive a 55% grant. In addition, the categories of eligible projects will be reduced after October 1, 1984 and new sewer construction will be ineligible. Thus, it appears that the Construction Grants Program is going to be phased out, placing the burden of providing wastewater treatment back on the local community and, ultimately, the individual users.

The costs of providing wastewater service have increased substantially over the years as higher levels of treatment have been required. Smaller communities are particularly subject to high treatment costs for a number of reasons. Frequently located on smaller streams which are classified by states for higher water quality levels, they may be required to construct more expensive advanced treatment systems. In addition, small communities generally have lower per capita revenues, lower bond ratings and are required to pay higher bond interest. Many small communities lack centralized sewer systems entirely and thus are faced with the added cost of building sewers.

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In addition to reducing the federal share of grants, the Municipal Wastewater Treatment Grant Amendments of 1981 revised the definition of "Secondary Treatment" to include oxidation ponds, lagoons and trickling filters when water quality will not be adversely affected. These processes which do not consistently provide the same level of pollutant removal as the PL 92-500 definition of secondary treatment facilities are less costly to construct and operate.

Method

The impact of the reduction and elimination of the grant program on costs per household in small communities is evaluated for communities with treatment plant design flows of .01 mgd to 4 mgd, utilizing conventional secondary processes, trickling filters or waste stabilization ponds. The cost of sewer construction is not included in this evaluation. It is also assumed that existing wastewater treatment facilities cannot be utilized and that a new treatment facility must be built.

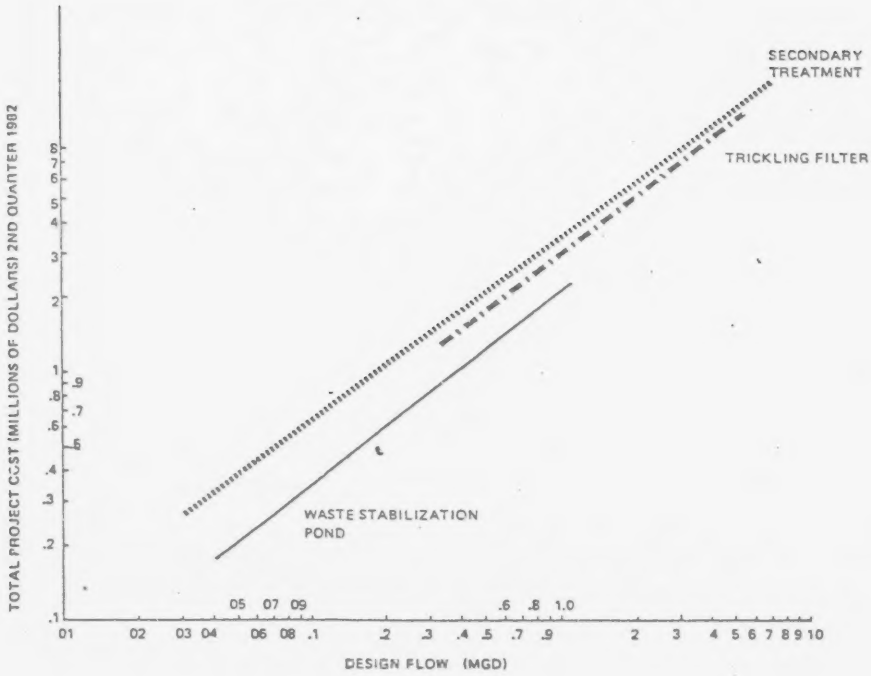
Total project cost curves for constructing wastewater treatment plants with design flows ranging from .05 mgd to 4 mgd are estimated for treatment plants providing secondary treatment, plants utilizing trickling filters, and waste stabilization ponds (Figure 2). Building costs are based on the EPA manual "RFD-22 Construction Costs for Municipal Wastewater Treatment Plants: 1973-1978" and include 27.9% for planning, engineering and contingencies. The costs are updated to the second quarter of 1982 based on the EPA Small City Conventional Treatment (SCCT) index. The waste stabilization pond cost includes a nominal land cost.

The range of design flows for trickling filters and waste stabilization ponds were limited by the availability of construction cost data as well as practical considerations. As shown in Figure 2, the cost for constructing a waste stabilization pond or trickling filter is less than that for contructing a secondary treatment facility. Since the secondary treatment curves were developed by EPA using construction costs for existing secondary plants, including some trickling filter facilities, the secondary treatment curve is probably lower than it would be if trickling filters had been excluded.

Local costs for debt retirement for each type of treatment facility are calculated three ways: no federal grant assistance, a 55% federal grant and a

FIGURE 2

TOTAL PROJECT COST VS. DESIGN FLOW



75% federal grant. The annual cost for debt retirement of the local share is based on municipal bond sales of 25 years at 10%.

User cost for debt retirement in each case is then calculated assuming that the treatment plant is being operated at 75% capacity with average household flow based on 3 persons per household and 120 gallons per capita. Table 1 indicates the service population and number of households corresponding to selected design flows.

TABLE 1
Population and Households
Served at 75% Design Capacity

Design Flow (mgd)	Population at 75% Capacity	Number Households
0.05	313	104
0.1	625	208
0.5	3125	1042
1.0	6250	2083
2.5	15625	5208
4	25000	8333

Operation and maintenance (O&M) costs, including administration costs, are estimated for secondary treatment and trickling filter plants with design flows of 0.05 mgd to 4 mgd based on the EPA Manual "RFD-22 Operation and Maintenance Costs for Municipal Wastewater Facilities". The costs are updated to the second quarter of 1982 based on the EPA OMR (Operation, Maintenance and Repair) index. An operation and maintenance cost curve for waste stabilization ponds was estimated based upon existing facilities in Michigan since comparable information was not contained in the EPA report. Table 2 contains the estimated annual operation and maintenance cost for selected design flows for each facility. As would be expected, trickling filters and waste stabilization ponds generally have lower O&M costs than secondary treatment facilities. The O&M for a 1 mgd waste stabilization pond, however, is estimated to be higher than that for the comparable secondary or trickling filter facility. This may be due to the limited amount of data used to develop the curve.

Table 2
Estimated Annual Operation and Maintenance Cost for
Secondary, Trickling Filter and Waste
Stabilization Pond Facilities

Design Flow (mgd)	Secondary[1]	Trickling Filter[2]	Waste Stabilization Pond[3]
0.5	$ 11,900	—	$ 7,000
0.1	21,582	—	13,800
0.5	71,940	$ 65,945	64,000
1.0	119,900	101,915	125,000
2.5	238,700	214,830	—
4.0	327,305	297,550	—

1. FRD-22
2. FRD-22
3. Actual facilities in Michigan

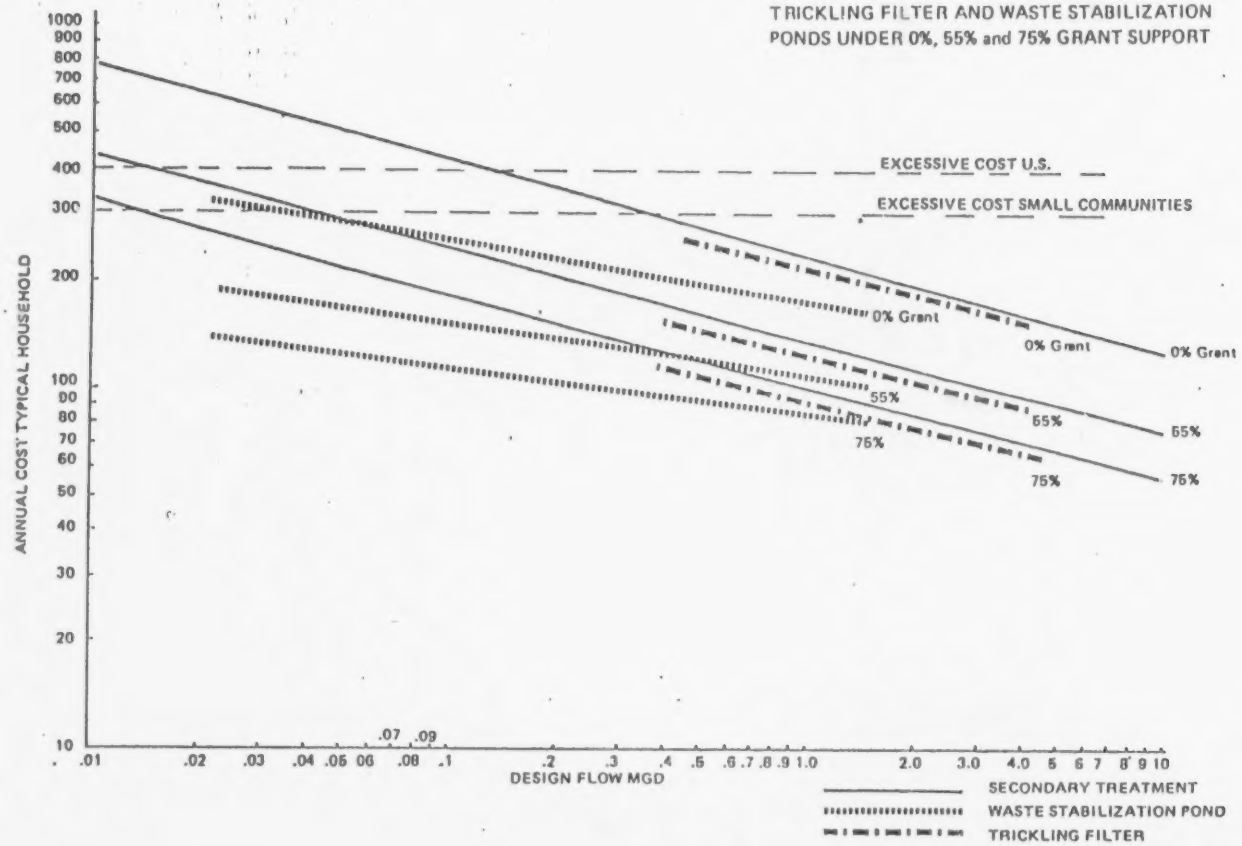
User costs for operation and maintenance for each case are then calculated based upon the same assumptions stated previously.

The total estimated annual cost for a typical residential customer, three person household, is derived by combining the user cost for debt retirement and the user cost for operation and maintenance. Figure 3 illustrates the estimated annual cost for a typical residential customer for secondary treatment, trickling filter and waste stabilization ponds for each of the three grant scenarios.

According to the 1980 Census, the median family income in the United States was $19,908 in 1979. According to the EPA Criteria (CG-82), annual user charges should not exceed 1.75% of the median household income when the median income exceeds $17,000, 1.5% when the median income is between $10,000 and $17,000 and 1% when the median income is under $10,000. Adjusting the 1979 U.S. median family income to household income, applying the appropriate percentage (1.75) and updating costs to 1982 via the consumers price index (CPI) yields an excessive user cost limit of $400. Any user cost having annual user charges exceeding $400 is considered to place an excessive financial burden on users of the system.

FIGURE 3

HOUSEHOLD COSTS AS A FUNCTION OF DESIGN FLOW FOR SECONDARY WASTEWATER TREATMENT, TRICKLING FILTER AND WASTE STABILIZATION PONDS UNDER 0%, 55% and 75% GRANT SUPPORT



In most small communities, the median family income is substantially lower than that found in larger metropolitan areas. A study performed by the U.S. Bureau of Census indicates that the median family income for an outmetropolitan nonfarm family of four was $17,646 compared to $20,502 for the total United States (U.S. Bureau of Census). Based upon the EPA criteria, any annual user cost in such areas exceeding $304 is considered to be excessive.

The excessive user cost limits for both the U.S. as a whole and the outmetropolitan nonfarm family of four are overlaid with the annual household cost curves developed under the three grant cases. Without grant support, the cost for secondary wastewater treatment would be excessive in small communities with a design flow of 0.35 mgd, population 2188. With a 55% grant, the size of the community that would experience the cost as being excessive would be reduced to .04 mgd or 250 persons, and with a 75% grant, essentially all communities required to construct and operate treatment plants would be able to do so without experiencing excessive costs.

The household cost curves shown in Figure 3 are based on the following assumptions: 1) The community is currently sewered and the sewers do not require rehabilitation, 2) The project involved complete replacement of any existing treatment facility and, 3) The entire project is grant eligible. The cost of new sewer construction, much of which is ineligible, would raise the curves, while the cost savings from being able to utilize existing treatment facilities would lower the curves. Ineligible project costs would raise the 75% and 55% grant curves and bring them closer to the no grant curve. Smaller communities, under 1,500, approximately 0.25 mgd, in many cases lack sewers and treatment facilities entirely, while communities larger than 1500 generally are sewered and may have existing facilities which could be reused. Therefore, the right side of the curves may be higher than would be expected for typical communities of that size while the left side may be low.

The impact of grant reductions on the annual household cost in a community with a population of 6250 is shown in Table 3. The cost savings resulting from the use of trickling filters or stabilization ponds in lieu of secondary treatment does not offset the impact of grant reduction on annual household costs in small communities.

Table 3
Impact of Grant Reduction on
Annual Household Cost in Small Community
Design Flow 1 mgd (Population 6250)

	Secondary	Trickling Filter	Waste Stabilization Pond
0% Grant	$247.04	$227.32	$173.00
55% Grant	143.23	128.77	111.25
75% Grant	105.12	93.30	88.91
55% Grant + FmHA Loan*	103.00	91.13	87.05
100% FmHA Loan*	158.22	143.09	120.10

* 5% FmHA Loan over 40 years.

The U.S. Department of Agriculture, Farmer's Home Administration, (FmHA) provides grant and loans to communities of 10,000 or less for the construction of wastewater treatment facilities. In order to qualify, the community must be unable to finance the project from its own resources or through commercial credit at reasonable rates. Communities with a median family income of less than $9,300, the poverty line, may qualify for a 5% loan amortized over 40 years. If the median family income is over $14,450, FmHA offers a 40-year loan based on a fixed interest rate (market rate) that is determined by the average bond buyer's index at the time the loan is made, currently 10.625%. If the median income falls between $9,300 and $14,450, the interest rate would be 5% plus half of the difference between 5% and the current market rate, currently about 7.8%. Grants are made only when necessary to reduce the average annual benefited user charges to a reasonable level. Competition for FmHA grants and loans is very heavy since the amount of funds is limited and FmHA qualifying projects also include rural water supply facilities. FmHA budgets average only about 17% of the EPA grants budget,

As shown in Table 3, the annual household costs for projects receiving a 55% grant and a low interest rate FmHA Loan, 5% over 40 years, are approximately the same as a 75% grant. For projects with substantial ineligible costs, the 55% grant plus loan combination would be even more favorable. With 100% FmHA

funding at 5% for 40 years, the user charges would be higher than for the 75% or 55% grant cases. However, the use of trickling filters or waste stabilization ponds in combination with the low interest rate loan would approximate a 55% grant situation with conventional secondary treatment. Again, for projects with substantial costs ineligible for grants, such as sewers after October 1 1984, the low interest rate loan could result in user costs more comparable to or lower than the project would have required if it had received a 75% grant.

Conclusions

The impact of grant reductions and changes in the classification of eligible project costs resulting from the Municipal Wastewater Treatment Grant Amendments of 1981 will significantly affect small communities. Due to the state priority systems and other factors, small communities have received a disproportionately small snare of EPA grants in terms of numbers and dollars. There is a substantial backlog of needed projects in small communities which will now have to be funded with reduced or no grant support. Since annual household costs for wastewater treatment in smaller communities are higher than in larger ones, and the median household income is generally smaller, the percentage of families that would be burdened by excessive costs of wastewater treatment would be larger. This paper has evaluated the impact of grant reductions on small communities with existing wastewater collection systems. The impact on communities without existing infrastructure would be much more severe.

The use of waste stabilization ponds, trickling filters or other lower cost treatment facilities will reduce household costs and should be pursued if the community is located in an area where water quality would not be adversely affected. However, many smaller communities are located on water quality limited streams and will therefore be unable to take advantage of these treatment processes. In any case, the use of lower cost treatment does not offset reduced grant support.

Low interest rate loans, such as those available from the Farmer's Home Administration, will help offset the reduction in grant support and the elimination of eligible project categories facing small communities. However, that program has very limited funds and is therefore very selective. Many small communities with needed projects and high user costs are unable to take

advantage of the Farmer's Home Administration program because their median family incomes are too high. Consideration should be given to making a low interest loan program available to smaller communities on a wider scale to help them deal with their water pollution problems. This program could be patterned after the Farmer's Home Loan program but should shift emphasis from family income to the cost for user service and water quality need. However, such a loan program would probably not have sufficient funds to address the tremendous backlog of small community needs.

Some of the states may be able to provide grants, loans or other programs to help local communities finance the cost of clean water. However, we suspect that the majority of the states are suffering budget contraints themselves. Financial consultants and others are investigating such innovative financing alternatives as state banks or selling equity shares in the treatment plant, and these should all be explored.

There is no easy answer to the question of how to finance the backlog of wastewater treatment improvements in small communities. Perhaps the solution must be different for each community. Small communities with existing public utilities should take actions now to finance the operation of their wastewater treatment facilities on a self-sustaining basis rather than anticipate a federal program bailout. User charge systems and rate structures should provide sufficient revenue for operation, maintenance, replacement and capital improvements.

References:

1. EPA 1990 Preliminary Draft Strategy for Municipal Wastewater Treatment January 1981.

2. FRD-11 Construction Costs for Municipal Wastewater Treatment Plants: 1973-1978.

3. FRD-22 Operation and Maintenance Costs for Municipal Wastewater Facilities.

4. CG82 Construction Grants 1982 July, 1982.

5. U.S. Bureau of Census, Population Report Consumer Income Series P-60 No. 129 "Money Income of Families and Persons in the United States 1979".

6. Feliciano, D.V., "Fact Sheet for Wastewater Treatment" Journal WPCF, Volume 54, Number 10, October 1982, p. 1346-1348.

Mr. ROE. Our next group is the New Jersey Clean Water Campaign Panel. We have with us a very fine group of representatives of the great State of New Jersey, so if you all come forward, we would appreciate it, and go into your testimony.

I will now defer to the distinguished chairman of our committee who would like to offer his formal welcome to the representatives from New Jersey.

The CHAIRMAN. Thank you very much, Mr. Chairman.

I wish to thank you and the members of the subcommittee for these hearings that you are holding on this vital matter. Although these next witnesses are a very active group representing thousands of people in the State of New Jersey, I am sure that their story will find its parallel around the Nation.

We have listed Ms. Vivian Li, Chair of the New Jersey Chapter of the Sierra Club; Mr. Ray Bogan of the United Boatmen's Association.

Mr. Bogan and his family have been in the sport fishing business on the Jersey shore for—I was going to say years. I may as well say generations now.

I have been here awhile working with a few Bogan brothers for so many years. Now, all of a sudden I am meeting now a son.

Mr. ROE. If the chairman would yield. You are getting a little more grey hair. I wanted to tell you about that.

The CHAIRMAN. But I have got quite a bit of it, Mr. Roe.

Also, Ms. Ella Filippone from the Passaic River Coalition, a very important part of the State represented by the chairman of our subcommittee. Ms. Jane Nogaki, Coalition Against Toxics. Certainly a big, big problem, a frightening problem, but one that must not be ignored. It must be faced.

The sooner we face it and the stronger we face it, the better off we will be. I would just like to point out in this area of clean water, our State of New Jersey is an industrial State.

Most people know the State just from riding up and down the New Jersey Turnpike and see all the industrial development. Many of them do not know of other parts of the State, such as the beautiful New Jersey shore area.

In New Jersey, the resort industry is the second largest industry in the State, second only to pharmaceuticals, amounting to many billions of dollars each year. When we talk about the need for clean water, we are not talking about it just because it would be something nice to have and because we owe it to future generations to clean up the water. There is a certain vital economic situation involving billions of dollars involved in that seashore, whether it be for the people who come down for swimming, or for vacations, for fishing, for sport, which is a very, very big item, or for commercial.

It is a very big item. Being near the large metropolitan area of New York and its environs, very often in the past years we have thought, the big cities need special treatment. Being such a crowded State without a lot of places to dump things or store them on land, the ocean seemed to be a very available place for it.

It has gotten to the point where this seashore area, so important to the us, just can't take it any more. That is why I am glad we have been able to work together on the outlined legislation which is in a bill I and certain others have introduced. I am very, very

happy that this subcommittee is doing something historic in being prepared as we are to be writing the best clean water bill in the history of this or any other nation.

This group has been organized from many facets of the communities throughout the State of New Jersey, a State of over 7 million people. I believe they have some petitions with many, many thousands of signatures in support of the effort that we are making here in this subcommittee.

We so very often work in some sort of vacuum, Mr. Chairman. When we work on important legislation, a few special interest people such as business or environmentalists know what we are doing but the broad base of the American citizenry really does not know that we are doing much of anything.

They may hear about a bill when it comes up. But I can assure you, thanks to your leadership in this area, Mr. Chairman, I would say that the broad spectrum of the general population of the State of New Jersey is very familiar with this legislation and these hearings that are going on. I am very, very proud that we have in the State the people who have given the time and the effort to contact so many thousands of people to alert them to the fact that they can take part, as they are doing here, in a democratic function in public. We are now able to hear from the people from one of the more important States in the union, the State of New Jersey.

I am very, very happy to welcome them here and I want to thank you, Mr. Chairman, and the members, for inviting them here because I believe that their testimony is not only extremely important and on track, but it also represents, I am sure, millions of people's desires and wishes and needs throughout the country.

Thank you very much, Mr. Chairman. Welcome to all of you. Thank you for your past work, your present work, and the work we are going to be asking you to do in the future.

Thank you. Thank you, Mr. Chairman.

Mr. ROE. Thanks so very much, Mr. Chairman.

I think that is an excellent graphic illustration of what is happening in our State. So why don't we go with our testimony. We will first hear from Ms. Vivian Li.

The full test of your prepared statements will appear in the record at this point.

[Statements referred to follow:]

TESTIMONY OF VIVIEN LI, CHAIRPERSON, NEW JERSEY SIERRA CLUB, REGARDING THE WATER QUALITY RENEWAL ACT OF 1983 BEFORE THE HOUSE WATER RESOURCES SUBCOMMITTEE, OCTOBER 19, 1983

Item: More then 150 acres of prime wetlands in the Hackensack Meadowlands will be replaced by massive development under a permit issued by the Army Corps of Engineers earlier this year.

Item: Wetlands in Absecon Inlet were proposed for destruction as part of a casino development project in Atlantic City approved by the Army Corps.

Both these projects occurred in the State of New Jersey. Both and been approved by the U.S. Army Corps of Engineers as consistent with Section 404 of the Clean Water Pollution Control Act amendments. And in both these instances, other federal agencies had strongly recommended against approval.

These instances are not isolated nor are they confined to just one state. It is estimated that approximately 56 percent of the original wetlands in the continental United States has been lost due to development. Annually, more than 45,000 acres of wetlands are destroyed.

If any state stands to lose from the destruction of wetlands, it is New Jersey. What would New Jersey be without the wetlands and coastal areas that dot our shore and which provide the recreational activities that constitute the second largest industry in the state? Without the fish and shellfish that spawn in our wetlands? Without the flood control benefits that wetlands provide?

From northern New Jersey all the way to Cape May, wetlands are important to the residents of the state. For some, wetlands protection preserves their livelihood. For others, it represents the last remaining vestige of open space in the country's most densely populated state.

Congressional intent in 1977 may have been to protect as much wetlands as possible. Since that time, it is clear that the language of the existing Act contains too many loopholes favoring development. Time and time again, the U.S. Army Corps of Engineers has found justification for non-water dependent uses in wetlands, even in the face of strong opposition from other federal review agencies.

The examples cited in the beginning are but only two of numerous instances where Congressional intent has been disregarded. An equally destructive project is the Timber Properties development near Great Swamp National Wildlife Refuge. The Corps approved a 22-acre townhouse project allowing for the filling of 8 acres of wetlands. The U.S. Fish and Wildlife Service appealed the decision to the Assistant Secretary of the Army where the decision was ultimately re-affirmed.

Although the 1977 Amendments provided other federal review agencies opportunities to object and hold up projects for more extensive review, administrative changes have greatly stymied the process. New working agreements between the Corps and the federal review agencies took away most of the clout they once had and result in a proliferation of types of environmentally-unsound projects cited above.

We believe that the proposed changes under the Water Quality Renewal Act will strengthen existing provisions and provide the type of protection so urgently needed. The proposed amendments prohibits the issuance of a dredge and fill permit by the Corps unlesss it is established that the discharge will not have an unacceptable adverse effect on the aquatic environment and that there are no practicable alternatives which have less adverse effects.

The proposed amendments also bar the District Engineer from issuing a permit within 30 days of notification if other federal agencies express opposition. It requires the District Engineer to explain in writing the rationale for issuance of a permit. Federal review agencies are allowed to elevate a permit to the Secretary of the Army for an ultimate decision.

We believe that with these changes, better and more sensitive decision making will occur. We believe that the proposed amendments will provide protection to a rapidly-disappearing resource, our nation's wetlands, and we urge that you, Mr. Chairman, and your subcommittee endorse these measures.

Thank you.

Testimony of New Jersey Clean Water Campaign

WHY NEW JERSEY NEEDS A STRONG FEDERAL CLEAN WATER ACT

Since the passage of the federal Clean Water Act in 1972, New Jersey has seen substantial improvement in the water quality of its lakes, rivers, streams and ocean. Fish have returned to many waters, pollutant levels have dropped and marine life is once again flourishing in certain areas. In the last four years over 7,000 acres of NJ's coastal waters have been opened to shellfish harvesting, which was previously banned due to excessive bacteria levels. While these accomplishments are encouraging, much more needs to be done in NJ to meet the Clean Water Act goal of making all waterways fishable and swimmable. We must tackle the growing problems of toxics disposal, ocean pollution and wetlands destruction. H.R. 3282, introduced by New Jersey Congressman Jim Howard, strongly addresses these issues.

1. TOXIC POLLUTION

New Jersey, one of the nation's leaders in chemical manufacturing, generates 370,000 tons of hazardous waste annually; much of this ends up in our waters. The federal Clean Water Act requires industries discharging directly into our waters to install best available technology (BAT) to control toxics. While EPA would reduce toxic discharges by 50 percent, they have been slow to issue standards for many major industries. Regulations for pesticides, pharmaceuticals and inorganic chemicals, three major NJ industries, have yet to be finalized.

HOWARD'S BILL

Sets strict but reasonable deadlines for industries to meet BAT requirements to reduce toxic pollution and

Establishes a new program to identify and clean up toxic "hot spots".

2. OCEAN POLLUTION

The Clean Water Act presently allows publicly owned sewage treatment plants to discharge poorly treated sewage into estuaries or the ocean if they qualify for a waiver from the act's nationwide requirement for secondary sewage treatment.

At the same time that 20 million tons of wastes are dumped off the NY/NJ seacoast each year contributing to massive fishkills and contamination, twenty-five plants in the NY/NJ area have applied for discharge waivers. Anything less than full secondary treatment would pose an unnecessary threat to marine life.

HOWARD'S BILL

Severely limits the ability of EPA to grant waivers for municipal treatment plants to discharge into the ocean.

3. SEWAGE TREATMENT

NJ estimates that it needs an additional 2.4 billion dollars for wastewater plant construction to comply with existing Clean Water Act standards. However, the state is slated to receive only 385 million in federal funds during fiscal years 1982–1985. At this funding level, NJ can fund only 24 out of the 237 needed wastewater treatment projects.

HOWARD'S BILL

Increases federal funding for sewage treatment plants from the 2.4 billion annual limit set in 1981 to at least 4 billion annually for the five years, which would increase NJ's ability to meet its sewage needs.

4. WETLANDS

NJ's wetlands provide a vast array of vital ecological and economical benefits. NJ Wetlands:

—Are essential to the state's fisheries industry, especially trout fishing, which generates $50–75 million worth of business annually in NJ.

—Help make NJ the leading producer for cranberries and third leading producer for blueberries in the country.

—Support 90 species of rare plants and provide habitat for a great diversity of waterfowl and wildlife.

However, NJ has lost over 23 percent of its origial wetlands to dredging and filling. While NJ's coastal wetlands are well-protected by state legislation, the federal Clean Water Act is the only means for protecting NJ's inland wetlands. The Reagan administration and certain members of Congress have proposed weakening the Clean Water Act to allow more wetland destruction.

HOWARD'S BILL

Strengthens wetlands protection under the Clean Water Act by setting standards for the issuing of dredge and fill permits for wetlands.

Organizations Participating in the New Jersey Clean Water Campaign include:

American Littoral Society.
Association of New Jersey Environmental Commissions.
Clean Ocean Task Force.
Coalition Against Toxics.
Concerned Citizens of Wayne Delaware.
Eastern Surfing Association.
Jersey Coast Anglers Association.
Lakewood Inhabitants Fighting Environmental Rape.
League of Conservation Voters.
League of Women Voters of New Jersey.
Monmouth County Friends of Clearwater.
National Audubon Society (New Jersey chapters).
New Jersey Audubon Society.
New Jersey Conservation Foundation.

New Jersey Coalition for Alternatives to Pesticides.
New Jersey Council of Dive Clubs.
New Jersey Council of Trout Unlimited.
New Jersey Water Resources Coalition.
Passaic River Coalition.
Princeton Environmental Action.
Raritan Friends of Clearwater.
Re-Inhabiting New Jersey.
Rutgers Envirnomental Political Action.
Sierra Club (New Jersey chapter).
South Monmouth Board of Realtors.
Sussex County Conservation District.
United Boatmen's Association.
Utility Contractors Association of New Jersey.
Great Swamp Watershed Association.

TESTIMONY OF RAYMOND D. BOGAN

My name is Raymond D. Bogan. I am here to speak on behalf of the United Boatmen of New Jersey and the Jersey Coast Angler's Association.

I am here to testify on Bill H.R. 3282, the Water Quality Renewal Act. In explaining why we support H.R. 3282. I will try to concentrate on our fishing industry and how it is adversely affected by water pollution. I will explain why we feel H.R. 3282 is the best legislation to fight the threat of water pollution and to clean up presently polluted waters.

Clean water affects the shore economically and recreationally. It also affects the physical well-being of those who swim in it, work on it, and eat food taken from it.

In New Jersey, the recreational fishery brings some $550 million into the state. The commercial fishery brings in approximately $485 million (information provided by the State Division of Fish and Game).

The fishing industry, as well as the rest of the much larger tourism industry of which it is a part, is hurt by pollution and threatened by laws which are lax in water pollution matters.

Specific instances where our industry has been injured by water pollution, juxtaposed with the features of the Bill in question, will explain why the organizations I speak for back H.R. 3282 and its tough stand on pollution matters.

The Bill sets stricter deadlines for industries to reduce discharges of toxic wastes. Warnings on toxins, metals (e.g., lead, zinc, etc.) and other cancer-causing agents are becoming more prevalent. Fin rot--a progressive distruction of fin tissue in certain bottom dwellers—has been shown to be directly related to pollution by toxic wastes (acids, etc.) and sewage. The New Jersey Department of Environmental Protection has been mandated to put out releases every six months on the potential health hazard of PCBs in bluefish, striped bass and eels. These releases have resulted in a 50 percent drop in the bluefishing portion of the industry—a substantial part of the fishing industry.

The Bill places tighter controls on the discharge of poorly or non-treated sewage by municipalities into the ocean. A few years ago it was common during the winter months for scuba divers, who dive for their livelihood as well as recreationally, to tell of the effects of municipal pumping of untreated sewage on in shore wrecks and rock piles, the habitat of many fish. They would tell of scenes where dead lobsters would be piled up to a foot high in these habitats and where fish would be suspended dead off the wrecks as a result of the sewage pumping.

In a dump site offshore of Ambrose Light Tower off of Long Island, New York City sends barges to discharge its sewage. That area has become known as the "Dead Sea," through which fish will migrate but will not dwell.

The increase of funding for sewage treatment plant construction would help in instances where the municipalities are forced to pump sewage into the ocean.

Increasing penalties for Clean Water Act violations would serve as a deterrent to violators who would disregard the mandate of the American public for cleaner water.

Another aspect of the tourism industry as it relates to the ocean can be seen in recreational scuba diving. This activity provides employment for those who cater to the recreational diver. Pollution problems in the Greater New York Bight already restrict the areas in which scuba divers can dive. Increased pollution would further diminish this area and make it impractical for such a business to be carried on in particular areas.

As a case in point, twelve divers who dove from the boat Sister Rib onto a wreck twelve miles offshore of Long Branch, experienced ear, eye, and throat infections, and skin rashes. Two women diving experienced bacterial and fungal infections.

There are bright spots to the affects of legislation which has been directed toward cleaning up the environment where certain municipalities have installed modern sewage treatment plants and its treated sewage is dumped into the ocean. It has been shown that the inshore underwater life is not seriously harmed by this sewage.

In conclusion, after having reviewed the foregoing examples of how pollution adversely affects the fishing industry, you can see the obvious destructive impact on the economic and recreational aspects of this industry. We feel that Bill H.R. 3282 best addresses the problems of water pollution and is the best protector of the environment and our industry which is dependent on the environment for its survival.

TESTIMONY OF ELLA F. FILIPPONE, PH. D., EXECUTIVE ADMINISTRATOR, PASSAIC RIVER COALITION

Mr. Chairman, and members of this Subcommittee, we would be hard pressed to find a constituency anywhere else in the United States which supports the Clean Water Act with more vigor than those in the Passaic River Valley. Since the founding of this Nation, this relatively small river system has provided industry and the public with water resources which brought northern New Jersey to the economic standing which it holds today. Unfortunately, during the early years of this century, disregard of the impact of pollution discharges caused this watershed to be considered one of the ten most polluted river systems in the nation; it has been described as "New Jersey's most maligned public servant."

Since the passage of the Federal Pollution Control Act Amendments of 1972, water quality has begun to improve and we want to see that positive course continued. The public support of clean water efforts has been seen over and over again: Thousands of petitions in the mid-'70's for the Passaic to be the model river; thousands of letters and 'phone calls to stop dumping into the river by a major sewer authority with a break in its interceptor; continuous overwhelming support for state bond issues related to water resources.

Thus, the introduction of H.R. 3282 by Congressman James Howard is perceived as furthering this program's assurances to the citizens of northern New Jersey that improvements toward water quality can be a reality and not just a distant goal.

CONSTRUCTION GRANTS

We have consistently supported a well-funded construction grants program, so as to substantially improve water quality in our river systems. In implementing the construction grants program, we urge Congress to place the highest priority on those facilities which discharge into potable drinking water supplies. While an emphasis existed for the allocation of funds to facilities in the urban area, the focus should be on facilities which impact waters used by the urban areas. For example, in our watershed, the most urban area (Newark, Paterson, Passaic) is serviced by a facility which discharges into Upper New York Harbor, affecting to some degree the coastal waters. However, Paterson and Passaic receive their drinking water supply from the Upper Passaic, which still has several projects which are not even close to the implementation stage on New Jersey's priority list. Such facilities have a direct impact on public health.

Another component of the construction grants program which should have more visibility and accountability is the projected improvement to water quality for the expenditure of funds. This type of assessment has been done in New Jersey for industrial discharges and should be required for POTW's also. The public should be informed of the anticipated improvement in water quality. A commitment, actively pursued, should be made by the States to insure compliance with wastewater management plans. Recently, for example, we were involved with an extremely difficult evaluation on the re-establishment of an industrial facility on the Whippany River, a major tributary to the Passaic which has limited flow at best. Several years ago, under 201 planning, the Morristown facility (built in 1911), was removed from the long, drawn-out planning process to expedite an expansion and upgrading to tertiary treatment. The expansion occurred but the advanced waste treatment did not. This element is a low priority on the State's list; yet lack of this improved treatment will have impacts on the public health and economic needs of the region. We need better management and accountability from the Environmental Protection Agency and the States on the construction grants program.

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SECTION 404—WETLANDS

We in the Passaic River Valley strongly support the maintenance and strict adherence to Section 404 related to the filling of our Nation's wetlands, We are enclosing, as an exhibit, an article by Rod Leith of THE BERGEN RECORD, which reports on the extensive losses of inland wetlands within our watershed. We recognize that this part of the Clean Water Act cannot do all things. However, in addition to controlling fill, the disturbance of the wetlands by soil movement, mining, and alteration of habitat should be a part of this section. Furthermore, other federal agencies which provide funds for needed programs and projects should require full conformance with Section 404 *prior* to application for funds. In the manner, an applicant will know what is expected and may act accordingly. When, for example, a UDAG grant is awarded for development in a riverine wetland, which clearly should not be allowed, considerable frustration and the expenditure of resources on the part of the applicant may occur. Such situations could be avoided if the applicant knew beforehand of the 404 program and the probable degradation resulting from the proposed development. In the case of the Passaic River Central Basin, these waters are drinking water supplies for a majority of northern New Jersey, and have enormous value for flood control.

PRETREATMENT PROGRAM

Uniform national standards are the only equitable manner in which to deal with the pretreatment program. The effluent at the end of the pipe and the sludge disposal programs are contingent on a uniform national program. The ultimate goal must be the removal of hazardous substances such that the disposal of the residue at the plant, either as effluent or as sludge, is not jeopardized. Within the parameters of the pretreatment program, consideration should be included on the reuse of substances removed from the waste stream, as has been done in various European programs. This type of function gets back to a management program, which provides the incentives for a waste exchange.

SLUDGE USE AND DISPOSAL

The sludge management program has floundered because of lack of a comprehensive program which deals with: (1) sludge content; (2) a comprehensive pretreatment program; and (3) volume considerations. The threat to water resources from the lack of a program is mind-boggling in the Passaic River Basin. Sludge management must be planned and implemented on a regional basis. We cannot allow small storage areas to proliferate throughout a watershed. If guidelines were established through an extensive public participation program, such as the 208 Policy Advisory Committee process, an equitable program could be developed. When the Northeast New Jersey Wastewater Management Policy Advisory Committee was active, sludge management had a high priority and was to be undertaken as an issue for review during the continuing planning process. Unfortunately, this process was eliminated. Although some 208 programs in the nation were not successful, we in northern New Jersey had established an active committee of 70 representatives which developed concensus and better understanding on difficult issues.

NON-POINT SOURCES

The only possible process which can control non-point sources of pollution is one which ultimately places the burden of enforcement on the local level. The basic decision on what is or is not permitted may be done on the federal/state level, through guidance and technical assistance but the ultimate responsibility is at the source. In that regard, a major step forward would be a broad-based education program to inform the public on "What is non-point pollution? Where does it come from? How can it be controlled?" In the Upper Passaic 201 Facilities Plan, non-point sources were already identified as having a major impact even if the POTW's were improved. Thus, we in North Jersey are perhaps somewhat ahead of others in identifying non-point pollutant impact, and would welcome an opportunity to work with the public and local officials to attain better controls, which would benefit our waterways.

WATER QUALITY STANDARDS

With the announcement by Administrator William Ruckelshaus recently, that the recommendations which had been promulgated earlier by EPA are being rescinded, we now believe the time has come for the Congress to establish a firm antidegrada-

tion policy for all waters of the United States. The premise must be the simple fact that water is an invaluable natural resource, and should be treated as such. Recently, in a discussion with a leading New Jersey pharmaceutical company, we were told that they don't need clean water: they need sterile water. Thus, it becomes quite meaningful that we must provide a high quality water supply if we want to retain productive and profit-making companies in our regions.

PROTECTION OF BAYS AND ESTUARIES

We welcome the section in Congressman Howard's bill which calls for the management of our bays and estuaries, and suggest that the lower Passaic and Newark Bay be placed as a major challenge under this format. This region has been dramatically degraded, and is beginning to show signs of recovery. Following the intent of the Clean Water Act, the reversal of estuarine and bay area pollution challenges our technology and the innovativeness of which we have been so proud during the past century.

Mr. Chairman, you and your Subcommittee have provided us, the citizens of New Jersey, with countless programs and processes whereby our Passaic River is moving towards once again being the Jewel of the East Coast, a working river with countless benefits for our citizens. We know of your own dedication to our river valley, and will work with you to assure that the goals of this important legislation are implemented, as the public wishes them to be.

Thank you for your time and courtesies.

THE RECORD (Bergen Passaic)
July 11, 1983

Passaic River's ebbing wetlands

By Rod Leith
Staff Writer

The Passaic River overflowed its banks, and the only escape for Florence Spatts was a makeshift wooden bridge between her front door and Horseneck Road.

Since she moved to her house beside the rolling Great Meadow in Fairfield 40 years ago, water has nearly consumed her property. The backyard pool collapsed and sank. Sealant applied to waterproof her basement oozed water.

The Great Meadow, like a good neighbor, once absorbed much of the water that spilled over the river's banks. No more. Development has gobbled up nearly a third of the Passaic River Basin's wetlands, which, like a heavily used sponge that frays around the edges, have lost much of their absorbency.

Development made flooding from this spring's heavy rains worse than usual in many basin communities. And, flood experts warn, further development of the wetlands would increase the severity of flooding even in a year of normal rainfall.

Despite this year's flooding, experts say residents of Wayne, Lincoln Park, Paterson, Little Falls, Totowa, West Paterson, Garfield, Lodi, and Saddle Brook can be thankful that rain did not come down this year as it did in 1977, when one storm caused $13.5 million in damage to properties in North Jersey.

Swollen insurance premiums

If communities suffer flooding, their property owners are also marked for high insurance premiums. Nationally, a homeowner pays an average of $140 a year for flood insurance; in Wayne, 703 policyholders pay about $200 apiece, or $141,200 annually in all. Mrs. Spatts remembers paying about $40 for her first year of coverage, but the average payment in Fairfield is now $255 a year.

"Without those meadows," said Clark Gilman, supervisor of the state Flood Plain Bureau, "there really isn't any [flood-control] plan."

"[The wetland] fills up like a bowl," said Marilou Bernard, a hydrol-

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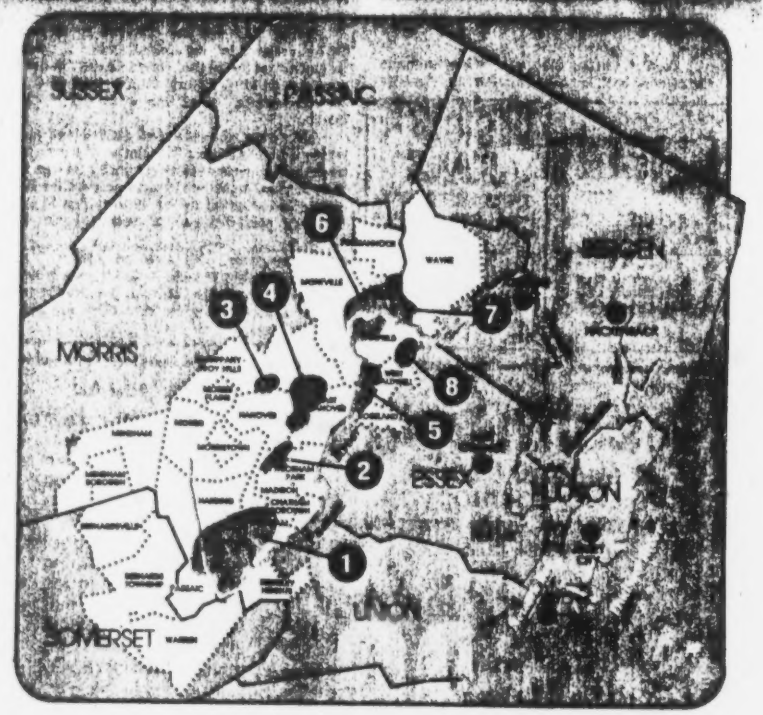

Map by Bob Bogert

The wetlands making up the central Passaic River Basin's natural storage area: Great Swamp (1), Black Meadow (2), Lee Meadow (3), Troy Meadow (4), Hatfield Swamp (5), Great Meadow (6), Bog and Vly Meadow (7), and Long Meadow (8).

Passaic watershed faces increased flooding

Wetlands threatened by tide of development

ogy expert. "But the impacts of development have caused it to flood higher, faster, and for longer durations."

Traveling on Route 80 through Passaic and Morris counties, a motorist gets a panoramic view of much of the development of wetlands. Willowbrook Mall in Wayne and massive commercial and residential construction in Fairfield took pieces of wetland in Passaic and Essex counties. Further south, in watershed land outside the Great Swamp National Refuge, the landscape is dotted by hundreds of town houses and condominiums off Route 287.

Wildlife has suffered along with property owners. Across Route 80 from Mrs. Spatts's Fairfield home, deer were recently trapped by water that spilled over the Passaic's banks. Some were able to climb the embankment of the highway, but 25, some of them pregnant does weakened by lack of food, died.

Some federal wildlife officials and environmentalists warn that uncontrolled development is destroying irreplaceable habitat and threatening endangered wildlife.

Officials at odds

In the last year, the development issue has pitted officials of the Reagan administration against one another.

On one side of the controversy are Col. Walter M. Smith Jr., who, until June 30, headed the U.S. Army Corps of Engineers' New York office, and Assistant Army Secretary William R. Gianelli.

Smith was in large part responsible for allowing development on the wetlands over the last three years, and Gianelli wants to further relax wetland development rules enforced by the Corps of Engineers. Gianelli's proposals would speed the process of applying to build on wetland by reducing the amount of land controlled by the corps and by eliminating many of the avenues for objecting to development.

On the other side, officials of the U.S. Department of the Interior and members of several environmental organizations say the Army Corps, while charged with saving North Jersey from flooding, has stood by while development increases flood damages.

One official of Interior's Fish and Wildlife Service claims that Gianelli's proposed wetland rules could have dire consequences for the open marsh and swampland of North Jersey's Passaic River Basin. "If they [the rule changes] go through," he said, "the result will push us out to the coast."

State regulations proposed

Legislation introduced last week in the state Senate and Assembly would regulate wetlands now unprotected. If the legislation is adopted, New Jersey would join New York, Michigan, Wisconsin, and a few other states with such rules. However, until the state takes control, the Army Corps regulations and Assistant Army Secretary Gianelli's reforms are the future.

The Army Engineers, charged with saving North Jersey from flooding, have been accused of standing by while development increases flood damages.

The Corps of Engineers has been studying the Passaic River since Mrs. Spatts and her late husband, Albert, moved from a rented Belleville apartment to their home in 1943. Forty years and five unsuccessful flood-control plans later, the agency now believes that wetlands may have to be purchased to be preserved.

"Preservation could be critical if we choose certain structural [flood-control] alternatives, like tunnels," said Robert Callegari, chief of the corps's Passaic River Study Group. The current plan includes a recommendation to spend as much as $120 million to buy about 13,000 acres of wetlands, Callegari said. The land could be purchased by the U.S. Department of Interior, or New Jersey through the Green Acres program.

"We have to ask what kind of dangers are we preventing if we buy," he said.

The Passaic River Basin study, which has cost $15,878,000, may answer that question. The study was ordered by Congress in 1977 and is due to be completed by mid-1984.

Meanwhile, Army Corps planners estimate that development has occurred over 6,000 acres of Passaic River Basin wetlands since 1940. The Department of the Interior, however, says the corps's estimate is far too conservative. The agency estimates that the Passaic River Basin had more than 70,000 acres of wetlands in 1960 and that about 22,000 have been lost. [See related article.]

"We do not expect the rate of habitat losses to be reduced in the near future," said Assistant Interior Secretary Ray Arnett in a 1982 letter protesting development of wetlands in the Passaic River Basin. "In fact, we expect the opposite," he said, forecasting that another 125 acres of wetland would be lost through development in Morris County.

Various factors

Development of wetlands has occurred because of a number of factors:

- Construction of three major highways in North Jersey, Routes 80, 287, and 280, all of which cut through wetlands. Land-use authorities say these highways, in addition to causing thousands of acres of swamp and marshland to be filled for their construction, have made once-fallow land valuable.
- Local officials, concerned with broadening their communities' tax bases, have developed master plans and zoning codes that encourage industrial, commercial, and residential uses for land designated as wetlands.

Most of North Jersey's wetlands are zoned for development, except for a large section of the 3,100-acre Troy Meadow in Parsippany, which

is owned by Wildlife Preserves, and the 6,800 acres of the Great Swamp National Wildlife Refuge. Unless and until state inland wetlands legislation is enacted, restrictions on development in much of the Passaic River Basin must depend on municipal zoning ordinances.

● Corporate and private property owners, land speculators, and build-effects of development can be balanced by more tax ratables, better roads, and improved municipal services.

When the Prudential Insurance Company proposed filling 200 acres of Lee Meadow in Parsippany in Morris County, for example, local officials were persuaded that the impact on the environment would be minimal and that the development would vastly improve road transportation.

● If development of wetlands is environmentally questionable, it is not necessarily illegal.

Assistant Secretary Gianelli outraged environmentalists and federal wildlife officials by refusing to bar the Army Corps from permitting a substantial town-house development near the Great Swamp in Harding Township. And he has now proposed sweeping changes to streamline the wetland permit program.

Among the proposed changes is a provision that would exempt such federally financed projects as highways, sewerage projects, and dams. A new definition of wetland would exclude bottomland hardwoods and shrub bogs. The proposals call for requiring only "letters of permission" for certain filling and dredging activities.

The result, environmentalists say, would be further erosion of the wetlands in New Jersey and across the nation. The Gianelli proposals could foreclose the public's right to comment and bar federal and state wildlife and environmental agencies from reviewing and objecting to development projects short of going to court, they say.

Streamlining the permit program, Gianelli counters, is part of the Reagan administration's move "to have government stand by the people's side, not ride on their backs."

Developers favored

Environmental groups and officials with the Interior Department cite New Jersey as an example of where wetland enforcement favors developers. At the center of the controversy is Colonel Smith, the former Corps of Engineers' New York District chief engineer, who retired June 30 to take a job with Hartz Mountain Industries.

Local officials, concerned with broadening their communities' tax bases, have developed master plans and zoning codes that encourage industrial, commercial, and residential uses for land designated as wetlands.

Five major environmental groups have challenged the permission granted Hartz Mountain Industries to fill nearly 200 acres of wetland in the Hackensack meadowlands. The Environmental Defense Fund and other groups say Smith, who approved the Hartz permit in January, should have required the company to do a more extensive environmental review.

In the case of the Prudential proposal to fill half the wetlands in Lee Meadow, Smith decided to issue a so-called nationwide permit, a move that precluded public comment and input from other agencies. Among other things, Smith determined the loss of 200 acres in Lee Meadow to be "less than four tenths of 1 percent of the wetlands area of the Passaic River Basin."

"Each of the [development plans affecting wetland] that come before me are small relative to total capacity," said Thomas M. Creamer, chief of the Army Corps's construction permit branch in New York. "Each of these little things are not significant unto themselves."

Prudential opposed

A different view is taken by Kenton R. Inglis, acting state conservationist for the U.S. Department of Agriculture, who argued against Prudential's project. "This wetland is only a small percent of the total wetlands in the river basin," he explained. "However, because of past losses of wetlands in the basin, we feel it essential that the remaining wetland areas be recognized for their beneficial values."

Florence Spatts has witnessed the diminution of one of those wetlands. From her back window, she watched as thousands of tons of rock filled the wetland to support six lanes of superhighway when Route 80 was built through the Great Meadow. More recently, she has seen truckload after truckload of soil taken from the meadow. She complained, she says, but her problem was considered too small, too insignificant.

Now, Mrs. Spatts looks out past her backyard at a large wooden billboard in the midst of the impounded water. It announces that commercial and industrial developers are welcome to buy tracts of 2,000 and 4,000 square feet.

"I guess I'm in the same category as those people you read about along the Mississippi," said Mrs. Spatts, a widow who raised three daughters in the house on Horseneck Road. "I'd like to stay," she said, recalling when her children played in the backyard and the meadow was strong enough to support wagons full of hay. "But I'm giving up."

Passaic's wetlands: How much are left?

The Army Corps of Engineers estimates that 18,100 acres of wetlands remain intact in the Passaic River Basin, excluding the 6,800 acres of protected wetlands inside the Great Swamp National Wildlife Refuge. The estimate, however, clashes with calculations by Dr. Eugene Vivian, a consultant for the U.S. Department of the Interior.

Vivian, an environmental scientist who teaches at Glassboro State College, said that a closer examination of development in the central Passaic basin's wetlands — those tracts of crucial importance to flood control in downstream communities in Passaic and Bergen counties — shows that almost 4,000 of the 12,000 acres estimated by the Army Corps to be undisturbed have been consumed by roads, airports, sewerage plants, industrial and commercial buildings, and housing.

In 1962, before Route 80 was built, Army Corps flood planners underscored the importance of preserving the Great Meadow, then the largest of the central basin wetlands. Their report said the natural water storage provided by the Great Meadow had saved much of the downstream sections from being devastated by storms.

"The past security of the Passaic River Basin against catastrophic floods," the report said, "was entirely dependent upon availability of the Great Meadow and adjacent areas for natural retention storage."

1979-80 survey

The most recent government survey of Great Meadow and six other Passaic basin wetlands was done in 1979-80 by Vivian and other specialists with the Interior Department's Fish and Wildlife Service. That survey showed a total of about 12,000 acres, but it failed to specify how much of that acreage had been lost to development allowed by the Army Corps.

Vivian recently provided The Record with an accounting of the wetlands still open, or undisturbed. They total 8,047 acres, comprised of:

- Great Meadow, 4,275 acres, of which 40 percent has been lost to Route 80 and development on its fringes, including extensive construction in Fairfield. About 2,565 acres are undisturbed. (Great Meadow was renamed Little Piece Meadow and Great Piece Meadow after Route 80 was built in 1968.)
- Troy Meadow, 3,100 acres, of which 20 percent has been lost to development and utilities, leaving about 2,480 acres undisturbed.
- Hatfield Swamp, 1,870 acres, of which 40 percent has been lost to development, Route 280, other road construction, and a sewerage treatment facility and other utilities, leaving about 1,122 acres undisturbed.
- Black Meadow, 1,200 acres; 40 percent has been lost to Morristown Airport and utilities, leaving about 800 acres undisturbed.
- Bog and Vly Meadow, 900 acres; 20 percent has been lost to Lincoln Park Airport and general development, leaving about 720 acres undisturbed. (If the Frassetto Group of Hackensack is permitted to fill an additional 200 acres, Bog and Vly Meadow will be reduced to about 520 acres.)
- Lee Meadow, 400 acres; 30 percent has been lost to development, leaving about 280 acres undisturbed. (If the Prudential Insurance Company is permitted to fill an additional 200 acres for development, Lee Meadow will be reduced to about 80 acres.)
- Long Meadow, 262 acres; 70 percent has been lost to industrial and residential development and road construction, leaving about 80 acres undisturbed. (The federal Department of Housing and Urban Development has approved a $1.6-million grant for industrial construction by the Essex County Improvement Authority on 70 of the undisturbed 80 acres, though construction depends on the Army Corps's approval of a fill permit.)

— ROD LEITH

TESTIMONY ON THE CLEAN WATER ACT BY JANE NOGAKI

My name is Jane Nogaki and I am from Evesham Township, New Jersey. I'd like to thank Congressman Howard for introducing the Clean Water Act. No one needs clean water more than we do in New Jersey.

My part in the New Jersey Clean Water Campaign testimony has to do with how a strong Clean Water Act will help small communities like Evesham Township.

Parts of our township are experiencing ground and surface water contamination by nitrates. These problem areas involve developments that have individual septic systems for waste disposal and relatively shallow wells for drinking water (70-100 feet).

Because of the Pinelands nature of the soil—sandy, highly permeable, execessively well drained, nitrates from septic tanks and lawn fertilizer or farm fertilizer migrate through the soil downwards to the subsurface aquifer, and sideways to surface waters. Our recreational lakes are choked with weeds, indicative of high nitrogen and phospate loading from run-off and leaching.

In my particular development, called Marlton Lakes, nine homeowners have wells with nitrate levels above the acceptable drinking water standard of 10 ppm. Thirty-three wells in the area showed nitrate levels of between 5—9.99 ppm. Considering that the ambient level of nitrates in the pine barrens is twoppm, we can see that development has overtaxed our surroundings' ability to attenuate nitrates in ground and surface waters. This loss affects our health and threatens property values. The demoralizing factor that accompanies the knowledge that we are fouling our own nest is overwhelming.

Our civic association requested help from the township in assessing our problem. Our Town Council authorized the Township Municipal Utilities Authority (MUA) to explore the feasibility of a public water supply to the southern end of the township and establishing a septage management program to amerliorate the ongoing nitrate pollution.

In August, 1983, the Evesham MUA hired a consulting firm to identify the extent and severity of water pollution problems related to the operation of septic systems in our town. The consulting firm is sampling well, stream and lake water in the unsewered areas of the township. After identifying problem areas, Princeton Aqua Science will suggest solutions. The solutions will consist of localized methods of wastewater treatment such as the construction of neighborhood septic systems or the repair of existing septic systems using state of the art technology. It is hoped that the study and repairs will be eligible for grant funds under a special USEPA and N.J. DEP program for innovative and alternative approaches to waste management in small communities, which is funded under Section 201 of the Clean Water Act.

The Evesham MUA is also applying for funds under the Clean Water Act to rehabilitate an old part of the existing sewer system in the northern section of town (Major Source System Rehabilitation).

It is vital to ground and surface water quality that small towns and rural areas get a share of the funds. Relatively small investments can yield positive results in preventing further water degradation. Towns like Evesham that do not have a large tax base will not be able to afford these innovative programs without the help provided for in a fully funded Clean Water Act.

I and my citizens group, Coalition Against Toxics, support all parts of the proposed Clean Water Act, but we are particularly interested to see that a provision is made for mandatory controls over non point source pollution, such as run off from farmlands and roadways. Our group formed in order to prevent human exposure to pesticides and to protect surface and groundwater from pesticide contamination. I submit to you a news article about the pesticide contamination of a nearby lake, Strawbridge Lake in Moorestown, New Jersey. Strawbridge Lake has long been the focal point of the Moorestown community and is probably the most photographed lake in southern New Jersey. The waters have been contaminated by runoff of pesticides—chlordane in this instance.

Since agriculture is a major land use in southern N.J., pesticide and fertilizer runoff needs to be controlled. According to the National Wildlife Federation, non source point pollution accounts for half of the nation's water pollution.

[From the New Jersey Courier-Post, Apr. 8, 1983]

AREA FISH WARNING RENEWED

(By Bernie Weisenseld)

The State Department of Environmental Protection (DEP) has renewed its 4-year-old warning against eating fish caught in several streams and lakes in Burlington, Camden and Gloucester counties because of possible contamination by the pesticide chlordane.

The warning applies to the Cooper River, the northern and southern branches of Pennsauken Creek, Strawbridge Lake in Moorestown, and Woodbury Lake and Steward Lake in Woodbury, said DEP spokesman James Staples.

Signs are being posted at those locations to coincide with the opening of trout fishing season tomorrow, Staples said.

"These are not trout waters, but the mere fact that trout season has opened raises everybody's consciousness" about fishing, he added.

Tests of fish taken from the affected streams and lakes in 1981 and 1982 found levels of the pesticide chlordane at levels higher than permitted by the U.S. Food and Drug Administration, Staples said.

Heavy doses of chlordane can cause immediate damage to the brain and nervous system and can bring about muscle spasms, behavioral changes, organ degeneration and death.

Developed 40 years ago, in 1978 the pesticide was declared a carcinogen and banned by the federal government from all uses except below-ground application for termite control.

"When you inject something into the ground, you're heading right to the nearest fish," said Staples.

State health and environmental protection agencies began a program of testing fish in area waterways when concentrations of chlordane appeared in Strawbridge Lake and the upper portions of Pennsauken Creek in 1978.

The source of contamination initially was thought to be a Mount Laurel garden supply store where 30 gallons of chlordane was washed into Strawbridge Lake, but subsequent tests indicated chlordane may have been entering the lake from some other source and may have been in the lake longer than previously suspected.

A persistent chemical, chlordane can remain active in soil and sediment at the bottom of waterways for many years.

COALITION AGAINST TOXICS

David C. Copeland, Chairman; Jane Nogaki, Secretary; Wynne Falkowski, Treasurer; Stephen Flakowski, Medical Consultant; Rodger Nogaki, Safety Consultant.

Informed choices can be yours!

Contact CAT for information on:

Pesticide health effects and precautions to prevent exposure;

Protecting your rights from chemical trespass;

Implementing a biological control program in your town or neighborhood.

If your town governing body or your civic association would like to hear our presentation on biological control of the gypsy moth, contact 767-1110 to set up a meeting date.

To become a member of CAT, send $10 to: Wynne Falkowski, 31 Coventry Circle West, Marlton, NJ 08053.

It is the goal of CAT to work for a statewide restriction on the aerial application of broad-spectrum pesticides over residential areas, and to see that strict regulations regarding ground spraying are enacted by New Jersey Department of Environmental Protection to prevent drift onto neighboring properties.

In February 1983, Evesham Township enacted an ordinance prohibiting the aerial application of broad-spectrum pesticides over non-agricultural areas, Connecticut has had a similar policy since 1972. Other nearby states such as Delaware, Pennsylvania, and Massachusetts are funding only biological sprays for control.

A related issue that we are working on is the renewal of a strong Clean Water Act and Safe Drinking Water Act. In addition we have lobbied to support:

The "Right-to-Know" Act.

NJ Birth Defects Registry.

Drinking Water Testing Act.

FIFRA Reform Act.

New Jersey organizations with whom we cooperate:

NJ Citizen Action.
NJ Clean Water Campaign.
Association of NJ Environmental Commissions.
NJ Coalition for Alternatives to Pesticides.
Southern New Jersey Perinatal Cooperative.
Burlington County Department of Health.

Coalition Against Toxics (CAT) was formed in May 1982, by citizens from twelve towns who were interested in uniting their efforts and experiences in promoting biological control of the gypsy moth rather than relying on potentially harmful chemical means.

The founders formed a network with environmental commissions and private citizens from Medford, Medford Lakes, Evesham, Cherry Hill, Moorestown, Mount Laurel, Willingboro, Tabernacle, Shamong, Berlin, and Waterford to coordinate providing information on safe and effective gypsy moth control to township councils and neighborhood associations.

Using Evesham Township's positive experience with B.t. (Bacillus thuringiensis) for control of gypsy moth over a three year period, Coalition members spoke to ten towns in the fall of 1982, urging them to try using biological control methods. All ten towns cooperated.

We believe that the reduction of human exposure to broad spectrum pesticides is a worthwhile goal that can be accomplished through education and citizen awareness of choices in the use of pesticides.

Mr. ROE. Please proceed.

TESTIMONY OF VIVIEN LI, CHAIR, NEW JERSEY CHAPTER OF THE SIERRA CLUB; RAYMOND D. BOGAN, UNITED BOATMEN'S ASSOCIATION; ELLA FILIPPONE, PASSAIC RIVER COALITION; JANE NOGAKI, COALITION AGAINST TOXICS

Ms. LI. Mr. Chairman, and members of the subcommittee, thank you for inviting us here today. My name is Vivien Li. I chair the New Jersey chapter of the Sierra Club, which is made up of more than 9,000 members from the State of New Jersey.

We are part of the national Sierra Club comprised of 364,000 members nationally.

The Sierra Club, together with 30 other organizations in the State, are a part of the New Jersey Clean Water Campaign. Members on the panel here are representatives from various organizations that are representative of the groups.

Other groups that are part of the campaign, including the League of Women Voters of New Jersey, Utility Contractors of New Jersey, the South Monmouth Board of Realtors, Clean Ocean Task Force, Concerned Citizens of Wayne, and as I said, approximately 30 organizations total.

There are many people who are concerned about clean water. Unfortunately, all of them cannot be here today. We have petitions of 20,000 people who we canvassed over a several week period who wanted to express to the committee their concern for clean water.

These petitions were gathered as part of a major grassroots campaign, New Jersey and also nationally, to focus attention upon the important work that this committee is doing.

Over Labor Day weekend, we walked the beaches of the State of New Jersey to get some of these petitions signed and also to let people know exactly what you are doing and how very important the work of this committee is.

So I think all of them, as well as people we could not reach during that particular weekend, support your efforts. I think as we

look back at what has happened between 1977 and today, we have clearly made a great deal of progress.

But much more needs to be done. If we look, for instance, in terms of industrial sources, approximately 80 percent of industrial sources in New Jersey are currently meeting the requirements of the clean water Act, but only 60 to 70 percent of the industrial flows are actually in compliance with the law.

In other words, some of the big sources still are not yet on line. I think that is what you have been talking about during your hearings.

So there remains still a great deal to be done. But we again support many of your efforts, and I think that each one of us will identify specific parts of the act that we would like to comment on.

So I am going to turn it over to the panel now. We have made a pledge among ourselves that we are going to try to each only speak 5 minutes so that it will give you some time to ask questions and hopefully we can keep you on schedule.

So I am going to act as timekeeper.

Mr. ROE. Suppose what we do now is all of the testimony of the four panelists will be included in full in the record. Then you can proceed from there.

Ms. LI. Fine.

The first speaker will be Ray Bogan with the United Boatmen's Association. He is also the cochair of the New Jersey Clean Water Campaign.

He will talk about how important this bill is in terms of the boating industry and recreational industry.

Mr. ROE. Mr. Bogan.

Mr. BOGAN. Mr. Chairman, thank you. I was not on the plane in time, so I didn't know there was a 5-minute limit, so I will read real quickly.

Mr. ROE. We will give you an extra minute or two.

Mr. BOGAN. I will just read off the testimony here. Again, my name is Raymond D. Bogan. I am here to speak on behalf of the United Boatmen of New Jersey and the Jersey Coast Angler's Association.

I am here to testify on H.R. 3282, the Water Quality Renewal Act. In explaining why we support H.R. 3282, I will try to concentrate on our fishing industry and how it is adversely affected by water pollution.

I will explain why we feel H.R. 3282 is the best legislation to fight the threat of water pollution and to clean up presently polluted waters.

Clean water affects the shore economically and recreationally. It also affects the physical well-being of those who swim in it, work on it, and eat food taken from it.

In New Jersey, the recreational fishery brings some $550 million into the State. The commercial fishery brings in approximately $485 million—information provided by the State Division of Fish and Game. And that includes incidental businesses, though it excludes certain other types of recreational boating endeavors such as diving which would be affected by pollution also.

The fishing industry, as well as the rest of the much larger tourism industry of which it is a part, is hurt by pollution and threatened by laws which are lax in water pollution control.

Specific instances where our industry has been injured by water pollution, juxtaposed with the features of the bill in question, will explain why the organizations I speak for back H.R. 3282 and its tough stand on water pollution.

The bill sets stricter deadlines for industries to reduce discharges of toxic wastes. A big thing in New Jersey right now is that the warnings on toxic heavy metals and other cancer-causing agents are becoming more prevalent.

Fin rot—a progressive distruction of fin tissue in certain bottom dwellers—has been shown to be directly related to pollution by toxic waste and sewage.

The New Jersey Department of Environmental Protection has been mandated to put out releases every 6 months on the potential health hazard of PCB's in bluefish, striped bass and eels.

A little aside—this is kind of a bright spot insofar as to see what legislation has done so far. Within the last 5 years I have been told by the Food and Drug Administration that the level of PCB's seems to be going down.

I think that is a good sign of what cutting down on toxins can do. These fish, and bluefish account for almost 50 percent of the recreational fishery. It is a $550 million industry.

That is pretty substantial, especially in a State like ours, tourism-wise.

The bill places tighter controls on the discharge of poorly or nontreated sewage by municipalities into the ocean. Here I will give a couple of examples of places you can see the effects of raw sewage going into the ocean.

A few years ago it was common during the winter months for scuba divers who dive for their livelihood as well as recreationally to tell of the effects of municipal pumping of untreated sewage on in-shore wrecks and rock piles, the habitat of many fish.

They would tell of scenes where dead lobsters would be piled up to a foot high in these habitats and where fish would be suspended dead off the wrecks as a result of the sewage pumping. It is a pretty hard site.

I don't dive, but I have a couple brothers who dive. To say you can take pictures of it is kind of difficult because there is usually only two to three foot visibility if there is heavy dumping going on, if that.

But it is pretty hard. That is sewage dumped right offshore by municipalities. There are times when municipalities, when they have heavy rain falls, to let off some of the pressure they just shoot off raw sewage.

We had in 1976 a terrible fish kill. In that fish kill the Department of Environmental Protection National Marine Fishery Service through their branch at Sandy Hook agreed that it was caused by low levels of oxygen.

What they said off the record to us and many other fishermen as the reason for it was because of sewage and certain chemicals going into the ocean and lack of oxygen. In a dump off Ambrose Light Tower, that is off of Brooklyn, Coney Island, that area, 6

miles approximately from the light tower, barges go out and they dump, open up their doors and dump sewage out there.

That area is pretty much a dead sea in terms of fish dwelling. There are fish that will migrate through it, but you won't have fish that will stick in that area, where once you had a lot of whiting, a lot of food fishes that would stay in that area.

The increase of funding for sewage treatment plant construction would help in instances where the municipalities are forced to pump sewage into the ocean.

Another aspect of the tourism industry as it relates to the ocean can be seen in recreational scuba diving. This activity provides employment for those who cater to the recreational diver. That is becoming a lot bigger. You will see people moving down, all the coastal States moving down, hitting wrecks. Just to give you an idea of how pollution would affect a business like that, you see one case where the boat called the *Sister Rib* is a diver and hits wrecks up and down the Jersey coast. He and 12 others were diving off a wreck pretty close to the dump site.

It is an excellent location for diving because it is pretty neat to see. Unfortunately, after coming out of the water all the divers experienced ear, eye, and throat infections, skin rashes and two of the women experienced bacterial and fungal infections.

You can see bright spots. I mentioned one. Another—of legislation which helps clean up the water. As I said, where model sewage treatment plants have been installed and where they are being used and any kind of pumping would go on, we can't see through our experience, namely, the amount of fish in a particular area and divers' reports, we can't see where there is any serious harm to the environment through advanced sewage treatment plants.

So to wrap it up, that is why we support H.R. 3282, mainly because of the strong stance it takes. We don't feel it is just a good thing to have a strong stance on water pollution.

It is absolutely necessary, because if we don't have it, we are gone. The whole industry is gone and it is not out of the question now either.

I am not sitting here saying, oh, a terrible thing is going to happen. I have already seen it with the PCB warnings. Our business has dropped 50 percent on the blue fishing.

To be in this business and have a mortgage on the boat, our family, we have a number of boats, even us, we are being hurt by it. You can imagine a guy who concentrates on bluefish how he is affected by it.

So it is not just something that would be nice to have. It is absolutely essential. The tougher the standards the better.

Although there are certain hardships, we do need these strong standards and we think H.R. 3282 handles these in the best manner possible. Thank you.

Mr. ROE. Thank you.

Ms. LI. The next speaker will be Ella Filippone of the Passaic River Coalition. She will speak on how the bill will affect the Passaic River Basin.

Ms. FILIPPONE. Mr. Chairman, I appreciate the opportunity to be here this morning. I am pleased to be here representing northern New Jersey, and we are very pleased always to send back to Con-

gress our very prominent chairman. Some tell me he is the only one who knows more about the Passaic Valley than I do.

Mr. ROE. They are probably right.

Ms. FILIPPONE. We would be hardpressed to find a constituency anywhere else in the United States which supports the Clean Water Act with more vigor than those in the Passaic River Valley. Since the founding of this Nation, this relatively small river system has provided industry and the public with water resources which brought northern New Jersey to the economic standing which it holds today. Unfortunately, during the early years of this century, disregard of the impact of pollution discharges caused this watershed to be considered one of the 10 most polluted river systems in the Nation; it has been described as "New Jersey's most maligned public servant."

Since the passage of the Federal Pollution Control Act Amendments of 1972, water quality has begun to improve, and we want to see that positive course continued. The public support of clean water efforts has been seen over and over again: thousands of petitions in the mid-1970's for the Passaic to be the model river; thousands of letters and phone calls to stop dumping into the river by a major sewer authority with a break in its interceptor; continuous overwhelming support for State bond issues related to water resources.

Thus, the introduction of H.R. 3282 by Congressman James Howard is perceived as furthering this program's assurances to the citizens of northern New Jersey that improvements toward water quality can be a reality and not just a distant goal. We greet this bill with very strong support.

We have consistently supported a well-funded construction grants program, so as to substantially improve water quality in our river systems. In implementing the construction grants program, we urge Congress to place the highest priority on those facilities which discharge into potable drinking water supplies. While an emphasis existed for the allocation of funds to facilities in the urban area, the focus should be on facilities which impact waters used by the urban areas.

For example, in our watershed, the most urban area—Newark, Paterson, Passaic—is serviced by a facility which discharges into upper New York Harbor, affecting to some degree the coastal waters. However, Paterson and Passaic receive their drinking water supply from the upper Passaic, which still has several projects which are not even close to the implementation stage on New Jersey's priority list. Such facilities have a direct impact on public health.

Another component of the construction grants program which should have more visibility and accountability is the projected improvement to water quality for the expenditure of funds. This type of assessment has been done in New Jersey for industrial discharges and should be required for POTW's also. The public should be informed of the anticipated improvement in water quality. A commitment, actively pursued, should be made by the States to insure compliance with waste water management plans.

Recently, for example, we were involved with an extremely difficult evaluation on the reestablishment of an industrial facility on

the Whippany River, a major tributary to the Passaic which has limited flow at best. Several years ago, under 201 planning, the Morristown facility—built in 1911—was removed from the long, drawn-out planning process to expedite an expansion and upgrading to tertiary treatment. The expansion occurred but the advanced waste treatment did not. This element is a low priority on the State's list; yet lack of this improved treatment will have impacts on the public health and economic needs of the region. We need better management and accountability from the Environmental Protection Agency and the States on the construction grants program.

We in the Passaic River Valley strongly support the maintenance and strict adherence to section 404 related to the filling of our Nation's wetlands. We are enclosing, as an exhibit, an article by Rod Leith of the Bergen Record, which reports on the extensive losses of inland wetlands within our watershed. We recognize that this part of the Clean Water Act cannot do all things. However, in addition to controlling fill, the disturbance of the wetlands by soil movement, mining, and alteration of habitat should be a part of this section.

Furthermore, other Federal agencies which provide funds for needed programs and projects should require full conformance with section 404 prior to application for funds. In that manner, an applicant will know what is expected and may act accordingly. When, for example, a large UDAG grant is awarded for development in a riverine wetland, which clearly should not be allowed, considerable frustration and the expenditure of resources on the part of the applicant may occur. Such situations could be avoided if the applicant knew beforehand of the 404 program and the probable degradation resulting from the proposed development. In the case of the Passaic River Central Basin, these waters are drinking water supplies for a majority of northern New Jersey, and have enormous value for flood control.

Uniform national standards are the only equitable manner in which to deal with the pretreatment program. The effluent at the end of the pipe and the sludge disposal programs are contingent on a uniform national program. The ultimate goal must be the removal of hazardous substances such that the disposal of the residue at the plant, either as effluent or as sludge, is not jeopardized. Within the paramaters of the pretreatment program, consideration should be included on the reuse of substances removed from the waste stream, as has been done in various European programs. This type of function gets back to a management program, which provides the incentives for a waste exchange.

The sludge management program has floundered because of lack of a comprehensive program which deals with: One, sludge content; two a comprehensive pretreatment program; and three, volume considerations. The threat to water resources from the lack of a program is mind-boggling in the Passaic River Basin. Sludge management must be planned and implemented on a regional basis. We cannot allow small storage areas to proliferate throughout a watershed. If guidelines were established through an extensive public participation program, such as the 208 Policy Advisory Committee process, an equitable program could be developed.

When the Northeast New Jersey Wastewater Management Policy Advisory Committee was active, sludge management had a high priority and was to be undertaken as an issue for review during the continuing planning process. Unfortunately, this process was eliminated. Although some 208 programs in the Nation were not successful, we in northern New Jersey had established an active committee of 70 representatives which developed consensus and better understanding on difficult issues.

On nonpoint sources, the only possible process which can control nonpoint sources of pollution is one which ultimately places the burden of enforcement on the local level. The basic decision on what is or is not permitted may be done on the Federal/State level, through guidance and technical assistance but the ultimate responsibility is at the source. In that regard, a major step forward would be a broad-based education program to inform the public on "What is nonpoint pollution? Where does it come from? How can it be controlled?" In the Upper Passaic 201 Facilities Plan, nonpoint sources were already identified as having a major impact even if the POTW's were improved. Thus, we in north Jersey are perhaps somewhat ahead of others in identifying nonpoint pollutant impact, and would welcome an opportunity to work the public and local officials to attain better controls, which would benefit our waterways.

With the announcement by Administrator William Ruckelshaus recently, that the recommendations which had been promulgated earlier by EPA are being rescinded, we now believe the time has come for the Congress to establish a firm antidegradation policy for all waters of the United States. The premise must be the simple fact that water is an invaluable natural resource, and should be treated as such. Recently, in a discussion with a lending New Jersey pharmaceutical company, we were told that they don't need clean water: they need sterile water. Thus, it becomes quite meaningful that we must provide a high quality water supply if we want to retain productive and profitmaking companies in our regions.

We welcome the section in Congressman Howard's bill which calls for the management of our bays and estuaries, and suggest that the lower Passaic and Newark Bay be placed as a major challenge under this format. This region has been dramatically degraded, and is beginning to show signs of recovery. Following the intent of the Clean Water Act, the reversal of estuarine and bay area pollution challenges our technology and the innovativeness of which we have been so proud during the past century.

Mr. Chairman, you and your subcommittee have provided us, the citizens of New Jersey, with countless programs and processes whereby our Passaic River is moving toward once again being the jewel of the east coast, a working river with countless benefits for its citizens. We know of your own dedication to our river valley, and will work with you to assure that the goals of this important legislation are implemented, as the public wishes them to be.

Thank you for your time and courtesies.

Mr. ROE. Very well.

Ms. LI. The next speaker is Jane Nogaki from the Coalition Against Toxics. She will speak about how the act affects the small local community.

Ms. NOGAKI. Thank you. Mr. Chairman, members of the House Water Resources Subcommittee, my name is Jane Nogaki and I am from Evesham Township, N.J. I would like to thank Congressman Howard for introducing legislation to reauthorize and strengthen the Clean Water Act. No one needs clean water more than we do in New Jersey. We are the largest producer of hazardous wastes and have the largest number of dumpsites. Evesham was one of the first cleaned up, by the way, and is not a very dangerous site. It was an easy one.

My part in the New Jersey Clean Water Campaign testimony has to do with how a strong Clean Water Act will help small communities like Evesham Township.

Parts of our township are experiencing ground and surface water contamination by nitrates. These problem areas involved developments that have individual septic systems for waste disposal and relatively shallow wells for drinking water—70 to 100 feet.

Because of the Pinelands nature of the soil—sandy, highly permeable, excessively well drained—nitrates from septic tanks and lawn fertilizer or farm fertilizer migrate through the soil downward to the subsurface aquifer, and sideways to surface waters. Our recreational lakes are choked with weeds, indicative of high nitrogen and phosphate loading from run-off and leaching.

In my particular development, called Marton Lakes, nine homeowners have wells with nitrate levels above the acceptable drinking water standard of 10 parts per million. They are not drinking their water. Thirty-three wells in the area showed nitrate levels of between 5 and 9.99 parts per million. So they are approaching their maximum number. Our well is a 5.

Considering that the ambient level of nitrates in the pine barrens is 2 parts per million, we can see that development has overtaxed our surroundings' ability to attenuate nitrates in ground and surface waters. This loss affects our health and threatens property values. The demoralization factor that accompanies the knowledge that we are fouling our own nest is overwhelming.

Our civic association requested help from the township in assessing our problem. Our town council authorized the Township Municipal Utilities Authority to explore the feasibility of a public water supply to the southern end of the township and establishing a septage management program to ameliorate the ongoing nitrate pollution.

In August 1983, the Evesham MUA hired a consulting firm to identify the extent and severity of water pollution problems related to the operation of septic systems in our town. The consulting firm is sampling well, stream and lake water in the unsewered areas of the township. After identifying problem areas, they will suggest solutions. The solutions will consist of localized methods of wastewater treatment such as the construction of neighborhood septic systems or the repair of existing septic systems using state of the art technology. It is hoped that the study and repairs will be eligible for grant funds under a special USEPA and N.J. DEP program for innovative and alternative approaches to waste management in small communities, which is funded under section 201 of the Clean Water Act.

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The Evesham experience, if we get these funds and could use the technology, will serve as a model to small areas like ours. Our town is also applying for funds under the Clean Water Act to rehabilitate an old part of the existing sewer system in the northern section of town—major source system rehabilitation.

It is vital to ground and surface water quality that small towns and rural areas get a share of the funds. Relatively small investments can yield positive results in preventing further water degradation. Towns like Evesham that do not have a large tax base will not be able to afford these innovative programs without the help provided for in a fully funded Clean Water Act.

I and my citizens group, Coalition Against Toxics, support all parts of the proposed Clean Water Act. But we are particularly interested to see that a provision is added to the bill for mandatory controls over nonpoint source pollution, such as runoff from farmlands and roadways. Our group formed in order to prevent human exposure to pesticides and to protect surface and ground water from pesticide contamination. I submit to you a news article about the pesticide contamination of a nearby lake, Strawbridge Lake in Moorestown, N.J. Strawbridge Lake has long been the focal point of the Moorestown community and is probably the most photographed lake in southern New Jersey. The waters have been contaminated by runoff of pesticides—chlordane, in this instance.

Since agriculture is a major land use in southern New Jersey, pesticide and fertilizer runoff is a reality. It has been going on for a long time and needs to be addressed. It needs to be controlled, and the controls need to be mandatory. According to the National Wildlife Federation, nonsource point pollution accounts for half of the Nation's water pollution.

I don't have the expertise to describe methods to control this but I know at a local level our planning board is implementing the strategy such as storm water management, planting of grasses along edges of farmlands, not fertilizing, not using pesticides along the outermost edges of fields where water runoff would occur into streams. These kind of resources can be used.

Finally, I would like you to know that as the Secretary of a very small citizen organization that formed to improve water quality in our area, the citizen awareness of this water quality issue is very large. I have never seen an issue around which so many people could rally. No one that I have shown a petition to and asked them to sign has said, "I don't want it." Everybody wants it. Everybody wants clean water and they are starting to learn how they can participate in the system of getting it. They are forming groups like ours and speaking up in their towns and saying, we think the water quality in our town could be better. What can we do to get it? And that is why we formed.

So I thank you very much for this opportunity to testify, and hope that you will approve a very strong bill.

Mr. ROE. Thank you.

Ms. Li.

Ms. LI. If you will let me just speak for a few minutes on section 404.

Mr. ROE. Yes.

Ms. LI. Item: More than 150 acres of prime wetlands in the Hackensack Meadowlands will be replaced by massive development under a permit issued by the Army Corps of Engineers earlier this year.

Item: Wetlands in Absecon Inlet were proposed for destruction as part of a casino development project in Atlantic City approved by the Army Corps.

Both these projects occurred in the State of New Jersey. Both has been approved by the U.S. Army Corps of Engineers as consistent with section 404 of the Clean Water Pollution Control Act amendments. And in both these instances, other Federal agencies had strongly recommended against approval.

These instances are not isolated nor are they confined to just one State. It is estimated that approximately 56 percent of the original wetlands in the Continental United States has been lost due to development. Annually, more than 450,000 acres of wetlands are destroyed.

If any State stands to lose from the destruction of wetlands, it is New Jersey. What would New Jersey be without the wetlands and coastal areas that dot our shore and which provide the recreational activities that constitute the second largest industry in the State? Without the fish and shellfish that spawn in our wetlands? Without the flood control benefits that wetlands provide?

From northern New Jersey all the way to Cape May, wetlands are important to the residents of the State. For some, wetlands protection preserves their livelihood. For others, it represents the last remaining vestige of open space in the country's most densely populated State.

Congressional intent in 1977 may have been to protect as much wetlands as possible. Since that time, it is clear that the language of the existing act contains too many loopholes favoring development. Time and time again, the U.S. Army Corps of Engineers has found justification for nonwater dependent uses in wetlands, even in the face of strong opposition from other Federal review agencies.

The examples cited in the beginning are but only two of numerous instances where congressional intent has been disregarded. An equally destructive project is the Timber Properties development near Great Swamp National Wildlife Refuge. The corps approved a 22-acre townhouse project allowing for the filling of 8 acres of wetlands. The U.S. Fish and Wildlife Service appealed the decision to the Assistant Secretary of the Army where the decision was ultimately reaffirmed.

Although the 1977 amendments provided other Federal review agencies opportunities to object and hold up projects for more extensive review, administrative changes have greatly stymied the process. New working agreements between the corps and the Federal review agencies took away most of the clout they once had and resulted in a proliferation of the types of environmentally unsound projects cited above.

We believe that the proposed changes under H.R. 3282, the Water Quality Renewal Act, will strengthen existing provisions and provide the type of protection so urgently needed. The proposed amendments prohibit the issuance of a dredge and fill permit by the corps unless it is established that the discharge will not

have an unacceptable adverse effect on the aquatic environment and that there are no practicable alternatives which have less adverse effects.

The proposed amendments also bar the District Engineer from issuing a permit within 30 days of notification if other Federal agencies express opposition. It requires the District Engineer to explain in writing the rationale for issuance of a permit. Federal review agencies are allowed to elevate a permit to the Secretary of the Army for an ultimate decision.

We believe that with these changes, better and more sensitive decisionmaking will occur. We believe that the proposed amendments will provide protection to a rapidly disappearing resource, our Nation's wetlands, and we urge that you, Mr. Chairman, and your subcommittee endorse these measures.

Thank you.

Mr. ROE. Well, thank you very much for splendid testimony.

Of course I may be a bit prejudiced coming from the State myself, but I think you have added a great deal to our thought process and deliberations, and I think your testimony has been succinct and says something. It is not just philosophy. It speaks to specific issues. I have no questions at this point.

The gentleman from New Jersey.

The CHAIRMAN. I thank you, Mr. Chairman.

I wish to thank our witnesses and state to my colleagues on the committee that in many ways this testimony has revealed a microcosm of the whole Nation. We have heard about the ocean, the fishing, the recreational areas and how we must keep them pure for the good of the economy, as well as recreation.

We heard testimony from the gentleman from New Jersey, Mr. Roe's area, Passaic, where there is an industrial river to adequately supply the needs of the industry that is there. Meanwhile we must insure that it is kept clean, pure, and potable for the people who live there. We also heard from are representatives of an area which maybe many people don't know about in New Jersey. We had a great amount of rural areas with toxic dumps in and near the great resource known as the Pine Barrens. There are also, of course, the wetlands, as Ms. Li spoke of, and the importance of preserving them. Even if in some cases she may be talking about 8 acres, maybe many of the people from our great large States may feel that is not very much space.

But an acre is a lot of territory in our State, being such a small State as it is in size. We have more people per square mile living in New Jersey than Japan, for instance. Japan has 700 people per square mile and New Jersey has 940 people per square mile. So every bit of open land that we have is well appreciated because of the size and population of our State.

I do think that our witnesses made a statement as to what the responsibility should be of the Federal Government. I want to thank them for their testimony concerning the responsibilities of the States and local communities as well. Those officials should not be able to come to Washington and expect Washington to solve all their problems in toto.

So I wish to thank you for the work you did in a very short time. With 20,000 signatures these petitions state the views of the citizens of New Jersey and the country as well.

I want to thank you, Mr. Chairman, for being here and conducting these very important hearings. For the record, I am sure we will come out of this committee perhaps the first of the year with a bill which we and the Congress and the Nation can be proud.

Thank you.

Mr. ROE. Any further questions of the witnesses? The gentleman from Arkansas?

Mr. HAMMERSCHMIDT. Mr. Chairman, I don't have any questions but I want to join the chairman of the full committee as well as the chairman of the subcommittee in thanking this very fine panel for being here this morning and bringing us such articulate testimony. We are very appreciative.

Thank you, Mr. Chairman.

Mr. ROE. Thank you. We want to thank you for your very excellent testimony and certainly will give every consideration to the points you have raised. We appreciate your being with us this morning.

Our next witness this morning is Mr. Andrew Holtan, who represents the National Environmental Training Association.

Mr. Holtan, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT PREPARED AND SUBMITTED ON BEHALF OF THE NATIONAL ENVIRONMENTAL TRAINING ASSOCIATION

INTRODUCTION

This testimony is to express the support of the membership of the National Environmental Training Association (NETA) regarding the overall reauthorization of the Clean Water Act. NETA strongly supports continued funding at no less than fiscal year 1982 levels for the following provisions: Operator training as authorized by sections 104(g)(1) and 104(u)(2); Grants for Training and Research Fellowships as authorized by sections 104(g)(3) and 104(u)(1); tne Training Grants, Contracts and Scholarships as authorized by sections 109, 110, 111 and 112.

A competent environmental work force is absolutely essential in order to accurately assess what levels of controls are necessary and to determine the best means of attaining our environmental quality goals. Our Federal, state, county, and local regulatory staff must be well trained to deal with these questions. As our recent experiences with hazardous wastes have clearly demonstrated, it is much cheaper to control pollutants than it is to clean up after the fact. We must know enough about the state-of-the-art to be able to design present control programs and to project future environmental impacts.

Training is also the key to maximizing the impact of billions of tax dollars we have spent and will spend on environmental controls. The designers and operators of pollution abatement facilities must be competent. They must be able to construct and operate plants which are cost effective. Only competent operators can save money on operating costs such as reduced energy needs through the proper operation and maintenance of equipment, reduced chemical cost through proper calculation and testing, and finally through reduced enforcement at all governmental levels through increased plant compliance.

NETA is the only national nonprofit organization dedicated exclusively to environmental training. NETA's membership encompasses all but one of the 50 states and represents the principal training contact and training manager for each and every state. The goals and objectives of the Association are to develop and maintain a competent environmental workforce through education and training.

Although NETA is concerned with all sectors of environmental training, this testimony will concentrate on water quality and wastewater treatment. The urgency

for training and the necessity for training applies equally to the other areas of environmental training (air, solid waste, drinking water, toxic and hazardous wastes, noise, etc.).

PROBLEM

Our nation is facing a tremendous challenge for the 1980's. We are searching for ways to cope with unemployment, deal with a troubled economy, care for our elderly and maintain an acceptable environmental quality.

As our elected legislators you must balance the nation's resources to deal with these problems. Our major concern at this hearing is to address the issue of maintaining an acceptable environmental quality. The GAO publication "Environmental Protection Agenda for the 1980's" poses the three general questions:

What levels of control are needed?

How do we balance environmental protection with other equally desirable goals?

How do we maximize the impact of the billions of dollars spent on environmental controls?

For almost a decade now we have invested billions of public tax dollars in wastewater treatment facilities. The EPA 1982 Needs Survey estimates that the backlog of current needs for wastewater treatment and interceptor sewers will cost an additional $35.4 billion. The projected total for existing growth facilities to the year 2000 will total $57.3 billion.

Clearly we have invested tremendous financial resources in water quality facilities. By contrast our investment in training to develop a competent environmental workforce to operate and maintain these facilities has been negligible.

Training is a significant factor in balancing environmental protection with equally desirable goals in that more can be done with less through improved productivity and cost effectiveness. Training is also a major contributor to maximizing the impact of the dollars spent on environmental controls. Competent staff improve compliance and reduce enforcement costs, reduce chemical and electrical operation costs and prolong the life of equipment through proper O & M.

The transition from primary wastewater treatment to secondary treatment represented a quantum leap in technology for which the workforce was ill prepared. Despite the tremendous investment of public tax revenues in the construction of highly technical wastewater treatment facilities, a 1981 GAO study reported that over 87% of the privately owned treatment plants operate improperly and that 31% are in serious violation of NPDES permit limitations. In many cases, permit limits were exceeded by 100 percent (1000 percent in some cases) often for periods exceeding one year.

A report in 1980 by Hegg et al indentified the top three factors responsible for poor plant perfomance as:

1. Failure to apply treatment concepts;
2. Failure to understand treatment concepts;
3. Improper advice and guidance from advisors.

The International Joint Commission on the Assessment of Human Health Effects of Great Lakes Water Quality reported that "optional functioning" of wastewater treatment plants will require improved plant operator training.

The need for training is further substantiated when the demand and supply of qualified and competent environmental work force is examined. At present construction rates, an estimated 3000 additional environmental works will be needed each year as projected by the draft copy of the 1990's Construction Grants Strategy Report. A 1980 Report by the American Academy of Environmental Engineers demonstrated how critical the problem of an inadquate work force is. The Academy's report showed a reduction in the number of graduates with an environmental degree and a reduction in the number of advanced degree candidates.

The ramifications are far reaching, not only is there s very limited supply of advanced degree graduates to continue the development of an environmental work force, but the limited supply of existing workers results in aggressive competition for the most competent. Because salary ranges are greater in the private sector and the Federal government, the states, counties, and local governments must settle for individuals less prepared to effectively deal with environmental challenges. As the 1980 GAO study of 140 water systems revealed there are a lack of funds and a lack of qualified personnel at state and local levels.

The result is that state and local governments are the training ground for the Federal government and private sector and have an even greater need for training to develop a competent environmental work force. Few will be able to take a responsible position as they attempt to deal with inflation and significant reductions in all

areas of Federal financial assistance. The nesessity for training is intensified when staff and budget are extremely limited. Under these conditions employers such as local governments cannot afford to take the time and money to correct mistakes or to increase enforcement activities.

The supply of competent operating staff for treatment facilities is equally overtaxed. As previously noted, the two top factors responsible for poor plant performance are failure to understand and apply treatment concepts. Cleearly there is a significant demand for developing the competency and skills necessary to properly operate and maintain these sophisticated, highly technical treatment facilities effectively.

In these times of sevère economic constraints the emphasis on training is good business and represents the positive side of enforcement. Enforcement without assistance is counterproductive. The offer of training in concert with enforcement promotes cooperation and compliance.

UPDATE ON TRAINING

Tremendous advances have been made in the field of environmental training and technical asssitance. The U.S. EPA established extensive support services for technical assistance and training to include technical guidance, direct training and financial support for establishing local environmental training programs. The U.S. EPA National Training and Operational Technology Center (NTOTC) was established to disseminate this information, make training resources available, and coordinate training resources to minimize duplication of effort and maximize limited training funds. This responsible position has however deteriorated. Since 1973, 72 percent of the expenditures for O and M training have been rescinded and the staff in this area reduced to less than one in eanh of 10 regional sections and a handful at the Washington Office. The NROTC has been completely eliminated.

With the guidance and assistance of U.S. EPA, State governments, academic institutions and associations established training programs for the environmental work force. Few programs were, however, established as self-sufficient programs. Many depended wholly or, in part, on training resources such as manuals and financial assistance from the U.S. EPA.

In 1981 the U.S. Congress refused to accept the position that EPA's role in environmental training was finished. The Congressional add on funds for fiscal year 1982 are now in place and onsite technical assistance is being provided to teatment facilities which are not in compliance with operating standards. Although it is too early to assess the effectiveness of this effort one thing is clear. The State regulatory agencies are cooperating with the 109b Training Centers (Training facilities constructed with funds from section 109b PL92500) who offer assistance in obtaining compliance and bring their own finances. The ties and relationships established in this effort will in many cases carry on beyond the term of this project.

There are however serious problems with the process of making grant awards. There were no provisions for evaluating the effectiveness of the training funds. Because of the disruption in the national training network, the funds were in some cases awardedd to organizations who had no record of environmental trainging. Finally, there was still no commitment to formulating a National Plan to provide for the development of a competent environmental workforce.

In 1982 Congress again refuted EPA's position that the national responsibility for development of a competent environmental workforce is complete. The experience of allocating the fiscal year 1982 funds resulted in significant improvements in the allocation of fiscal year 1983 funds. Funds were directed to conducting an evaluation of the fiscal year 1982 Activities and to undertake the initial activities necessary to pave the way for the development of a National Plan to develop a competent environmental workforce. Also, for the first time environmental training funds will be awarded to all states. State regulatory agencies will become aware once again of the need for and benefits of training a competent environmental workforce and ties with the 109b Training Centers have been reviewed. The drawbacks of this year's approach are the constant change in how and to whom the funds should be allocated are confusing both the states and the 109b training centers. Neither knows what to expect or to plan for in the coming year. In short, we still need a National Plan. It is imperative that funds for fiscal year 1983 be appropriated to strengthen the regulatory—training ties and to continue the process of developing a National Plan.

SUCCESSES

Everyone professes to acknowledge training as a necessary and critical entity. Private industry has long recognized that training is a cost effective activity. How cost effective? The U.S. EPA Office of State and Local Manpower Development Branch published a report in 1973 which stated that every dollar invested in training results in a savings of $91.

The training and development of a competent operating staff can reduce operating expenses in the following ways:

Proper operation and maintenance of equipment reduces costly repairs and replacement as well as reducing energy (electrical) costs.

Skills in computation, testing, and analysis reduce overdosage of costly chemicals.

Proper operation and maintenance improve compliance thereby reducing costly enforcement action at all levels of government as well as reducing the need for reaction to enforcement orders.

The end result is a more cost effective pollution abatement effort.

Training can often represent the difference between compliance and non-compliance. The January 1981 edition of the journal "Water/Engineering and Management" reported on a wastewater treatment facility in Durham, N.C. which consistently exceeded the NPDES permit limitations. After attending an EPA workshop on "Activated Sludge Process Control" sponsored and instructed by the NTOTC, the facility's compliance with effluent requirements improved from 61 percent to 90 percent of the time. Consider the cost savings resulting from a reduction in enforcement, compliance monitoring, and efforts expended to react to enforcement actions.

SUPPORT

The need for training is recognized and supported by all sectors of the country. The Water Pollution Control Federation (WPCF) in 1979 published the article "Operation and Maintenance of Water Pollution Control Facilities: A White Paper" which included forty references to the need for and recommendations for training. The National Office of NETA has received numerous copies of letters stating concern and support for training ranging from the Personnel Advancement Committee of the N.W. WPCF to the "grass roots" membership of NETA.

Other national organizations such as the American Clean Water Association, the National Demonstration Water Project, the Association of Metropolitan Sewerage Agencies, the American Academy of Environmental Engineers, the National Academy of Sciences has expressed support for training and development of an environmental work force.

Despite the critical role played by well trained operators for the past several years, EPA has not requested the Congress to appropriate training funds. Fortunately, Congress has wisely refuted EPA's decision for the past two years and allocated $2.6 million for water quality training purposes.

Congress is urged to continue to take the lead in establishing environmental training as a national priority and in demonstrating a commitment to environmental training by reauthorizing the sections of the Clean Water Act which provide for training.

As stated previously, the NETA is equally concerned with financial and technical assistance to the other areas of the environmental training. Congress is strongly encouraged to review the specific issues in this testimony and apply the concepts to the environmental training for drinking water, solid waste, toxic materials, and hazardous wastes, air quality, noise, etc.

The NETA is thankful for the opportunity to provide this testimony and respectfully request that Congress consider our concerns and assume a responsible position in developing a competent and qualified environmental work force.

REFERENCES

Report by the Subcommittee on Oversight and Review of the Committee on Public Works and Transportation. U.S House of Representatives, December, 1980 (96-71).

Report by the Comptroller of the United States: Costly Wastewater Treatment Plants Fail to Perform as Expected. November 14, 1980, CED-81-9 United States Accounting Office.

Hegg, B.,A., et. al: Evaluation of O & M Factors Limiting Wastewater Plant Performance. Journal of Pollution Engineering.

The International Joint Commission's Committee on Assessment of Human Health Effects of Great Lakes Water Quality, 1980.

Mr. ROE. Please proceed.

TESTIMONY OF ANDREW A. HOLTAN, CHAIRMAN, GOVERNMENTAL AFFAIRS COMMITTEE, NATIONAL ENVIRONMENTAL TRAINING ASSOCIATION

Mr. HOLTAN. Good morning, Mr. Chairman. I certainly thank you. With any luck at all I will be responsible for getting you out to lunch earlier than 12 o'clock. I will keep my comments brief and paraphrase a lot of the statements submitted to you.

Mr. Chairman and members of the committee, I would like to thank you for this opportunity to provide testimony this morning. My name is Andrew A. Holtan. I am the training manager with the State of Maryland Health Department. However, I am testifying today on behalf of the National Environmental Training Association.

NETA is a national not-for-profit organization supported by membership dues. This testimony is to express the support of the membership of NETA regarding the overall reauthorization of the Clean Water Act. NETA strongly supports the continued funding at no less than fiscal year 1982 levels for the following provisions.

Operator training as authorized by sections 104(g)(1) and 104(u)(2), grants for training and research fellowships as authorized by sections 104(g)(3) and 104(u)(1); and training grants, contracts, and scholarships as authorized by sections 109, 110, 111, and 112.

A competent environmental work force is absolutely essential in order to accurately assess what levels of controls are necessary and to determine the best means of attaining our environmental quality goals. Our Federal, State, country, and local regulatory staff must be well trained to deal with these questions. As our recent experiences with hazardous wastes have clearly demonstrated, it is much cheaper to control pollutants than it is to clean up after the fact. We must know enough about the state-of-the-art to be able to design present control programs and to project future environmental impacts.

Training is also the key to maximizing the impact of billions of tax dollars we have spent and will spend on environmental controls. The designers and operators of pollution abatement facilities must be competent. They must be able to construct and operate plants which are cost effective. Only competent operators can save money on operating costs such as reduced energy needs through the proper operation and maintenance of equipment, reduced chemical cost through proper calculation and testing, and finally through reduced enforcement at all governmental levels through increased plant compliance.

NETA is the only national nonprofit organization dedicated exclusively to environmental training. NETA's membership encompasses all but 1 of the 50 States and represents the principal training contact and training manager for each and every State. The goals and objectives of the association are to develop and maintain a competent environmental work force through education and training.

Although NETA is concerned with all sectors of environmental training, this testimony will concentrate on water quality and

wastewater treatment. The urgency for training and the necessity for training applies equally to the other areas of environmental training—air, solid waste, drinking water, toxic and hazardous wastes, noise, et cetera).

Problem. Our Nation is facing a tremendous challenge for the 1980's. We are searching for ways to cope with unemployment, deal with a troubled economy, care for our elderly and maintain an acceptable environmental quality.

As our elected legislators, you must balance the Nation's resources to deal with these problems. Our major concern at this hearing is to address the issue of maintaining an acceptable environmental quality. The GAO publication Environmental Protection Agenda for the 1980's poses the three general questions:

What levels of control are needed?

How do we balance environmental protection with other equally desirable goals?

How do we maximize the impact of the billions of dollars spent on environmental controls?

For almost a decade now we have invested billions of public tax dollars in wastewater treatment facilities. The EPA 1982 needs survey estimates that the backlog of current needs for wastewater treatment and interceptor sewers will cost an additional $35.4 billion. The projected total for existing growth facilities to the year 2000 will total $57.3 billion.

Clearly we have invested tremendous financial resources in water quality facilities. By contrast our investment in training to develop a competent environmental work force to operate and maintain these facilities has been negligible.

Training is a significant factor in balancing environmental protection with equally desirable goals in that more can be done with less through improved productivity and cost-effectiveness. Training is also a major contributor to maximizing the impact of the dollars spent on environmental controls. Competent staff improve compliance and reduce enforcement costs, reduce chemical and electrical operation costs and prolong the life of equipment through proper O&M.

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A report in 1980 by "Hegg et al." identified the top three factors responsible for poor plant performance as:

One, failure to apply treatment concepts;

Two, failure to understand treatment concepts;

Three, improper advice and guidance from advisers.

Because salary ranges are greater in the private sector and the Federal Government, the States, counties, and local governments must settle for individuals less prepared to effectively deal with en-

vironmental challenges. As the 1980 GAO study of 140 water systems revealed there are a lack of funds and a lack of qualified personnel at State and local levels.

The result is that State and local governments are the training ground for the Federal Government and private sector and have an even greater need for training to develop a competent environmental work force. Few will be able to take a responsible position as they attempt to deal with inflation and significant reductions in all areas of Federal financial assistance. The necessity for training is intensified when staff and budget are extremely limited. Under these conditions employers such as local governments cannot afford to take the time and money to correct mistakes or to increase enforcement activities.

The supply of competent operating staff for treatment facilities is equally overtaxed. As previously noted, the two top factors responsible for poor plant performance are failure to understand and apply treatment concepts. Clearly there is a significant demand for developing the competency and skills necessary to properly operate and maintain these sophisticated, highly technical treatment facilities effectively.

In these times of severe economic constraints the emphasis on training is good business and represents the positive side of enforcement. Enforcement without assistance is counterproductive. The offer of training in concert with enforcement promotes cooperation and compliance. While everyone professes to acknowledge training as a necessary and critical entity, few would deny the fact that training is necessary. But how necessary? How cost effective is it?

The USEPA Office of State and Local Manpower Development Branch published a report in 1973 which stated that every dollar invested in training results in a savings of $91.

The training and development of a competent operating staff can reduce operating expenses in the following ways:

Proper operation and maintenance of equipment reduces costly repairs and replacement as well as reducing energy—electrical—costs.

Skills in computation, testing, and analysis reduce overdosage of costly chemicals.

Proper operation and maintenance improve compliance thereby reducing costly enforcement action at all levels of government as well as reducing the need for reaction to enforcement orders.

Congress is urged to continue to take the lead in establishing environmental training as a national priority and in demonstrating a commitment to environmental training by reauthorizing the sections of the Clean Water Act which provide for training.

The NETA is thankful for the opportunity to provide this testimony, and respectfully request that Congress consider our concerns and assume a responsible position in developing a competent and qualified environmental work force.

Mr. ROE. Thank you for your testimony. Could you give us a little bit more of a rundown on the National Environmental Training Association? Does it represent most of the States?

Mr. HOLTAN. We have members in 49 States. They are individuals that are employed, such as myself, by government at all

levels, Federal, State, and county, who have a training responsibility, a training role. Membership also includes academic institutions that provide training as well as the private sector which is involved in providing training for a fee for a service.

Also, we have a large number of our membership that are full-time operators, but recognize that they have a part-time training responsibility to train their staff. We number about 600. Those 600 individuals are by and large the key figures in each and every State that are involved with training.

Mr. ROE. Has your organization put together any summary that could give us some more details as far as what you are doing? In other words, I am interested in how effective are we? What do we need? What do you see down the road? I happen to think that your testimony is extremely important because as you indicate, the implementation depends upon people implementing the program.

Mr. HOLTAN. Absolutely.

Mr. ROE. Having said that it would be helpful to us if you could summarize in added testimony how effective is it, what more should we be doing? Are we doing enough in that area?

Mr. HOLTAN. We are in the midst right now of doing a national survey of every State to determine the state of the art of training.

Mr. ROE. When will that be available do you think?

Mr. HOLTAN. We will be tabulating the results the end of October, presenting them to EPA in November. And then meeting with individuals primarily from the appropriate Senate subcommittee to look at these findings, and from that, to prepare a final report and draft a national plan.

The reason for this testimony is to keep those avenues for channeling training funds open and viable. We can provide I would think by January you with that.

Mr. ROE. Would you plan on that?

Mr. HOLTAN. Yes, sir.

Mr. ROE. What the committee would like to have is a follow-up from you as to what your analyses and review indicates as far as implementation is concerned. That could be extremely helpful. Where do we have shortages, what should we be doing in that direction. I think it would be very helpful to the committee, so we will be calling you back to make that presentation.

Mr. HOLTAN. Fine.

Mr. ROE. Any further questions? The gentleman from Nebraska.

Mr. DAUB. I thank the chairman and just want to say more than a question to you, Mr. Holtan, to make a statement of support for your position and the points of view that are made in the testimony, which I read. I believe if you go back and check the record of this committee, you will find--you may have already done so—almost an unblemished record in terms of this committee's support for the Clean Water Act's training and educational provisions.

In virtually every annual report to the Budget Committee that I have examined, this committee has repeatedly pointed out the shortcomings of budget proposals which have sought to inadequately fund programs you testified in support of today. So I want you to know that I have every reason to believe that this kind of support will continue, and I hope together we can give these matters very high priority because they deserve it.

Mr. HOLTAN. Thank you. The committee is to be applauded for their position.

Mr. ROE. Any further questions? We want to thank the gentleman very much for his testimony. We look to hear from you further toward the end of the year. Thank you very much.

Mr. HOLTAN. Thank you.

Mr. ROE. The committee will stand recessed until tomorrow at 9:30. We will meet in room 2253.

Thank you very much, ladies and gentlemen.

[Whereupon, at 11:45 a.m., the subcommittee was recessed, to reconvene at 9:30 a.m., Thursday, October 20, 1983.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

THURSDAY, OCTOBER 20, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to call, at 9:30 a.m., in room 2253, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen. The hearings will continue on our clean water bill.

We have with us this morning as our first witness, representing the National Association of Manufacturers, Mr. Harold Jensen, who is the director of Energy Conservation and Environmental Control of the Warner Lambert Co. in Morris Plains, N.J. He is a very distinguished representative.

I am happy to have you with us this morning, Harold. If you would identify for the record your colleagues, then we can continue on with your testimony.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY
ON BEHALF OF
NATIONAL ASSOCIATION OF MANUFACTURERS
PRESENTED BY HAROLD JENSEN, DIRECTOR
ENERGY CONSERVATION AND ENVIRONMENTAL CONTROL
WARNER-LAMBERT COMPANY
BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
U. S. HOUSE OF REPRESENTATIVES
OCTOBER 20, 1983

Introduction

I am Harold L. Jensen, Director of Energy Conservation and Environmental Control for Warner-Lambert Company, Morris Plains, New Jersey. I am accompanied by Louis C. Gilde, Director of Environmental Programs, Campbell Soup Company, and Daniel W. Cannon, Director of Environmental Affairs, National Association of Manufacturers.

This testimony on Clean Water Act Reauthorization is presented on behalf of the National Association of Manufacturers (NAM), a voluntary association of more than 13,000 enterprises engaged in manufacturing in the United States. Some 80 per cent of these enterprises are in the category of "small business." NAM is affiliated with an additional 158,000 companies through its Associations Council and the National Industrial Council. Many thousands

of these enterprises are direct and indirect dischargers of wastewater into the navigable waters of the United States, and consequently are substantially impacted by the provisions of the Clean Water Act. They greatly appreciate this opportunity to present their views on reauthorization of the Clean Water Act to this distinguished Subcommittee on Water Resources of the U.S. House of Representatives.

Water and Industry

Water is indispensable in the manufacture of the goods which provide us with our high standard of living. Industry uses more than 15 trillion gallons of water per year. However, this is not consumptive use. Some 93 per cent of the water used is returned to receiving streams, some of it with better quality than when it was withdrawn. About two-thirds of the water is used for cooling purposes only and does not come into contact with polluting substances involved in the manufacturing process. Over recent years, industry has increased its production without a corresponding increase in water withdrawals by adoption of re-use and recycling techniques. Manufacturing is the highest economic use of water because of the great value added to raw materials through manufacturing. By contrast, water use for irrigation in agriculture lends a lesser degree of value, is highly polluting, and consumes about 80 per cent of the water used.

Water is not a free commodity. The price of the right

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to use water is incorporated in the purchase price of the land to which the right is attached. There are pumping and labor costs and frequently there are treatment costs to upgrade the raw water to the quality needed for a particular manufacturing process. Costs of water use and water pollution control are incorporated in the price of the product or else the producer will not remain in business very long. Since water is such a pervasive element of the whole productive system, unwarranted costs imposed on the use of water impact adversely on every member of society. The manufacturer acts as a trustee for the consumer when he resists proposals that would impose excessive costs on water use without commensurate environmental benefits. It is the responsibility of the Congress to exercise the utmost wisdom in tailoring the nation's laws so as to achieve national objectives in ways that avoid excessive costs.

We believe that the Clean Water Act provides a good framework for a sound national water pollution control program that meets such criteria. However, no law is perfect. We believe there are some imperfections in the Clean Water Act which could be corrected by the Congress in the process of reauthorization and we respectfully urge the Subcommittee's consideration of the changes discussed below.

Pretreatment

Section 307(b) of the Act requires the EPA Administrator to promulgate "pretreatment standards for

works. When proposing or promulgating introduction of pollutants into treatment works... which are publicly owned for those pollutants which are determined not to be susceptible to treatment by such treatment works or which would interfere with the operation of such treatment any pretreatment standard under this section, the Administrator shall designate the category or categories of sources to which such standard shall apply."

The result of these rigid, inflexible statutory provisions is the imposition of uniform national standards on a myriad of infinitely varying local situations. EPA has indicated that there may be as many as 60,000 connections to publicly owned treatment works. Yet, the law does not allow one iota of variation in its application, even where the standard required may be completely unnecessary for protection of the treatment plant, the sludge, or the receiving water.

The result of this rigid law has been a great deal of confusion and uncertainty in its application. In an effort to bring some reality into this unrealistic law, the Fundamentally Different Factors Variable has been used. The Summer 1983 issue of The Weston Way, published by Roy R. Weston, Inc., describes the Fundamentally Different Factors Variance as "a plant-by-plant adjustment to the limits proposed in the Pretreatment Categorical Standards. Variances will be allowed only if the industry can show that aspects of its operation are fundamentally different than

those considered by the EPA when they developed these limits. Items relating to the nature and volume of the raw wasteload, energy requirements, process modifications, and compliance costs are acceptable items to consider. Factors such as allotted time for compliance, assertion without documentation that a given technology cannot achieve the standards, the ability to pay, and arguments concerning the impact of a discharge on the water quality of a POTW are not acceptable ..." Unfortunately, the U.S. Court of Appeals for the Third Circuit held on September 20, 1983 in National Association of Metal Finishes v. EPA that EPA does not have legal authority to grant Fundamentally Different Factors Variances. Consequently, we are left with rigidity and reality. We urgently plead with the Committee to introduce some flexibility into the pretreatment requirements of the Clean Water Act.

Congress anticipated that each industrial user of public sewers, if regulated at all, would fall into one category and have one compliance deadline. However, EPA has since issued several categorical standards that are much more process-specific than industry-specific. It is now apparent that a complex industrial plant using a variety of manufacturing processes is very likely to be regulated under 2 or more categories. Such a plant is called an integrated facility. Integrated facilities are forced by the current law either to undertake a series of compliance schedule, which is already marginally adequate. Many integrated

facilities are also denied the option of combining and co-treating similar wastewaters from different categories, since they cannot afford to wait for promulgation of the last applicable pre- treatment standard.

Many of our members' manufacturing plants are integrated facilities that fully intend to comply with Clean Water standards. At the same time, we believe that no integrated facility should be forced to make a major investment in treatment until all of the pretreatment standards applicable to that facility have been promulgated in final form.

° Integrated facilities are fundamentally different from facilities with only one type of wastewater.

° The current law imposes an unreasonable burden on integrated facilities. That burden may be unintentional.

° In order to afford integrated facilities equitable treatment under law, the pretreatment provisions of the Act should be amended to:

- Include "integrated facilities" in the list of regulated categories (Section 307(b)(3)).
- Make the compliance deadline for an integrated facility 3 years after promulgation of the last categorical standard applicable to that facility. (Section 307(b)(3).)

An industrial discharger must comply with a specific categorical pretreatment standard within 3 years of its promulgation date. The current law accommodates plants where

only one category applies, but it creates problems for plants where two or more categories apply. It is generally more cost-effective to treat combined waste streams in a single treatment unit rather than to segregate these streams and treat each separately. The current approach discourages combined treatment in multi-category plants because the compliance clock begins running when the first categorical standard is promulgated. Since the categorical standards are being issued sequentially, a discharger must begin to plan, design, and construct treatment facilities before knowing the final requirements of the second categorical standard, the third, and so on. The subsequent standards may change the overall requirements that the discharger will have to meet and cause substantial monies to be misspent in pursuit of a moving target.

A related problem is that the sources of wastewater in different categories are not readily segregated from each other in a typical manufacturing plant. Most older plants were designed and modified without knowledge of future regulatory schemes. Wastewater is generated at dozens of unrelated points, often in combination with other wastewaters of a different nature. The current approach of using a combined waste stream formula ignores the fact that individual streams are often unmeasurable and that many streams are already combined as the result of plant configuration.

The solution to this problem is to start the deadline

clock running when the last pretreatment guideline applicable to the facility is issued. This can be accomplished in one of two ways:

° Congress could authorize a category of pretreatment standards called "integrated facilities" for BAT level of pretreatment requirements. This would allow EPA to issue an integrated category pretreatment guideline (which will include two or more combined pretreatment guidelines).

° Make compliance deadlines 3 years after the last applicable guideline to the integrated facility is promulgated.

Either of these two approaches would start the compliance schedules running at the same time and allow companies to plan compliance in the most cost-effective method possible.

Innovative Technology

We would like to note that Section 301(k) of the Act provides incentives for direct dischargers by allowing compliance date extensions for those using innovative technology. We believe that Congress should provide the same incentives for indirect dischargers to publicly owned treatment works by amending Section 301(k) or Section 307.

Water Quality Standards

We do not believe that designated uses should be frozen as of any particular date. This would assume that all classifications are proper now; this is not a correct

assumption. EPA's proposed revisions to existing water quality regulations appear to provide greater flexibility for maintaining water quality conditions consistent with practical limitations and economic development. Water quality decisions are best made by the states with full public participation in the decision-making process. Under present regulations, some streams are governed by water quality standards that are impossible of attainment. A greater role for the states would provide needed flexibility and recognition of local and regional realities. We are in favor of improving and maintaining stream quality conditions to the greatest extent consistent with economic and physical limitations. Thus, we believe that, once a use has been attained, it should be changed only under highly unusual circumstances, but the door should be kept open for changes when imperatively needed. It should be kept in mind that new manufacturing facilities will be using state of the art pollution abatement technology, and the stream quality will probably not be significantly diminished by siting of modern facilities in instances where industrial use would be made possible.

If industry's options for installing new facilities are unduly limited by stringent water quality policies, there will be a tendency to prolong the life of older facilities. These older facilities, even if retrofitted, will probably discharge more pollutants into the total environment than new facilities in which the most modern pollution abatement

procedures are designed. The Congress and EPA should be continually aware that overregulation in one environmental area can lead to an overall decrease in environmental quality by increasing or prolonging pollution elsewhere.

Bubble Concept

In order to make clear that the use of the bubble concept is authorized under the Clean Water Act, Section 301(e) should be amended to provide that effluent limitations are to be applied to each point source or group of point sources of discharge, provided that water quality is protected.

Best Available Technology Economically Achievable (BAT)

BAT limitations should be required only where there is a significant toxics problem. "Significant toxics problems" should be defined as those where BPT standards or limitations are not providing sufficient protection to the receiving waters and where further abatement would have a measurable effect on receiving waters. Situations where a pollutant is present in the effluent solely as a result of its presence in intake waters should not be considered a significant toxics problem. The legislation should provide flexibility so that States and localities can administer reasonable programs.

BPT standards should not be elevated so as to equal BAT or require zero discharge.

BAT requirements for nonconventional pollutants should not be applied unless water quality demands it.

Non-Point Sources

Uncontrolled non-point source pollution continues to present a major, nationwide water quality problem. This message is emphasized in the 1976 report of the National Commission on Water Quality, and more recently in 1981 report of the House Investigations and Oversight Subcommittee of the House Committee on Public Works and Transportation. Very recently, it has been confirmed by six of the ten EPA Regional Offices. The 1981 report notes the attainment of the Act's goals "is highly dependent on the degree to which non-point source pollution can be controlled."

Section 208 of the 1978 act provided federal grants to state and local units of government to develop programs to control, among other things, non-point source pollution. To date, most states have developed programs for implementation of these programs at the state and local level. However, implementation of these programs has local government fiscal constraints.

NAM Recommendations

NAM's members remain committed to making non-point source control programs work at the state level. Consistent with overall budgetary constraints, NAM supports continued provision of federal funding mechanisms to implement state

and local source programs.

NAM believes that any program to deal with the non-point source problem should be consistent with the following principles:

1. New efforts to deal with non-point source pollution should concentrate first on identified problems with attainable solutions;

2. Primary responsibility for developing and implementing non-point source controls should continue to reside at the state and local levels;

3. States should be afforded broad flexibility in developing the types of non-point source programs that address the particular problems in each state;

4. The federal role in non-point source pollution control is best carried out by providing technical and financial assistance to the states;

5. Positive initiatives, rather than financial sanctions against non-point sources, will have the greatest impact on improving water quality; and

6. Completed and approved Section 208 plans should serve as the starting point for additional efforts to control non-point sources pollution.

Conclusion

The Congress has an opportunity in the course of reauthorizing the Clean Water Act to make a number of changes that would facilitate the achievement of better water quality in the country. The changes we have suggested would simplify and streamline the law, giving it greater flexibility and creating a true Federal-State partnership. We support the extension of the Act for two fiscal years after which Congress would review the program. We question the wisdom of reauthorizing the Act for four or five fiscal years.

Mr. ROE. Please proceed.

TESTIMONY OF HAROLD JENSEN, DIRECTOR OF ENERGY CONSERVATION AND ENVIRONMENTAL CONTROL, WARNER-LAMBERT CO., AND CHAIRMAN OF THE NATIONAL ASSOCIATION OF MANUFACTURERS' WATER TASK FORCE, ACCOMPANIED BY LOUIS GILDE, DIRECTOR OF ENVIRONMENTAL PROGRAMS, CAMPBELL SOUP CO., AND DANIEL W. CANNON, DIRECTOR OF ENVIRONMENTAL AFFAIRS, NATIONAL ASSOCIATION OF MANUFACTURERS

Mr. JENSEN. Very good. Thank you.

On my right is Mr. Louis Gilde, director of environmental programs at the Campbell Soup Co., also of New Jersey.

Mr. ROE. Very fine soup, by the way.

Mr. JENSEN. And Daniel W. Cannon is on my left, director of Environmental Affairs of the National Association of Manufacturers.

Mr. ROE. OK. You go ahead with your testimony. We have it in full. I think it is not that long and I think it is pretty important because you represent the industry. So I think you ought to go with the whole testimony.

Mr. JENSEN. Thank you very much.

This testimony on Clean Water Act reauthorization is presented on behalf of the National Association of Manufacturers [NAM], a voluntary association of more than 13,000 enterprises engaged in manufacturing in the United States.

Some 80 percent of these enterprises are in the category of small business. NAM is affiliated with an additional 158,000 companies through its associations council and the National Industrial Council.

Many thousands of these enterprises are direct and indirect dischargers of wastewater into the navigable waters of the United States, and consequently are substantially impacted by the provisions of the Clean Water Act. They greatly appreciate this opportunity to present their views on reauthorization of the Clean Water Act to this distinguished Subcommittee on Water Resources of the U.S. House of Representatives.

When I testified on August 2 before your hearing, I presented to you the NAM position statement so that it is in the record now.

Water is indispensable in the manufacture of the goods which provide us with our high standard of living. Industry uses more than 15 trillion gallons of water per year. However, this is not consumptive use. Some 93 percent of the water used is returned to receiving streams, some of it with better quality than when it was withdrawn. About two-thirds of the water is used for cooling purposes only and does not come into contact with polluting substances involved in the manufacturing process.

Over recent years, industry has increased its production without a corresponding increase in water withdrawals by adoption of reuse and recycling techniques. Manufacturing is the highest economic use of water because of the great value added to raw materials through manufacturing. By contrast, water use for irrigation in agriculture lends a lesser degree of value, is highly polluting, and consumes about 80 percent of the water used.

Water is not a free commodity. The price of the right to use water is incorporated in the purchase price of the land to which the right is attached. There are pumping and labor costs and frequently there are treatment costs to upgrade the raw water to the quality needed for a particular manufacturing process.

Costs of water use and water pollution control are incorporated in the price of the product or else the producer will not remain in business very long. Since water is such a pervasive element of the whole productive system, unwarranted costs imposed on the use of water impact adversely on every member of society.

The manufacturer acts as a trustee for the consumer when he resists proposals that would impose excessive costs on water use without commensurate environmental benefits. It is the responsibility of the Congress to exercise the utmost wisdom in tailoring the Nation's laws so as to achieve national objectives in ways that avoid excessive costs.

We believe that the Clean Water Act provides a good framework for a sound national water pollution control program that meets such criteria. However, no law is perfect. We believe there are some imperfections in the Clean Water Act which could be corrected by the Congress in the process of reauthorization and we respectfully urge the subcommittee's consideration of the changes discussed below.

I will depart from my text for a little bit just to summarize our positions on the area of pretreatment.

The EPA has chosen to write the pretreatment requirement regulations more on a business-by-business or process-by-process mode rather than industrywide. This has resulted in a number of regulations coming out over a phased time period and these various regulations apply to manufacturing plants in different ways.

The result is that more than one regulation may apply to any one particular manufacturing plant. We call these integrated facilities or a facility that is under more than one regulation.

As a result, there will be a series of regulations coming into effect over a phased time period and the facility is faced with the responsibility of installing pretreatment facilities to meet phased regulations. This is quite cumbersome for the industry and they are placed in a position of constructing several different treatment processes. We are guessing what the final regulations will be to meet.

The point I am getting at is we are looking at a pretreatment requirement that has a completion date keyed in the final regulation implementation.

We also see a considerable problem in the restrictive nature of pretreatment requirements. There are some 60,000 dischargers into municipal collection systems and there is very little, essentially no room for movement to meet all these different conditions of the municipalities and the industries.

The recent judicial ruling that ruled out the fundamentally different factors criteria that EPA has put forward places industry in a very cumbersome posture in that they will in many cases not be able to meet these pretreatment requirements. Therefore, our main theme here is flexibility in the pretreatment requirements and this flexibility be placed on the local level.

We feel that the solution to these problems——

Mr. ROE. Let me interject there. When you are speaking of flexibility, I think you have to illustrate a little bit further.

Basically what you are saying is that, one, because EPA did not issue a composite of regulations and there were regulations that were issued over a period of time, that they could even be in conflict. Is that a reasonable statement?

Let's assume I was calling upon you to do pretreatment, and I think what you are saying is, we are not quarreling with the idea of pretreatment per se. What we are coming back and saying is that we might have many different elements and processes involved, and we have different sets of regulations relating to those individual processes which therefore could mess us all up because we can't really put the whole thing together unless you give us some final end that you are trying to meet and some process with which you are trying to do it. Is that a reasonable statement?

Mr. JENSEN. We are talking about two different factors here. One is the time scheduling of these regulations.

Say a facility has two or three different industry types within the same plant and one regulation is going to come out this year and another one next year and another one 2 years from now. So we are looking at a time period in which we can meet that.

Mr. ROE. So let's divide that, because I know that the fundamental issue that people in pretreatment are concerned with is the process of EPA and the time frame in putting out their regulations. We have multiple processes going on in one plant and you have been able to have the time frame to get a composite together, and to get that done in the time specified originally under the amendments in 1970 and 1971. Is that a correct statement to make?

Mr. JENSEN. Correct.

Mr. ROE. So therefore, we are really saying we have to achieve two goals. One is a solid direction in which we want to go on pretreatment versus the time to implement it. So that if I am going to be doing pretreatment in my plant, I am going to do water conservation and so forth, I have to have the whole picture to make the corporate decisions that have to be made in order to do that. Is that a reasonable statement?

Mr. JENSEN. Yes. That is with respect to the scheduling.

We are also talking about the factor of the integrating of our facilities into the municipal treatment and collection system to determine whether the pretreatment is really required or not.

The point there is that the present requirements are so rigid that there is no freedom of movement to say that the pretreatment is really technically not required within the city because it is not going to improve the quality of the sludge, the quality of the receiving water and it is not going to upset the treatment process.

Mr. ROE. You see, I think that is the point you have to make. There are good guys and bad guys and black hats and white hats.

I think what you have to get on the record is the facts that we are dealing with here, and they are coming back and saying, nobody wants to do treatment for treatment's sake. That is a waste of money. That is not going to solve the problem we are trying to solve in the first place.

But the committee is fundamentally concerned with two issues in this particular pretreatment. One, do we remove the pollutants beforehand, which is the purpose of pretreatment? Do we allow them to go through the system and then become cumulative in the sludge? And then we have a problem getting rid of the sludge. Those are the two basic parameters that I see.

You are coming back and saying, No. 1, we are not quarreling about pretreatment. We have to have some kind of a mechanism and a time element involved and a recognition of the composites of different systems within a particular manufacturing process that achieved the goal. And if we have rigidity of regulations and different elements of this process, then it can countervene some of the things we are trying to do to get it corrected. Or, two, it could mean that you don't have enough information to be able to build a composite system to remove these materials.

Do you see what I am trying to get at?

Mr. JENSEN. Yes.

Mr. ROE. So we are not talking about the rigidity of the individual regulation you don't want to leave the impression that you should not do pretreatment. That is not the issue you are trying to make this morning, is it?

Mr. JENSEN. That is right.

Mr. ROE. We are saying what we ought to do is get a process that is going to work and be cost effective and make some sense in a reasonable time period.

Mr. JENSEN. That is right. We are not against pretreatment. We know that we must protect the municipal treatment plant. We know we must protect the sludges that come from that. We know we must protect the receiving water. That is what the act is all about.

However, we don't feel it is appropriate to pretreat for pretreatment's sake when it is really not needed to protect those three areas.

Mr. MOODY. Would it be all right for questions on this point?

Mr. ROE. I think he is right at the heart of this issue on pretreatment, so let's go ahead if you want to ask questions.

Mr. MOODY. Thank you, Mr. Chairman.

What kind of regime would you like to see in pretreatment? I think the chairman is correct. This is a very crucial component of everything we are looking at. You described what was wrong.

Should the pretreatment be on an ad hoc basis depending on the quality of what is downstream from the plant, that is, the capacity of the receiving waters or the capacity of the plant, the use of the sludge? Should all those things be taken into account? Is that one extreme position?

How do you make these decisions on an ad hoc basis where you really have some quality, equity, and uniformity across the Nation? How would you set up a regime to make the decisions that these rigid rules don't make?

Mr. JENSEN. A municipality has an NPDES permit and that permit is a statement of the requirements for the discharge to protect the receiving waters and, therefore, the municipality then can work within the framework of that NPDES permit to meet the permit.

So you don't need to worry about what the receiving waters might take because that is already set up within it.

Mr. MOODY. But who makes the optimum decision as to whether or not, let's say, heavy metals, whether it should be taken out at the plant level or if they should be taken out at the municipal treatment level or should—in some cases someone would argue they should be allowed to be in the sludge since the sludge is destined for some use where it is not harmful.

How do you make that decision?

Mr. JENSEN. I think the municipalities can make that decision with the help of the States. We do have the pretreatment requirements to be imposed if required. This is an issue where the actual concentrations within the receiving waters, the raw waters, untreated waters coming in can be evaluated.

If it is a large municipality and it is only one person discharging heavy metals, you won't even find them in there and it would not do any disruption to the treatment process at all. I think that that could go to the municipal treatment plant.

Mr. MOODY. So you are saying it should be a municipal or system-by-system basis, not at the State level or at the Federal level.

Mr. JENSEN. That is right. The Federal level can give guidelines and your technical data about what a treatment plant basic concept, whether it is sludge or whatever, can or cannot do. But really it is between the State and the local municipality to work out these programs.

Many municipalities have been doing it for 20 years or more.

Mr. MOODY. Thank you, Mr. Chairman.

Mr. JENSEN. With respect to the time phasing, we start the clock running on the regulation for pretreatment when the last pretreatment guideline application to the facility is issued.

This can be accomplished by either of two ways. One, Congress could authorize a category of pretreatment standards called integrated facilities for BAT level of pretreatment requirements. This would allow EPA to issue an integrated category pretreatment guideline which will include two or more combined pretreatment systems or make compliance deadlines, 3 years after the last applicable guideline to the integrated facility is promulgated.

Either of these two approches would start the compliance schedules running at the same time and allow the companies to plan compliance in the most cost effective method possible.

Now a word about innovative technology. We would like to note that section 301(k) of the act provides incentives for direct dischargers by allowing compliance date extensions for those using innovative technology. We believe that Congress should provide the same incentives for indirect dischargers to publicly owned treatment works by amending section 301(k) or section 307.

Mr. ROE. Why?

Mr. JENSEN. I think it is an opportunity to test out innovative technologies. We are talking about 3-year compliance and I know from my experience in air and water systems, when you are committing yourself to meeting something in 3 years and you are trying to look at an innovative technology, you don't have 100 per-

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cent confidence that you will make that within a 3-year time period.

Mr. MOODY. How about incentive issues, the second point you have raised? You are saying the incentives that are now available to publicly owned plants should also be available to privately owned direct discharge plants. Am I reading you correctly?

Mr. JENSEN. No. It is not public/private. It is both industry's direct dischargers and indirect dischargers. There is a distinction.

Mr. MOODY. I see. It is indirect and direct.

Mr. JENSEN. Right.

Mr. MOODY. In other words, right now we allow some legal innovative technological developments for direct?

Mr. JENSEN. Industry direct.

Mr. MOODY. But we do not allow it for indirect. You are saying we should.

Mr. JENSEN. That is correct.

Mr. MOODY. Thank you.

Mr. ROE. You are talking about a uniform policy?

Mr. JENSEN. Yes.

Mr. ROE. Our experience, if I may add an aside, with some of the innovative technology leaves a great deal to be desired, to say the least, in this history of the EPA program.

Go ahead.

Mr. JENSEN. You are talking about municipal?

Mr. ROE. Yes.

Mr. JENSEN. OK.

Now a word about water quality standards. We do not believe that designated uses should be frozen as of any particular date. This is of the receiving waters. This would assume that all classifications are proper now; this is not a correct assumption.

EPA's proposed revisions to existing water quality regulations appear to provide greater flexibility for maintaining water quality conditions consistent with practical limitations and economic development. Water quality decisions are best made by the States with full public participation in the decisionmaking process.

Under present regulations, some streams are governed by water quality standards that are impossible of attainment. A greater role for the State would provide needed flexibility and recognition of local and regional realities.

We are in favor of improving and maintaining stream quality conditions to the greatest extent consistent with economic and physical limitations. Thus, we believe that, once a use has been attained, it should be changed only under highly unusual circumstances, but the door should be kept open for changes when imperatively needed.

It should be kept in mind that new manufacturing facilities will be using state of the art pollution abatement technology, and the stream quality will probably not be significantly diminished by siting of modern facilities in instances where industrial use would be made possible.

If industry's options for installing new facilities are unduly limited by stringent water quality policies, there will be a tendency to prolong the life of older facilities. These older facilities, even if retrofitted, will probably discharge more pollutants into the total en-

vironment than new facilities in which the most modern pollution abatement procedures are designed.

The Congress and EPA should be continually aware that overregulation in one environmental area can lead to an overall decrease in environmental quality by increasing or prolonging pollution elsewhere.

Now, a few words on the bubble concept. In order to make clear that the use of the bubble concept is authorized under the Clean Water Act, section 301(e) should be amended to provide that effluent limitations are to be applied to each point source or group of point sources of discharge, provided that water quality is protected.

Mr. MOODY. Mr. Chairman, I am sorry to be so naive.

Tell me what the bubble concept is.

Mr. JENSEN. As the requirement states, if you have a series of discharge points along one section of a river, each one of those has to meet a particular limit. We would like to see the fact that, let's take, maybe these are controlled by one discharger or a combination of dischargers that have complete control over it. Let's take a look at the fact that maybe we could relax the conditions of one but overcontrol in another area. It would be far more economically advantageous and the net effect upon the river is still the same.

Mr. MOODY. Are you aware that in Wisconsin in the Fox River Valley, the pollution rights are in effect purchasable and salable to permit that kind of flexibility between manufacturers in the paper industry there. We have a system of pollution permits where you pay a fee and that allows that kind of optimization.

Are you familiar with that program?

Mr. JENSEN. I am somewhat familiar with it, yes. There are 10 or 30 mills along the Fox River there and that is one method of controlling the river. We are looking at that on a localized area.

A manufacturing facility might have 10 discharge points along one section of the river and be able to bubble those.

Mr. MOODY. You treat it as one so he can tighten up on one. If it is very effective to do one over here, he could work on this one so that, as a whole, they meet the outflow standards. Is that what you are saying?

Mr. JENSEN. Correct. Absolutely correct.

Mr. MOODY. Thank you, Mr. Chairman.

Mr. JENSEN. A major concern of industry is the effluent guideline deadlines. As you are aware, some of us who must meet the effluent requirement in less than a year and some of these regulations have not even been published and so——

Mr. ROE. Maybe we ought to make that point stronger. We are coming back and saying one of the problems, which is a legitimate problem, is that EPA has not given or produced final regulations, and consequently, in order for industry on the merit of the case to be able to meet those guidelines, you can't obviously meet guidelines if there is not any regulation on it.

Mr. JENSEN. That is correct.

Mr. ROE. That is a very strong and important point.

Now, on the side of industry, we want to do the right thing but industry is saying, we don't know what you want us to do. Is that what you are saying?

Mr. JENSEN. That is right. We can either take the gamble and construct now and miss the guideline or be out of compliance. As the law is now, we are supposed to meet regulations that have not been published and it is impossible to do that.

A further point in that is we feel it is a good idea not to have a final date for compliance just like we have now or else we would be right back in the same condition. We are looking for a 3-year compliance schedule after final promulgation of the regulations and not a final date of 1987, 1988, which some people are advocating.

Mr. ROE. I think they are advocating that because of frustration.

You know we started in 1972. It is now 1983 getting into 1984. That is 10 years. And when do we get the job done?

Mr. JENSEN. The flip side of that would be right in the position we are right now.

Mr. ROE. Why do you say that?

Mr. JENSEN. The EPA still prolongs their regulation schedule.

Mr. ROE. OK.

Can I ask the witness to hold? We are on second call so why don't we go vote and then return. If you will excuse us for about 10 minutes, we will go vote and come right back.

[Recess.]

Mr. ROE. Gentlemen, we will proceed.

You were talking about BAT. You may proceed, Mr. Jensen.

Mr. JENSEN. Thank you.

I just want to make a third and last point on the effluent guideline extensions.

We are again involved in the integrated facilities issue such as we were in the pretreatment area, and so we would like to see the guidelines stating that the industry meet the requirement 3 years after the final regulation of the integrated facility promulgated.

Moving on to best available technology, BAT limitations should be required only where there is a significant toxics problem. "Significant toxics problems" should be defined as those where BPT standards or limitations are not providing sufficient protection to the receiving waters and where further abatement would have a measurable effect on receiving waters.

Situations where a pollutant is present in the effluent solely as a result of its presence in intake waters should not be considered a significant toxics problem. The legislation should provide flexibility so that States and localities can administer reasonable programs.

BPT standards should not be elevated so as to equal BAT or require zero discharge.

BAT requirements for nonconventional pollutants should not be applied unless water quality demands it.

One other point that we are concerned about is the 10-year NPDES. EPA is having a hard enough time issuing permits on the 5-year cycle. We really feel that once an NPDES permit is established, it is quite a firm base on which to upgrade, and therefore a 10-year life is really justifiable.

Nonpoint sources. Uncontrolled nonpoint source pollution continues to present a major, nationwide water quality problem. This message is emphasized in the 1976 report of the National Commission on Water Quality, and more recently in 1981 report of the

House Investigations and Oversight Subcommittee of the House Committee on Public Works and Transportation.

Very recently, it has been confirmed by 6 of the 10 EPA regional offices. The 1981 report notes the attainment of the act's goals "is highly dependent on the degree to which nonpoint source pollution can be controlled."

Section 208 of the 1978 act provided Federal grants to State and local units of government to develop programs to control, among other things, nonpoint source pollution. To date, most States have developed programs for implementation of these programs at the State and local level. However, implementation of these programs has local government fiscal constraints.

Mr. ROE. The gentleman from Wisconsin.

Mr. MOODY. On that point, this is an important part of our bill. Does your association feel that, and I don't mean to put words in your mouth. I have heard others say this. You can spend money until you are blue in the face on point source and if you totally ignore nonpoint, you are getting very low yield for your dollar.

If you spread the effort across the two, you get much more back for the buck.

Mr. JENSEN. That is exactly correct. We are finding that the nonpoint sources are a very large contributor of materials in the water and that where municipalities when they come up to complete speed for meeting the requirements of the act, and industry is quite well along there, really squeezing them down much more, is not going to get much more pollutants.

Mr. ROE. If the gentleman would yield, that is the major issue that we are dealing with, having to do with the previous administration and Mr. Ruckelshaus trying to promulgate different sets of water quality standards which led to the waiver situation in the last legislation, which led to 100 or thereabouts—116 sticks in my mind.

Communities along the Hudson were saying: Well, if the Hudson River is going to be a dead river and we are not going to be doing anything to improve it, then we will not go into any secondary treatment at all. So the 116 communities stopped everything they were doing and a number of them applied for waivers, and thank God none of which were approved.

So I made a note to myself and Mr. Moody brought it up. Your point is if we are going to do something on the capability of receiving waters and we know that 50 percent of the pollutants from different studies indicate that it is nonpoint source, there is no reason necessarily to relax the other, but we are looking for that.

All I am trying to get at is if we go down and measure a river, and because the Federal Government and EPA have not directed their attention to the nonpoint source, there is no reason to say we will let that drip and then we really should not be doing too much more to clean up point source if it is not going to be effective.

I don't think the two necessarily are synonymous in the thought process. What we have to do is tighten up on the nonsource.

Mr. JENSEN. That is correct.

Mr. ROE. You don't object to that.

Mr. JENSEN. I don't think we should give up on water quality of a river. We should go to where the majority of the pollutants are

coming from. If that is nonpoint source, let's get the show on the road.

Mr. ROE. OK.

Mr. JENSEN. NAM's members remain committed to making nonpoint source control programs work at the State level. Consistent with overall budgetary constraints, NAM supports continued provision of Federal funding mechanisms to implement State and local sources.

Mr. ROE. Let's deal with that. You made two statements and you spoke on page 11 in the last paragraph on nonpoint source; "However, implementation of these programs has local government fiscal constraints."

Earlier in your testimony you spoke to the issue someplace along there on fiscal constraints, which is one of our concerns. Let's deal with that a minute.

When the committee wrote this legislation in 1972, we pretty well identified what qualitative dollars we thought would be needed. At best, we knew at that point to bring our municipal plants into compliance with permanent secondary treatment in particular.

In the last couple of years the decision was made regretably to reduce the matching point to 2.4 which has materially delayed the program in our judgment, at least 10 years. This also puts a constraint on industry as far as their nonpoint source discharge would be involved or their discharging into the municipal system.

Let's take a case in point, the Camden regional sewage program, which is not yet completed and is a $4.5 million program. You don't discharge into it, but there are firms that discharge into that particular system.

If they are constrained at every level, it is going to be 7 or 8 years before that regional plant is completed.

So when we get to the pretreatment issue that we were discussing earlier, if that discharger is going into the municipal system, that is all botched up because the municipal system is not going to be completed for another 7 or 8 years because of the lack of funding.

We had testimony yesterday of the organization on the training part of the program. There is a shortage of qualified, capable people who have been trained in this field.

That is also slowing the issue down. When we cut back on the funding at the Federal level and the locals either can't or won't put up their matching shares, that delays the whole program again.

What I am leading up to is, for example, in the Howard bill and the other bill, they are urging Congress to make a recommitment financially simply because we are dealing in a process of time and space and if we don't get the plants constructed for secondary treatment, we are slowing the whole process down.

Would you just speak to that? You spoke to funding. Do you think that on a priority basis that if we are going to do the job, it ought to be done in water supply and water quality and we ought to have the funding to achieve that goal at all levels?

Mr. JENSEN. We are not advocating getting into another grant program.

Mr. ROE. How do you suggest we finish the job?

Mr. JENSEN. We are looking at educational programs and training programs for establishing, (1) an ethic across the country in this area in the municipalities and we are also looking at the programs for land use planning much as is done for flood control, for example, and zoning requirements so that there could be a best management practices established by the States and each State has a different need, a different requirement for these.

These kinds of management practices are set up by the States and then locally rolled out in the communities.

Mr. ROE. Let me digress again. Yesterday when the National Engineers Association testified, they came back and said, well, we don't really think we should have any grant program. We would like to do the financing differently and what we would like to see you do—meaning the Congress—is to put in a 100-percent loan program.

It took a little time to get that out. A 100-percent loan program with an interest rate of around 5 or 6 percent, but that would be economically more technically feasible for regions in municipalities and States to deal with than the grant program because they felt in part the grant program might come to be an end in itself.

You and I both know that if we are going to build some kind of pollution controls and equipment in the plant you have to spend your money and if your goal is to build sewage disposal plants and systems, somebody has to spend the money.

The money has to come from someplace. So what your testimony speaks to is that because EPA has not promulgated the regulations, I think that is the real hole in this operation and because of the fact we have these multiple decisions to make that we should spread the time out or not put any time limit at all or we will never get the job done.

Somebody, someplace has got to make an investment in the system if it is going to get done. We don't have the right to say to the industries, well, look you guys have to do all this free treatment, but it does not matter whether you do it or not because we can't finish the construction of the receiving plant in the first place.

It is going to take another 10 years. So if we are following any kind of logic someplace, somewhere, somebody has to make an investment. Now, we don't want a grants program.

We don't want a loan program. How are we really going to get it done? I don't mean this unkindly to you, but we are so tired.

The people come before us and say we have the work ethic. We know what the pollution situation is. Our States have 63 highly toxic issues, the most in the Nation and we are coming back and saying, well, what do we do? Is there some innovative approach that you would have?

In other words, what do we do? We can't keep delaying and delaying and delaying and delaying. It is not going to get achieved.

You see what I am trying to get at? We are not talking about any Federal grant money. You say, OK, we have a balanced project. Should the water supply of the Nation be a priority?

We have to get it done. How do we get it done if we don't do something?

Mr. JENSEN. I don't think all these controls or management practices are really capital. They are more operating practices.

Mr. ROE. We are going to come to your plant. They are talking about opening the paper company again. We just approved a $180 million diversion on the Passaic River over to Bergen County.

The quality is essential up above the dam because that is where the water supply is taken from. Do we allow it to be toxic or do we say we have got to clean it up?

In order to clean it up, somebody has to spend some money in some processes to get that done is what I am trying to get at. That means an investment someplace both in plant improvement and in municipal governmental sewage disposal system.

So if we don't make the adjustment, how are we going to do that? That is a legitimate question to ask. What would you say?

You don't think because they are going to zone something out in Morris County that it is going to change the pollution of the Passaic River by any chance?

There is not a chance in hell of that happening. We can't go back to septic tanks.

Mr. JENSEN. What I am saying is a lot of the sources of nonpoint in the urban area is runoff from streets and the fertilizers and things of this nature and I don't advocate a treatment facility to correct that.

Let's go to the source of it. The street sweepings or practices like that.

Mr. ROE. If the gentleman would yield, I don't mean to be obstreperous, but you gave a good rundown of what the quantitative uses of waters were and made the point of view that water supply is essential.

This committee is not just handling the Clean Water Act. We have there other major pieces of legislation, flood control and other things that we are working on, but you comment in your testimony that of the 1,300 enterprises related to the NAM, you mention 158,000 smaller industries which was good testimony.

You mentioned that the preponderance of the water supply is used as passthrough. You mentioned that by contrast, water use for irrigation and agriculture runs a lesser degree of value, is highly polluted and consumes about 80 percent of the water use.

We know that a statement of fact, but the fact remains what would you suggest we do as far as the food supply is concerned?

What I am trying to get across to you is that the committee is charged with putting together a national water policy. That is what we are trying to do.

What I am trying to get out of you as far as NAM is concerned, what is NAM's position? Is there a position yet as to what fiscal resources and what method of financing we should be committing to this process?

You make the statement that we should not be going into further grant programs and you make the statement that part of our delay is the fact that EPA has not promulgated all of their regulations. We are coming back on the financial aspect and saying the locals really don't have the resources to do it or are not committing their resources. What does NAM think we should be doing as a people, as a Congress?

How should we be providing the funding?

Mr. GILDE. You raised the issue of Camden.

Mr. ROE. Only because I am knowledgeable of that problem.

Mr. GILDE. In a sense, it identifies some of the problems that have occurred, not necessarily giving total answers to the future. But Camden County started out in the late sixties with a program.

In 1972, they had two different regional plans for the entire county and had one of the regional plans 50 percent designed when along came new legislation which started a number of things rolling.

Mr. ROE. I agree.

Mr. GILDE. And created tremendous delays. There are an awful lot of political ramifications to the whole thing, but that program initially would have been executed by 1975 or 1976.

The State stepped in in 1972 and requested that both agencies, the two in the county, form into one and then in order meet all new Federal requirements and State charges it was stretched out until just recently.

Now, you mentioned that they had a $400 to $500 million program. The old program back in 1972 for just the one basin in Camden County was about $80 million. Most recently the State has stepped in again and said, you really should not be having all in one system but divide up the county again. So the State's approach to it most recently is to say, OK, where are we going to get the most pollution removed for the least amount of money and on that basis have redivided the county again to give the $130 million to take care of the most pollution.

Now, that is not answering all of your question.

Mr. ROE. No, but I know what you are saying.

Mr. GILDE. It is a direction. Unfortunately, we have done some things in the past that have held off getting jobs done and we certainly don't want to do things now that will cause more delay but I think what is needed here and what would have helped in the past is this ability to act with flexibility both at the State level and at the local level.

Mr. ROE. Assuming the State would have done it. They waited 10 years.

Let me try to cut it back. Maybe we have got two ships passing in the night. Are you talking about no grant funding as far as nonpoint sources involved?

You started to talk about parking lots and zoning and so on. You are speaking of the issue and that would relate to things beyond point source.

The present program is point source so far as our funding is concerned.

Mr. JENSEN. Yes or nonpoint.

Mr. ROE. May I suggest this—and I don't want to take up too much time with this—I think it would be awfully helpful to us. I happen to believe that your organization is an extremely important one because you are speaking for the industrial community of the Nation and that is why you are on first today.

But I think it would be extremely helpful for this committee for you—after we finish your technical data today—for you to come back to us with supplemental testimony.

What do you see from a financial point of view? Never mind the intricacies involved. What kind of commitment does industry feel that the Government and themselves should be making financially?

Because let me tell you we are trying to strike a balance with the achievable. We want to get a job done. We don't want more hearings and more rhetoric.

Let's get something achieved. Everybody wants that. But we have this situation now where one group is saying stop everything and other people saying, well, we have got a confrontation. Maybe that is unnecessary in part, but it would be helpful to the committee to have the National Manufacturers Association come back and say we reviewed the financial situation here. We recognize it is going to cost money and that is why we are here.

You are presenting your case not only based upon the pollution control aspect, but what it is going to cost to get it done. Can't we be competitive, that is what you are saying.

We don't want to be treating for treatment's sake. We are trying to look for a new view here. For example, some of the members have promulgated the idea that if it is retrofit that is involved, we understand what that is about. If it is retrofitting a plant versus the point of building a new plant, you have got the tax investment credit situation and the whole bit.

Many instances you might say, scrap that plant and let's build a new one, because on the financial basis it is going to cost you less to do that to meet these new means than it would be to retrofit.

But then maybe NAM should be coming back to us and saying, well, if we have another mechanism, let's assume we had a writeoff of 3 years or something of that nature as a tax credit against retrofitting some of these plants to achieve these goals.

This would give us a different posture and a different view as to what the overall posture would be.

So I think it would be helpful for us after we call you back and you have had a chance to review and say what financing you think we should be doing at Federal, State, and industry level. What thoughts do you have in that direction?

Mr. JENSEN. Great, we will be sure and do that. I think it is very good because we were looking at many different issues and we did not really get that well focused in on this one.

I thank you for the opportunity.

The remaining part of my testimony relates to the program for nonpoint sources. Why don't I just hold those and leave them in the subsequent testimony?

Mr. ROE. Let's go to your recommendations on page 12.

Mr. JENSEN. On page 12 I do have six points rolled out as recommendations, yes.

In prioritizing and setting up the nonpoint source problems, we think these six points should be guidelines.

One, new efforts to deal with nonpoint source pollution should concentrate first on identified problems with attainable solutions.

Two, primary responsibility for developing and implementing nonpoint source controls should continue to reside at the State and local levels.

Three, States should be afforded broad flexibility in developing the types of nonpoint source programs that address the particular problems in each State.

Four, the Federal role in nonpoint source pollution control is best carried out by providing technical and financial assistance to the States.

Five, positive initiatives, rather than financial sanctions against nonpoint sources, will have the greatest impact on improving water quality.

Six, completed and approved section 208 plans should serve as the starting point for additional efforts to control nonpoint sources pollution.

In conclusion, the Congress has an opportunity in the course of reauthorizing the Clean Water Act to make a number of changes that would facilitate the achievement of better water quality in the country.

The changes we have suggested would simplify and streamline the law, giving it greater flexiblity and creating a true Federal-State partnership. We support the extension of the act for 2 fiscal years after which Congress would review the program. We question the wisdom of reauthorizing the act for 4 or 5 fiscal years.

Also, Mr. Gilde has one point that he would like to make on pretreatment.

Mr. GILDE. Going back to pretreatment. NAM is in favor of a pretreatment amendment which would prohibit EPA from requiring cities to impose pretreatment requirements on industrial dischargers of conventional pollutants as a substitute for adequate municipal treatment.

We are concerned. This is not an argument for not having pretreatment. With compatible pollutants you should have pretreatment, screening, grease removal, and things like that, but industry has gone a long way in recycling and reuse of water so that the concentrations in wastewater increase. It will not do the country any good to be having biological sewage treatment plants by industry inside of cities. We feel that there has been some movement in this direction to try to have those with compatible pollutants such as dairies, food processors and so forth, go to biological treatment which is not to the benefit of the community or the industry involved.

Mr. ROE. Are there any questions for the panel?

Mr. EDGAR. Thank you, Mr. Chairman.

I apologize for coming in late. There is another committee meeting. I did have a chance during the questioning to read through your statement and I have three specific questions.

One was covered by the chairman, which is point five of your page 12 testimony where you talk about positive initiatives and I think the chairman is right in asking you to be more specific.

But I have some real problems with page 12 totally. Your testimony is not bad up to page 12, and then you lay out as your principles six points. If I read those six points right, three of the six points say that what the National Association of Manufacturers would like to see is that for nonpoint source pollution let the States handle it with little or no responsibility of the Federal Government

except for maybe some technical assistance and some help in that way.

Let me ask some very specific questions. Do you have any members of your association from Pennsylvania?

Mr. JENSEN. Yes.

Mr. EDGAR. Do you have members of your association from Maryland?

Mr. JENSEN. Yes.

Mr. EDGAR. Let's take a point source problem that has been identified and that is the pollution and increased pollution in the Chesapeake Bay. Suppose Pennsylvania, Maryland, and Delaware were going to address that problem of the Chesapeake Bay and the nonpoint source pollution that is causing catastrophe in that area and we did exactly what you said.

That we gave primary responsibility for nonpoint source pollution to the States and that we should give them broad flexibility of the States and that the Federal role should only be in terms of technical assistance.

Suppose we made a major study of that and it was determined that it would cost $150 or $200 million or more to clean up the Chesapeake and that the technical answer to that problem was to put certain controls on nonpoint source pollution in Pennsylvania, Maryland, and Delaware.

Suppose Pennsylvania, the State where I am from, said no, we like our agricultural runoff into the streams and if it causes problems for Maryland, so what. Suppose some of our cities up the Susquehanna River decided that they did not care very much about keeping certain standards of pollutants and we are going to just flush it down the Susquehanna River and let Delaware and Maryland handle the problem.

How do you in any of your principles get to that problem?

Mr. JENSEN. The reason for the principle statement was not for the joint issue that you pointed out. We were trying to make the point that conditions in Arizona are not the same as in Minnesota.

We were trying to regionalize a program so that we would not have a broad, uniform program across the Nation and try to tailor the management need to the individual weather and geographical region.

That is why we thrusted the program as we laid it out. We did not address the coordination, and you are very correct. We did not address the coordination between the two States going into the same body of water.

Mr. EDGAR. I just pointed out to you that if you have a problem in South Dakota in the Missouri River water system and it impacts on Iowa, Nebraska, Missouri, and all the States downstream, I think what you have done is you have brought business principles to this analysis and you are really basically saying we want to deal with nonpoint source pollution the same way we dealt with point source pollution, in a sense, dealing with it plant by plant and State by State.

I think, given the interconnectedness of our water systems, our underground aquifers, the problem of increased infiltration of hazardous substances into our waterways, it is going to be difficult for us to have a State specific solution to these problems.

We may give the States more responsibility and more funding for those problems that are internal within those States, but my guess is with nonpoint source pollution, there is more interstate involvement needed.

Mr. CANNON. I would like to add, it has been our experience in situations of the type that you describe that the interstate compact organization is the most viable device. One outstanding example of this is the Ohio River Valley Water Sanitation Commission in which eight States joined together to form an interstate compact and commission type organization on which the Federal Government is also represented.

Over a period of years they have carried out a cooperative program which has resulted in dramatic improvements in the water quality of the Ohio River. Something like 138 species of fish have returned and in a great many ways, both industrial and municipal pollution have been cut back by very substantial percentage points.

Another example is the Delaware——

Mr. EDGAR. If I could interrupt you, I would recommend that that be one of your principles.

Mr. CANNON. Well, thank you for the suggestion.

Mr. EDGAR. I think if we are going to talk about nonpoint source pollution and we have some ideas in terms of where it is working, I would suggest that.

Let me ask you one final question. There may be others who have questions. On page 2 and 3 of your statement you make a very good comment that water is indispensable, water is not a free commodity.

I wonder if you would have any sense as to what the real cost of water is, what is the cost of water to your organizations and businesses that are part of your manufacturers. How much does it cost them for a gallon of water?

Mr. JENSEN. That really depends upon the intended use of the water and obviously water for use in a direct food contract processing has to be a higher quality than for cooling water and it also depends upon the availability of the water, so I really can't answer that as far as one number.

It is over a very wide range of values. I know in my company for the same intended use, it varies from location to location and that is seen in whether we use noncontact cooling water or we use a cooling tower.

Mr. EDGAR. I raise that question because I think in 1973 when the Arab oil embargo occurred which was 10 years ago this week, many businesses were shocked, as they began to develop their business cycle based on higher costs for industry than previously and there has been a real shakeup for businesses.

I have a suspicion that toward the year 2000 there is going to be a similar shakeup as businesses begin to adjust to the adequacy of quantity and quality of water within the worksite and the statistics that you list, it occurs to me that we are going to have a real crunch if small- and medium-sized businesses don't recognize that water is going to have a higher cost to it in the future than in the past, not just in terms of purifying that water and placing water supply networks that are aging, but also in terms of the value of that water to the process.

Mr. JENSEN. Yes. There will be a shocking realization or crunch, as you say. We are beginning to see that. We have been seeing it for years in southern California and Arizona as more and more people in businesses move into there.

There just is not that much water available. People live a different lifestyle there than they do, say in New England.

Mr. EDGAR. I have some legislation that the chairman is supporting and has bipartisan support to set up a national ground water commission to look at quality and quantity of our natural ground water supplies in the future.

The chairman has an omnibus water bill that is trying to address the issues of quantity and supply and we have this effort in a Clean Water Act and others to try to make sure that we have water and supply.

I just think that many businesses who legitimately say let's get Government off our backs and out of our pocketbook, let's cut spending and taxes and increase defense, and all the other problems that our society faces will solve themselves, may need to readdress the issue of whether or not a national water policy is needed that at least has pieces of it that help in a broader view than just a site-specific problem that an industry may face in one part of the country.

That is why I press so hard on the interstate, interconnectedness of the nonpoint source pollution problem. I think I agree with the chairman. I am not sure that that can just be solved by what you title in point 5 of page 12 as positive initiative and if you have got some magic positive initiatives that will tell that businessman in Delaware County, Pa., to behave himself in relationship to nonpoint source pollution that is going to solve the problems of that whole region, I would be glad to see what they are.

I know businessmen in terms of incentives, they would be more likely to respond to a tax incentive of some kind or some joint Federal/State/local business cooperative venture.

Mr. JENSEN. That is what we had in mind.

Mr. ROE. The gentleman from Pennsylvania.

Mr. CLINGER. Mr. Jensen, in your testimony you discussed the recent third circuit decision which suggested that we do not have legal authority to grant fundamentally different factors and variances. It is my understanding that there is a conflict within the circuits on that issue.

Are you aware of whether any other circuits have addressed the issue?

Mr. JENSEN. No. I can't respond to any other circuit, no.

Mr. CLINGER. You are just aware of the third circuit?

Mr. JENSEN. Correct.

Mr. CLINGER. I was interested particularly in your testimony involving the problem of integrated facilities, I think is a valid point and I think it is obvious that there are real problems under existing law of how you handle integrated facilities.

Can you give us an idea and perhaps you can provide this for the record of how many of your members have integrated facilities?

Mr. JENSEN. I will be very glad to do that. I don't have that number off the top of my head, but I know my company, if it is a test case, about one-third of our plants are integrated.

Mr. CLINGER. About one-third. It would be helpful, I think, if you could provide us with as much background data about the nature of the problem, if there are any studies that have been done or technical information as to how you are unable to really comply because under existing law with the requirement?

Mr. JENSEN. I know people from General Motors have told me that essentially all their plants are integrated facilities. There are 100 and some plants in the United States.

Mr. CLINGER. I guess the final question in that line would be to what extent is the problem of integrated facilities really a function of the number of categories involved in the integration?

How many different categories are part of that integrated facility?

Does the problem expand with the number of categories involved?

Mr. JENSEN. Yes, it will. That is for sure.

Mr. CLINGER. Your testimony also discusses the issue of water quality standards and the position that designated uses should not be frozen as of any particular date. It is too rigid to just freeze it and lock it in forever.

I think in terms of addressing that issue in our legislation, it would be extremely helpful if you could cite a specific example or if you had a specific example that would indicate why the committee should not freeze designated use. Why is that a real problem?

I would like a specific example of where that could be done.

Mr. JENSEN. Well, there are a number of States. Let's just take for example Puerto Rico. All the water in the State is designated as drinking water supply and there are places in there that you just physically can't make it a source for drinking water supply and yet the dischargers are required to meet these stringent standards and the natural configurations of the water you would not want to make it a drinking water supply.

Mr. CLINGER. That is the sort of example I think that would be helpful.

Finally, in connection with the chairman's request that you give some thought to who is going to pay and how we are going to pay for this, if you would include in that analysis what you might think of some sort of an infrastructure bank either at the Federal level or the State level which, except the fact that we are not going to have any massive new grant and aid programs, one possible alternative would include the mechanism centrally or State administered infrastructure bank which would be available to make loans which would be repaid to the bank and it is kind of a revolving loan fund concept.

NAM would look with favor upon that kind of a concept?

Mr. JENSEN. We will be glad to analyze that.

Mr. ROE. The gentleman from Wisconsin.

Mr. MOODY. I notice, most of your recommendations do, in fact, bear down on the nonpoint source issue. You have implicit recommendations in other parts.

It might be nice to give us the kind of compressed summary of your recommendations across-the-board.

On that point, I think Congressman Edgar is very much correct when he points out that exortations and other things of private ini-

tiatives wouldn't solve nonpoint where you have a combined body of water where various States are feeding into it.

Compacts are one approach, but is that always going to work? It seems to me if you have three States polluting, let's say, the Chesapeake Bay and the cleanup, if they agree to a compact, maybe a burden very much more on one than the other two, and that State has a systematic incentive not to sign such a contract.

You may not get people to sign voluntary contracts when they recognize the price tag that is going to come down. So maybe there still is a role for some Federal nonvoluntary standards on nonpoint.

I think that your association could make a tremendous contribution if you would help us think through what are the really practical, creative ways of handling nonpoint because I think that is the area where there is least plowed ground.

A lot of the stuff you have gone over we have been hearing. This is really awfully important.

Mr. EDGAR. Would the gentleman yield at that point?

Mr. MOODY. Just a second I will.

I just want to ask you to do that because I think there is a—well, I will yield to my colleague.

Mr. EDGAR. I was just going to say that I think your question is a good one. There is one thing that I thought of since our conversation was the problem that you may have of have and have-not States.

That is certain States that will do a good job technically and will put together good responsible laws that may have a cost to them, but it may be worth the costs to the political leaders in that State.

You may develop a position where some industries that don't want to pay that cost may find it more convenient to relocate their plants in States that are not as stringent in their caring and that is why some of the national rules, regulations, and incentives may have a much more constructive role to play rather than having industries seek out the best deal from the State that has the least protection.

Mr. MOODY. That was my second point expressed in a different way. You know we have tax competition with States competing with each other for lower taxes to attract business into their States.

Under your guidelines you could easily see a pollution competition scenario. We attract industry to States by having lower pollution standards.

They feed into the same body of water, but they have a lower pollution standard. So we would like to have your input on that.

Mr. ROE. Are there any further questions?

[No response.]

Mr. ROE. We want to thank you for your testimony. We have been a little bit longer with you. We think that you had a lot to offer and we want to hear more about it.

So we will look to call you back again for a little more testimony in the areas of our concern.

Mr. JENSEN. Thank you very much. My pleasure.

Mr. ROE. Our next witness is Dr. Alan Mytelka, director and chief engineer of the Interstate Sanitation Commission, accompanied by Dr. Mitchell Wendell, who is general counsel.

I want to welcome you gentlemen to our hearing.

Dr. Mytelka, welcome.

TESTIMONY OF ALAN I. MYTELKA, PH. D., DIRECTOR AND CHIEF ENGINEER, INTERSTATE SANITATION COMMISSION, ACCOMPANIED BY MITCHELL WENDELL, GENERAL COUNSEL

Dr. MYTELKA. Thank you, Mr. Chairman.

I am Dr. Alan I. Mytelka, director and chief engineer of the Interstate Sanitation Commission. The commission is an environmental agency of the States of New Jersey, New York, and Connecticut, established by an interstate compact having the consent of Congress.

Among other things, the commission has jurisdiction of a regulatory character over water quality in the tidal waters of the northeastern New Jersey, southeastern New York, southwestern Connecticut metropolitan area.

Specifically, the Interstate Sanitation District includes the Hudson River from the Bear Mountain Bridge to the ocean, Raritan and Sandy Hook Bays, the waterways of the New York Harbor complex, and Long Island Sound westerly of a line from New Haven to Port Jefferson.

The commission monitors receiving waters and effluents, administers water quality standards, makes regulations containing both effluent limitations and receiving water quality standards, and has authority to enforce its regulations. Its requirements are included in NPDES and SPDES permits.

The purpose of this testimony is to discuss questions relating to estuaries, as they would be affected by proposals to amend the Clean Water Act.

We call the committee's special attention to the final portion of this testimony which proposes inclusion of interstate agencies in conferences for estuaries. Because of the recent course of events, the applicability of section 301(h) to estuaries is also involved.

The provisions of the Federal water pollution control statute apply to the waters of estuaries as well as to other waters of the United States. In fact, estuaries are particularly sensitive parts of river basins and marine systems.

The physical, chemical, and biological balance within them is especially delicate. Estuarine environments are vital for food production. They also provide indispensable habitat for many species of fish and wildlife.

In addition, these areas are among the Nation's prime recreational assets.

At the same time, estuaries are apt to be especially stressed areas. Many of them contain commercial harbors which serve transportation and major industrial centers. These often bring intense pollution concentrations.

It is appropriate to recognize that estuaries have water quality problems of particular complexity and importance. For this reason, it is encouraging that proposals for amendment of the Clean Water

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Act should examine the application of its provisions in estuarine areas.

These proposals deal with the appropriateness of ocean waiver provisions for discharges into estuaries and also with a special mechanism to consider the problems of interstate estuaries.

SECTION 301 (H)

Whatever the pros and cons of ocean waivers may be for the deep coastal waters of the Pacific, they are not illuminating for the conditions in confined waterbodies. The shallows of territorial seas adjacent to inland waters provide much less opportunity for the rapid dispersion claimed as an ameliorating factor.

Within estuaries, the situation is even more adverse to assimilation or dispersion of pollutants. Thus, advocates of lessened treatment for the wastes discharged from POTW's into inland marine waters bear an especially heavy burden of proof.

We support the proposition that applicants for permit modifications who wish to provide less than full secondary treatment for such discharges should be denied, unless they can show convincingly that their proposed effluents would not have an adverse effect on the environment.

Whether their proposed discharges would cause or contribute to failures to meet applicable receiving water quality standards is one test to be applied. However, it is not an all inclusive one.

In the Greater New York Metropolitan Area, and undoubtedly in other places, as well, there are those who seek further to pollute waters that are already below standards. They argue that since the waters are already bad, it will do little or no harm to add pollutants.

Another argument, especially common among small- and medium-sized dischargers, is that their contributions are not sufficient to be noticed or to make any real difference.

If this view had prevailed in the framing and administration of the Federal and State water pollution control statutes, or in the water quality regulations of the Interstate Sanitation Commission, such progress as the efforts of the past 25 years have shown would not have been made.

In major water bodies, and especially in heavily congested and industrialized areas, it is seldom the pollution from one source alone that determines water quality. In the New York-New Jersey-Connecticut region, as in many other places, the condition of waterways is the composite result of many discharges and of the degree of treatment which they have received.

In an estuary it is especially true that the waters interact. They do not always flow from upstream to downstream.

They ebb and flow with the tides and do not disperse or move on as readily as they do in a free flowing river. Moreover, an estuarine system characteristically has shoreline curvatures and indentations which catch and retain contaminants.

Poor quality effluents accumulate. In parts of the New York Harbor area detention times are often as long as 2 weeks or more. In some places, thorough flushing never really occurs.

The Clean Water Act establishes secondary treatment as the universal norm. This represents a now long-standing legislative determination backed by much technical and scientific experience.

The Federal act allows for exceptions, only where it can be demonstrated that environmental harm will not be done and where there is economic and social justification for a relaxation of the secondary treatment requirement.

It stands to reason that in estuaries where the ability of waters to assimilate pollutant discharges is generally much diminished, the availability of section 301(h) waiver procedures raises serious problems.

Legislation before the Senate, S. 431, would increase the difficulty of obtaining permit modifications under section 301(h) by adding criteria to be met by applicants. Such safeguards are worthy of consideration.

In particular, the proposal that relaxation from secondary treatment not be allowed in an estuary, unless good flushing occurs there, has merit.

H.R. 3282 approaches the problem differently. It would make applicants who discharge into estuaries ineligible for waivers under section 301(h). Consideration of estuarine water quality problems—of an interstate character—would be by management conferences.

Since such conferences could recommend water quality standards and requirements for their individual areas, they could consider both general and specific proposals for relaxation of treatment requirements.

The aspects of section 319 of H.R. 3282 which we find most meritorius are the special attention which would be focused on estuarine problems and the additional funding that would be devoted to them.

Since estuaries bear special and unique stresses, and since they are particularly sensitive ecological areas, it makes sense for Congress to show special concern for them in its principal water quality statute.

INTERSTATE AGENCIES AND MANAGEMENT CONFERENCES

As presently conceived, management conferences would have planning and quasi-regulatory functions. They would produce master plans for the estuaries.

The parties to a conference would be a representative of each State in the estuary and the several Federal agencies with relevant water programs.

In the New Jersey-New York-Connecticut region, the Interstate Sanitation Commission exists specifically to handle interstate problems including many of the functions projected for a management conference.

For nearly half a century, the commission, with the specific consent to its compact by Congress, has monitored both effluent and receiving water quality throughout the Interstate Sanitation District. It has made and enforced water quality standards to assure compatibility of discharge requirements and water uses in the interstate waters involved.

The commission has also developed special experience and expertise in dealing with estuarine problems in its area because its entire attention is concentrated on the estuary. Moreover, section 103 of the Clean Water Act expressly declares a congressional policy to encourage interstate compacts as a means of dealing with interstate water quality problems.

We urge the committee to include an interstate agency with jurisdiction over all or a significant part of an estuary as one of the parties to a management conference. Such an agency, wherever it exists, would make an important contribution to such a conference.

Under the Federal Water Pollution Control Act of 1956, which provided for interstate enforcement conferences, interstate agencies with jurisdiction in the area were expressly enumerated as parties along with the States and the Federal agencies.

The Interstate Sanitation Commission participated vigorously and effectively in the conferences on the Hudson River, Raritan Bay, and Long Island Sound. The commission played a leadership role in formulating the secondary treatment principle in its area and in furthering it through these conferences.

So far as we have been able to ascertain, the omission of interstate agencies as parties to conferences under section 319 appears to be inadvertent. In fashioning this part of the legislation, we urge a brief amendment to the section by adding two sentences at the end of the first paragraph of the section, as follows:

In any case where an interstate water pollution control agency, established by an interstate compact having the consent of Congress, has jurisdiction over all or a significant part of an estuary for which the Administrator has convened a conference, the interstate agency shall be a member thereof. In addition to its grant support provided by the Administrator under section 106 of this act, such an interstate agency shall be eligible for and shall receive funds in accordance with this section from appropriations made available pursuant to this section in support of its work.

The proposed management conferences would be given important and ongoing tasks to accomplish. They would need to make master plans suitable for specific implementation.

This would require continuing research and development work, probably over a period of 2 to 3 years—a conference is to have a life of at least 5 years.

Monitoring is expressly provided as a function. To be done effectively, this requires sampling and analysis of waters.

Standards making also requires technical and legal staff work. A conference can oversee such work, but it will need assistance of a concrete nature to perform it. For this reason, the interstate agencies which could serve these functions should not be omitted from the enumerated parties in section 319.

There is one reference to interstate agencies in section 319. It would allow an interstate agency doing work to implement a completed master plan once made and to receive grant assistance for such implementation work.

However, that reference is too limited. An interstate agency with water quality jurisdiction and responsibilities in an estuary should be funded in connection with its work in the same manner as other State participants.

Indeed, in an interstate estuary, an interstate agency is in a better position to do the work contemplated because it is the only

agency—other than the Federal Government—with jurisdiction sufficient to see and deal with the problem as a whole rather than with the territorially limited segments within the individual States.

We wish to commend your committee for having identified estuaries as proper subjects for the special attention that their intricate problems deserve. We trust that these views will contribute to your development of an improved Clean Water Act.

Thank you, Mr. Chairman.

Mr. ROE. Thank you, Doctor.

The gentleman from New York, Mr. Molinari.

Mr. MOLINARI. Thank you, Mr. Chairman.

I'd like to first welcome Dr. Mytelka and Dr. Wendell, who I have the utmost respect for and the quality of their work as well. I have but a few questions and I have to run out to another committee hearing.

You start off talking about the work that the commission does now in monitoring waters and effluents and also you talk about the enforcement authority. It is my impression that your commission has suffered some rather severe financial cutbacks in the last few years from your State contributions, the three States involved.

Could you elaborate on that for us?

Dr. MYTELKA. Well, during the past several years we have not been funded to the extent that is necessary and, in fact, in the past several years several of the States have actually cut back the funding that we had received a few years earlier.

Mr. MOLINARI. Well, OK. I'd like to zero in on that because I'm very, very much concerned. I know the kind of work you do and I know that you are not able to do the monitoring you did before, and for the sake of the record, this is completely unrehearsed. We have not discussed this. But I'd like to get with more certainty what the effects were or what you feel is necessary to properly perform the functions that you were supposed to perform.

Dr. MYTELKA. Our commission should be doing more sampling of, one, the receiving waters, not only for the conventional pollutants but also for the toxic materials which may or may not be present. In that regard it is really necessary for the public to know if, in fact, toxics are not present that, in fact, they are not, and if they are, to the extent they are.

In addition, we ought to be doing more sampling of the effluents of the treatment plants. The local, State, and Federal Government have invested billions of dollars in treatment facilities collectively within our district. It is important to do proper sampling of these effluents to make sure that the treatment plants are operating properly so, if they are not, corrective action can be taken. Otherwise, these tremendous sums of money that have been invested are going to go down the drain.

Mr. MOLINARI. Let me interrupt you if I may, Dr. Mytelka.

I recall reading in the newspaper a statement, I think it was the Times, about the periodic inspections that you make now as opposed to what you used to make. Can you just tell us briefly what those numbers are?

Dr. MYTELKA. Well, in terms of municipal plants we used to visit the major ones four to six times a year and the smaller plants two

to four times a year. At the present time, because of budgetary restrictions, we are able to visit the major plants two to four times a year and the smaller plants once a year. We do try to make sure that we visit all of the municipal plants at least once a year.

In regard to the industrial facilities in our jurisdiction, we have also had to cut these back severely and probably proportionately.

Mr. MOLINARI. But I would like to ask you, with the consent of the chairman—in order to save some time and at the same time have perhaps a more complete statement—would you gentlemen prepare for this subcommittee a detailed statement itemizing the resources that you believe you should have, and incorporate into that with those additional resources what you would be able to do that you are not now able to do.

I've had a conversation with the chairman during the vote and he has been very responsive and we are going to look at it to see if there is some way that we can't come up with a mechanism to provide additional funding. I read with interest your recommendation on the amendment and that is something that I have seen for the first time.

Let me just quickly move on for the sake of my colleagues here who have kindly let me go first.

On the 301(h) waivers, you mention in there that you support the proposition that applications for permitted modifications who wish to provide less than full secondary treatment for such discharges should be denied with the caveat that unless they can show convincingly that their proposed effluents would not have an adverse effect on the environment.

How do you view the application for waivers by the city of New York?

Dr. MYTELKA. Well, as you know, the city of New York as well as municipalities in New Jersey and municipalities in the State of New York outside of the city, some 22 of them did make applications within our district and we looked at each of them as an application, measured it against the requirements needed for it, and we found them wanting and in fact we turned down on first round all 22 applications as not being appropriate.

One interesting aspect. These are not applications only from one State. You have to deal with equities not only within a State but we have three States involved, Connecticut, New York, and New Jersey, because some of the applications from New York would have an effect on the water in the State of Connecticut, and of course the applications of the New York and New Jersey communities would directly affect each other in the Hudson River and elsewhere.

You can't say well, suppose you just give one. Well, which one?

The system has to be looked at as a whole and so we viewed our district as a whole and we have applied the necessary evaluations on a districtwide basis rather than just on an intrastate basis. We came to the conclusion that both the city and the municipal applicants in the State of New Jersey, were wanting and we denied them.

Mr. MOLINARI. Well, I compliment you for that position. I have to wonder what the combined impact would be if all 22 applications had been granted; I don't know that anybody ever did the computa-

tions. I wondered what the result would be of 22 applications of that nature in that relatively small area.

You go on on that page to mention in the Greater New York metropolitan area that there are those who seek further to pollute waters that are already below standards, and the standard argument is that the waters are so bad that what difference does it make.

Do you have anybody specific in mind or can you give us some examples of those that you are talking about here?

Dr. MYTELKA. Well, without mentioning names per se which I don't think would be suitable at the present time, both municipalities and industries, under other provisions of the act, are looking for waivers. In fact, we have requests before us now asking for waivers from the commission's own effluent requirements. This is in addition to the 301(h) waiver.

So when one looks at a request to do less than necessary treatment, it is not only in the section 301(h), it is on all the other waivers and that also has to be taken into account, that it is not just one municipality or industry that is requesting the waiver, they all are. And of course, as soon as this whole 301(h) business came up, we received questions from many of the industries, how do we make the application?

We pointed out of course 301(h) applied to municipalities. Nonetheless, they got busy looking into other sections of the act as to whether they might qualify. So it becomes a domino effect to some extent that has to be considered in looking at the overall picture.

Mr. MOLINARI. Down at the bottom of that same page, you talk about the secondary treatment established by the Clean Water Act as the universal norm and then you talked about the Federal act allowing for exceptions only where it could be deemed that environmental harm cannot be done where there is economic and social justification for relaxation.

Are there such cases in your region where exceptions should be granted that you know of?

Dr. MYTELKA. There are none that, as far as I know, have been granted. When we look at our own regulations we have come to the conclusion that the full degree of treatment required by our regulations is necessary if, in fact, the progress that is already made is going to continue so that we can reach the goals that have been set. Things are much better than they were 10 or 12 years ago but they are not going to get better if we allow backsliding and doing less treatment.

Mr. MOLINARI. I have one last question, Doctor, and this might be a rather sensitive one. But a commission such as yours that is forced to take positions that oftentimes are contrary to that which local governments—and we talk about local governments—like I said, in New York they have a great degree of influence obviously in the State.

Does this not create political problems for you in the sense that you are not doing what the big boys would want you to do and therefore you might find yourself facing some budgetary cutbacks and less able to do the job that you had the responsibility to do.

Dr. MYTELKA. Well, I can't say that our budgetary cutbacks have been due to that reason. I would say, however, yes, sir, when you

are dealing in an interstate area, you are first of all dealing, and we are dealing with the interests of three States.

We are also dealing with interests of large municipalities or regional authorities such as the city of New York, the Passaic Valley Sewerage Authority, and the Middlesex County Utilities Authority and so it is a difficult situation. All one can do is look at the situation, look at the regulations, call the shots as you see them and let the chips fall where they may, and that is what we have done.

Mr. MOLINARI. Would you be able to function better though, the bottom line question, if your funding came directly, let's say if it could be arranged, from the Federal Government and of course then that share would be cut out of the appropriation for the individual States?

Dr. MYTELKA. Well, we certainly think that additional funding is necessary. I am not sure, however, that I would favor being exclusively funded by the Federal Government and not by the States.

We are an interstate agency. We are an agency of the States and in this case we are able to bring to bear on our particular estuary, in our district, a perspecitve from an overall State point of view that may not always be in tune with an overall national perspective.

Did you have something you wanted to add to that?

Mr. WENDELL. Yes, sir, I wanted to add a couple of things, Mr. Chairman and Congressman Molinari.

In the first place, on the matter of political sensitivity, which you quite properly raised, this is really exactly why a commission such as ours exists. The business of attempting to reconcile sometimes divergent views among those who have under their control only part of an area is, by its very nature, a controversial one. Yet it is a set of problems which have to be solved.

There was reference when the previous witness was being questioned, to this very fact in other parts of the country, and it is not only a situation that exists in our region. We point out here particularly in our testimony that, where an agency such as ours does exist, it should be supported if you are dealing with interstate problems, because we do have experience in attempting to do this.

Now, you are quite right, Congressman. It is not easy. If it were easy perhaps there would be less need for us.

On the matter of funding, I think we have suffered most in recent years from the general cutbacks that have been in this area, or perhaps one would say from the failure to keep pace with inflation.

This is a universal problem. It is one that we face particularly because we are a small agency. We don't suggest that we ought to be a big agency. We don't want to duplicate what the States do, but there are particular interstate functions and roles here and you are quite right, Congressman, it is difficult to recognize because it does not fit the normal Federal, State, single State, single Federal Government relationship. But it is a very real problem.

Mr. MOLINARI. Well, I thank you.

I have seen some examples where you gentlemen have stood up to some very controversial subjects where we had some very powerful, powerful figures, mayors, Governors, and some of them, when they don't get their way, have a tendency to find retribution by

cutting your staff down. I know we have seen this too many times and with an agency like yours that concerns me deeply.

Mr. Chairman, I thank you.

And I thank the gentlemen for your courtesy in letting me proceed out of turn and I'd like to pursue a conversation with you after we receive your report.

Mr. ROE. That is fine.

Are there any further conversations with these witnesses?

[No response.]

Mr. ROE. Doctors, you have been very helpful. Thank you very much.

[Subsequent to the hearing, the following was received from Dr. Mytelka:]

NEEDS OF THE INTERSTATE SANITATION COMMISSION

The Interstate Sanitation Commission has both air and water quality programs. Both could be usefully expanded in order to meet the evironmental needs of the Greater New Jersey-New York-Connecticut Metropolitan Area. Because of the context in which this information was requested, only the water quality program is discussed.

Basically, the functions and responsibilities of the Commission are in:

1. monitoring of treatment plants,
2. monitoring of receiving water quality,
3. development and maintenance of a data base from which localized and regionwide environmental analyses can be made,
4. making regional water quality analyses, and
5. making and enforcement of interstate standards and requirements for the purpose of promoting regionwide compatability in the use of the common interstate water resources.

MONITORING OF TREATMENT PLANTS

The Commission inspects and samples Publicly Owned Treatment Works (POTWS) and industrial treatment facilities throughout its District. It analyzes the effluent samples for compliance purposes. Its reports of inspection and analysis results are provided to the treatment plant, the state in which the plant is situated, and to the U.S. EPA. Of course, the Commission also uses the information in its own regulatory program.

To be effective, such monitoring should be at least three to four times a year for POTWs and industrial facilities having outfalls independent of the public sewer systems. Before the current budget stringencies, the Commission met this program level for POTWs, but was not able to achieve it for industrial facilities. At present, treatment plant inspections and samplings for POTWs are mostly at the rate of twice a year for POTWs and only a total of 15 a year for industrial dischargers. The POTW visits need to be restored to their previous level and industrial monitoring should be increased to 100 sampling visits a year.

RECEIVING WATER MONITORING

The Commission has regularly sampled and analyzed the waters of the District. It formerly did so on boat runs which traversed much of the District waterbodies. These were done once a month in the winter and twice a month during the rest of the year, for a total of 18 separate monitorings a year. For reasons of efficiency in the use of personnel time and preservation of samples until they are brought to the laboratory, this work is now done by helicopter. However, the Commission can now afford only four traversals a year. Further, the outlying portions of the District were never included. The program should be expanded to restore the frequency previously maintained and to cover the entire District.

REMOTE AUTOMATIC MONITORS

Receiving water sampling from boats or helicopters is versatile in that it can cover both surface and bottom conditions and can traverse the waterways from shore to midchannel and from end to end. However, the sampling thus accomplished

and the attendant analyses are only of conditions at the discrete times when the boat or helicopter runs are made. Remote automatic monitor installations can make a continuous record of water quality conditions at the points where the equipment is installed and of water flowing passed the installation. The Commission has never been able to operate more than seven such monitors and has more often operated only three or four. This has been useful, but woefully inadequate for the size and diversity of the Interstate Sanitation District. To service the area of the Hudson River from Bear Mountain Bridge to the sea, the waterway system of the Greater New York Harbor, Raritan and Sandy Hook Bays and western Long Island Sound, 20 remote monitors should be installed and operated. The capital outlay involved would be on the order of $240,000.

It is necessary to report that within the past two months, the Commission has temporarily suspended continuous operation of its several existing remote monitors because of lack of sufficient funds. Also, its remote monitors are 20 years old and in serious need of overhaul or replacement.

CAPITAL EQUIPMENT

The Commission operates an environmental laboratory for the doing of the analytical work associated with its monitoring programs. This facility is also essential for the special projects which the Commission conducts from time to time in order to investigate particular conditions relating to the waters of part or all of the Region which it serves. A current example is the additional coliform studies which it has undertaken to ascertain what would be needed to open Raritan Bay as a reliable source of shellfish on a year-round basis.

The laboratory is in need of additional and replacement equipment. The last time it was outfitted with up-to-date major pieces of equipment was 12 years ago. Many of these items are either wearing out or becoming outmoded.

A particularly serious gap in the Commission's laboratory capability is its limited equipment for the analysis of samples to determine the presence of toxic substances, especially organics. To do this work effectively, a Gas Chromatograph-Mass Spectrophotometer is required. Once acquired, this instrument would serve for many years. However, its purchase price is approximately $150,000. The Commission has the personnel capability to make use of this instrument, but it has never been able to afford the capital outlay. The monitoring programs also produce many samples which should be tested for toxics but which are not now so analyzed because of the lack of a suitable instrument.

Examples of other major equipment needs are automated nutrient analysis instrumentation and a carbonaceous analyzer. Further, expansion of the Commission's field force which would occur if funds were available to do the monitoring proposed above, would require field equipment not now possessed by the Commission in sufficient amounts.

PERSONNEL

Additional field and laboratory personnel would be needed to expand the monitoring programs. However, some augmentation of professional and office support staff would need to accompany the higher program levels contemplated in this presentation of Commission needs. Assuming the increased activity projected here, the Commission should add an engineer, an environmental planner, a researcher and an attorney. It should also add two employees to its present office support staff which is composed of only four persons.

PHASING OF INCREASED ACTIVITY

While all of the deficiencies identified in this memorandum detract seriously from the work that the Commission should be doing currently, it is recognized that the increases proposed here would constitute an addition on the order of 70 to 75 percent in the organization's level of activity. Such an increase could not be accomplished efficiently within a few months. Thus, it should be considered that not all of the funding indicated would need to be available in a single year.

FUNDING REQUIREMENTS

The needs presented here do not involve the inauguration of new programs or the assumption of new responsibilities. The subject is the remedying of deficiencies which now prevent the Commission from accomplishing its agreed missions with the requisite degree of effectiveness. Accordingly, the funding indicated below would be

in addition to the appropriations from the member states and the U.S. EPA grants to the Commission under Section 106 of the Clean Water Act.

The needs are of two kinds:

1. increased operating funds, and
2. onetime capital outlay funds.

Some agencies are able to satisfy their capital outlay needs by saving enough from their income to build reserves from which large expenditures can be met. As with most governmental agencies, the Commission does not have reserves to serve any such purpose. It relies on annual appropriations and grants which have never been large enough to make possible the purchase of costly capital equipment from current funds. Listed below are dollar amounts which represent in funding terms the needs just discussed.

Increased operating funds (including overhead): 13 employees (per year)	$600,000
Onetime capital outlay funds:	
Gas chromatograph-mass spectrophotometer	150,000
20 remote monitors (including installation)	240,000
Automated laboratory equipment (including instruments for nutrient and carbonaceous analyses)	50,000
Equipment and transportation for field personnel	40,000
Total	480,000

Our next witness is Mr. Buddy Beach, vice president for environmental affairs, Consolidated Coal Co. and the American Mining Congress in Pittsburgh, Pa., and chairman of the AMC's Water Quality Subcommittee.

I welcome Mr. Beach to our committee.

TESTIMONY OF BUDDY BEACH, VICE PRESIDENT, ENVIRONMENTAL AFFAIRS, CONSOLIDATED COAL CO., PITTSBURGH, PA., AND CHAIRMAN, AMC'S WATER QUALITY SUBCOMMITTEE

Mr. BEACH. Good morning.

My name is Buddy A. Beach. I am vice president of Consolidation Coal Co. for environmental affairs, and chairman of the American Mining Congress Water Quality Control Subcommittee. This morning I am representing the American Mining Congress, a national association of companies that produce most of the Nation's supply of metals, coal, and industrial and agricultural minerals.

We appreciate the opportunity you have extended to us, Mr. Chairman, to express the mining industry's views on Clean Water Act amendments. Most of the facilities in our industry discharge effluents to waters of the United States and are directly regulated by the Clean Water Act.

AMC supports the purposes and basic structure of the Clean Water Act. As an industry, we have faithfully complied with the act's mandates, expending large sums of money to do so. Our mines, mills, smelters, and refineries have achieved a very good record of pollution reduction through compliance with the act's technology-based standards. It is out of the industry's extensive experience with the provisions of the act that we make recommendations for amending it, not to weaken it but to make certain provisions more workable.

Due to the schedule on which EPA has been promulgating its technology-based effluent limitations guidelines for industry categories, it is inevitable that the compliance deadlines in section 301 of the act must be extended beyond July 1, 1984. For example, it will be at least late 1984 before phases I and II of the regulations for nonferrous smelters and refineries are promulgated.

The deadline for compliance must be extended to permit regulated facilities sufficient time to raise the capital and acquire and install the technology necessary to meet the prescribed limitations. AMC favors extending the compliance deadlines to at least 36 months from the date that the pertinent effluent limitations guidelines become effective.

When Congress wrote the Federal water pollution control law in 1972, it rightfully recognized that, for various reasons, not all surface waters could be upgraded to fishable-swimmable levels of water quality. Accordingly, section 303 of the Clean Water Act directs the States to establish water quality standards to protect public health and enhance water quality, taking into account the stream's existing uses and values.

Furthermore, in section 303 and 304, Congress directed that the standards are to be based on national water quality criteria that reflect the latest scientific knowledge and take account of multiple use of the waters.

These statutory provisions, however, were implemented in an inflexible way. In response to Federal pressure in the form of the act's fishable-swimmable goal and EPA's policy of presumptive applicability, States set unrealistically high use classifications for various streams and applied the national criteria automatically, irrespective of a stream's particular characteristics.

More recently, EPA has revoked its policy of presumptive applicability and proposed regulations that would assist States in establishing use designations suited to the characteristics of a particular water body and in modifying national criteria based on site-specific conditions.

AMC favors this realistic and scientific approach to the setting of State water quality standards. Congress should take care that any Clean Water Act amendments preserve State flexibility in setting standards that take into consideration a water body's use and value for public water supply, agricultural and industrial purposes, propagation of fish and wildlife, and the like. States should be encouraged to develop criteria and standards that reflect the site-specific nature of particular water bodies.

AMC recommends that ephemeral and intermittent streams be exempted from water quality standards. The imposition of water quality-based effluent limitations on streams without careful consideration of stream characteristics may have unfair and burdensome results. This is true particularly in the case of ephemeral and intermittent streams that have no natural flow during dry weather. In such periods, effluent from the discharger becomes the stream flow.

This situation exists often in mountainous areas in the upper reaches of streams that by their nature are intermittent, and in the arid West where streams may be dry for sometimes large portions of the year.

In cases where the effluent from the discharger becomes most or all of the stream flow, technology-based standards of the act should be controlling. Effluent limitations that require controls beyond BAT should not be imposed except where it is shown on a case-by-case basis that there is a significant environmental benefit. Otherwise, an economic burden may be imposed that is not justified and,

in many cases, is not achievable. As you know, BAT defines the best technology that is economically achievable.

Section 302 of the Clean Water Act authorizes EPA to establish effluent limitations, based on water quality, that are more stringent than the technology-based limitations required under section 301. Before imposing these more stringent limitations, however, EPA must consider the economic and social costs of achieving them. They cannot be imposed if there is no reasonable relationship between the economic and social costs and the benefits to be obtained.

While such considerations of economic and social costs are eminently reasonable, the value of this provision is limited because it applies only to EPA-imposed water quality-based effluent limitations. AMC urges that this provision be extended to State-imposed water quality-based effluent limitations such that economic and social costs and impacts may be considered during permit proceedings.

The term for NPDES permits should be extended to at least 10 years. Such a change will provide certainty for planning and ease the administrative burden upon industry and government, but would not diminish protection to the environment. The bill approved by the Senate Environment and Public Works Committee and pending Senate floor action contains such a provision and we would urge this committee to adopt a similar provision.

At many mining sites, storm water runoff, which once flowed across disturbed areas and became contaminated, is now diverted away from contamination by conveyances and structures built by the operator. These structures prevent or minimize storm water runoff contamination resulting from contact with active operating areas.

The structures and conveyances built to divert such run-off should be excluded from the act's definition of point source and thus not be subject to discharge permits. To do otherwise penalizes operators for using good management practices and making expenditures to prevent storm water runoff contamination. The construction of such diversion facilities is a preventive, often voluntary measure that does not warrant an NPDES permit.

Here again S. 431, as approved by the Senate Environment and Public Works Committee, contains a provision exempting such diversion structures associated with mining, and oil and gas operations from the permitting process. AMC strongly urges this committee to adopt an equivalent provision.

Mr. Chairman, this concludes my statement. I will attempt to answer any questions you may have concerning the matters I have discussed.

Mr. ROE. Thank you very much for your statement, Mr. Beach. Do any of the members have any questions?

[No response.]

Mr. ROE. You are getting off very easily. We thank you for being here with us this morning and we will consider your recommendations.

Mr. CLINGER. Mr. Chairman, I was going to ask unanimous consent if we might submit some questions to Mr. Beach for the record.

Mr. ROE. Fine, no objection.

They will submit some written questions to you for your review if you will be kind enough to respond.

[The questions to Mr. Beach and responses follow:]

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Pierre Gousseland, Greenwich
A.M. Wilson, San Francisco
Robert H. Quenon, St. Louis
Ralph F. Cox, Denver
Thomas D. Barrow, Houston
Frank A. McPherson, Oklahoma City
W.A. Griffith, Wallace ID
Robert F. Anderson, Cleveland
Calvin A. Campbell, Jr., Chicago
Harry M. Conger, San Francisco
Robert M. McCann, Bethlehem
Richard G. Miller, Jr., Chicago
Walter E. Ousterman, Jr., Oakland
R.J. Gary, Dallas
Michael A. Morphy, Los Angeles
Charles W. Parry, Pittsburgh
Frank V. McMillen, Danbury CT
R.J. Assheton, Los Angeles
Kenneth J. Barr, Englewood CO
A.W. Calder, Pittsburgh
Gino P. Giusti, Stamford
Ralph L. Hennebach, New York
William G. Kegel, Indiana PA
Edward J. Killian, Dallas
John A. Wright, Clayton MO
Thomas C. Graham, Pittsburgh
Robert McInnes, Cleveland
Ian MacGregor, Greenwich †

* Immediate Past Chairman
† Honorary

February 6, 1984

The Honorable Arlan Stangeland
U.S. House of Representatives
Washington D.C. 20515

Dear Congressman:

On October 20, 1983, Buddy A. Beach testified on behalf of the American Mining Congress (AMC) before the House Water Resources Subcommittee concerning amendments to the Federal Water Pollution Control Act. Subsequently, you sent Mr. Beach a number of questions in writing to be answered for the hearing record. Below is a restatement of each question followed by AMC's response.

Question: Mr. Beach, on page 2 of your statement, you indicate that "it will be at least 1984 before Phases 1 and 2 of the regulations for nonferrous smelters and refineries will be promulgated." Does this reflect, as I believe it does, a new delay in terms of EPA's currently planned promulgation schedule? I was under the impression that the agency intended to have these regulations promulgated by July 1, 1984.

Response: EPA's most recent Regulatory Agenda indicates that Effluent Guidelines for Nonferrous Metals Manufacturing (Phase I) should have been promulgated by the end of January 1984. 48 Federal Register 47864, 47884 (October 17, 1983). The guidelines for Phase II are scheduled for proposal in February 1984 and for promulgation in November 1984. Id. at 47886.

As of this date, neither the Phase I nor II regulations have been published. EPA has indicated to us that it expects the Phase I final regulations to be signed and sent to the Federal Register by February 17, 1984.

The schedule for EPA's proposal and promulgation of these regulations is governed by a consent decree under the jurisdiction of the U.S. District Court for the District of Columbia. On August 2, 1983, the court issued an order revising the consent decree to allow the

Continued . . .

rulemaking schedule that contains the above-stated dates for Phase I and II rules. NRDC v. Ruckelshaus, Nos. 2153-73 et al. (D.D.C., August 2, 1983) (order revising consent decree).

The previous court-approved schedule indicated that Phase II rules would be proposed in September 1983 and promulgated in June 1984. See NRDC v. Gorsuch, Nos. 2153-73 et al. (D.D.C., October 25, 1982) (order revising consent decree).

Question: On the bottom of page 2 of your statement, you suggest that EPA's policy of "presumptive applicability" led states to set unrealistically high use classifications for various streams. Would you expand on this statement a little more for us? How and when was the concept of presumptive applicability developed? To what extent were state standards established on the basis of this concept? Why did the agency revoke the presumptive applicability policy? The committee would be most interested in any analysis that you might have or could make available, providing as many specific examples as possible which illustrate the problem you are calling to our attention.

Response: The response to this question has been prepared on AMC's behalf by Richard O. Austermann, an attorney with Climax Molybdenum Company in Denver. Due to the length of the response, it is attached as an appendix to this letter.

Question: On page 3 of your statement, you recommend that ephemeral and intermittant streams be exempted from water quality standards. If this policy recommendation were to be accepted, how should ephemeral and intermittant streams be defined?

Response: Intermittant and ephemeral streams have well-known meanings in scientific literature, as illustrated by the following:

> Stream channels that carry water part of the year and are dry the other part, but which receive flow from the groundwater table when it is high enough, are called intermittant. [Morisawa, Marie, Streams: Their Dynamics and Morphology (New York: McGraw-Hill, 1968), p. 11.]
>
> Ephemeral streams are streams or portions of streams that flow only in direct response to precipitation. They receive little or no water from springs and no long-continued supply from melting snow or other sources. The stream's channel is at all times above the water table. [American Geological Institute, Dictionary of Geological Terms (Garden City, N.Y.: Dolphin Books, 1962), pp. 162-3.]

Question: On page 5 of your statement, you indicate support for a provision in S. 431 which extends NPDES permit life from five years to a maximum of ten years. If I am not mistaken, the

Senate provision is rather tightly drawn to (1) require that the permit be reopened and modified under a number of listed conditions and (2) apply only to permits which do not include a waiver or modification of any otherwise applicable requirement under the act. Some concern has been raised that these restrictions may be overly burdensome. Are you satisfied that the provision as drawn is implementable and beneficial?

Response: AMC has concerns that the provision in S. 431 is too tightly drawn. Specifically, we are concerned with that portion of the provision requiring modification of a permit

> . . . whenever new or revised requirements under Sections 301, 302, 303, 304, 307, 403 or 405 are established which are more stringent than any requirement in the permit or which control pollutants not limited in the permit and such modification implements these new or revised requirements.

This provision would significantly revise the permit modification and reopener provisions of existing law.

EPA existing modification provisions are set forth in 40 C.F.R. §122.62 (48 Federal Register 14146, 14174; April 1, 1983). Under these regulations, reopening and modifying a permit is a discretionary responsibility of the permit-issuing authority. The only mandatory modification requirement is set forth in §122.44, which would require the automatic incorporation of more stringent limitations promulgated under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2).

The Senate bill provision would destroy this flexibility and discretion, making the process mandatory over a broader range of circumstances. The provision will result in increased administrative burdens for both the permit issuer and the permittee and will greatly decrease the certainty associated with the holding of an approved NPDES permit.

AMC believes that the carefully crafted modification procedures outlined in EPA's existing regulations are workable, practicable and not in need of the wholesale revision that is specified in the Senate bill. We urge the subcommittee to adopt a provision that extends the fixed term of NPDES permits but allows EPA's existing regulatory provisions regarding modification, revocation and termination of such permits to remain in place.

Question: On page 5 of your statement, you suggest that structures and conveyances built to divert stormwater-runoff should be excluded from the act's definition of "point source." How are such conveyances and structures currently permitted? Could they be handled appropriately by issue of general permits?

Response: It appears that there is no consistent policy among the EPA regions regarding the permitting of stormwater diversion structures at mining operations. Technically such structures do fall within the definition of "point source," and in some instances permits have been required (see e.g. "Statement of the Western Regional Council before the Subcommittee on Water Resources, House Committee on Public Works and Transportation," September 20, 1983, p. 3). It appears that such diversion structures could be administratively addressed by issuance of general permits. While the structures may differ in their construction, their general effects would be similar, that is they would be diverting natural stormwater runoff that has not come in contact with previously mined or disturbed areas.

The Senate provision specifically removes from the exemption runoff contaminated by "toxic pollutants." This limitation effectively vitiates the effectiveness of the amendment. Stormwater runoff from undisturbed areas surrounding mining sites may contain some low levels of minerals due to the naturally mineralized areas over which the water flows. AMC does not believe that the mining company that builds a diversion structure should be required to treat such stormwater to remove background levels of inorganics that appear on the Section 307 toxic pollutants list. We suggest that individual permit-issuing authorities be given discretion to address this issue on a case-by-case basis or that a general permit be promulgated that authorizes the discharge of stormwater runoff containing only background levels of contaminants.

Question: The committee has received a number of comments concerning how the requirements of Section 404 of the act might be improved. Are you satisfied with the current provisions of Section 404 and how they are being implemented? If not, would you please provide the committee with your suggestions for making Section 404's dredge and fill permit program more workable and effective?

Response: The dredge and fill permit program in Section 404 is one of the most controversial aspects of the Clean Water Act. Much of AMC's concern for this section arises from its overly expansive scope and its ambiguous and complicated multiagency administration.

The jurisdictional scope of the permit program should be limited. The program should be designed to protect only those wetlands truly in need of protection. Not all wetlands are of the same value and not all merit high priority protection. As it is currently written and administered, the act does not recognize this variability in wetlands' values.

Also, Section 404(c) should be amended to provide that only the Corps of Engineers has the authority over the issuance and supervision of Section 404 dredge and fill permits. At the very least, the role of the Corps should be strengthened

vis-a-vis other agencies. Joint jurisdiction is unnecessary and only adds to uncertainty, time delays and costs of administering the Section 404 permit program.

Congress should clarify whether the section's (b)(1) guidelines are mandatory or discretionary.

The act should be amended to reduce impediments to state administration of the permit program. The existing legislative and regulatory provisions are so cumbersome that no states have been willing to accept primacy for the program.

Question: To what extent do you believe the act's current provisions relating to the fishable-swimmable goal of the act should remain unchanged? Would you please explain the reasons for your position?

Response: AMC is not advocating at this time that the fishable-swimmable goal of the act be modifed.

Hopefully, these responses will be helpful to the subcommittee. If you have any questions, please call me at (202)861-2878.

Sincerely,

Douglas E. McAllister

Douglas E. McAllister
Assistant Chief Counsel

Enclosure

cc: Mr. Joseph A. Italiano, Committee on Public Works and Transportation
Mr. John Doyle, Water Resources Subcommittee

APPENDIX A

EPA'S DOCTRINE OF "PRESUMPTIVE APPLICABILITY" AND OTHER RELATED CONSTRAINTS UPON THE STATES' ADOPTION OF WATER QUALITY STANDARDS

1. Nature of the Problem. EPA's "presumptive applicability" doctrine, and the effect this doctrine has had on the development of state water quality standards, is only one example of a somewhat broader problem relating to the process by which water quality standards are adopted and implemented under the Clean Water Act. In order to describe the impact of "presumptive applicability" in a meaningful way, I will have to place it in the context of the broader problem.

Ever since Congress enacted the Water Quality Act of 1965. the state and federal governments have been engaged in an ongoing effort to adopt and implement mutually acceptable water quality standards. Prior to 1973, these standards were limited in their effect to "interstate" waters. Beginning in 1973, standards have been required for all "navigable" waters.

From the very beginning of this effort, the federal government has put pressure on states to adopt ambitious water quality goals. This pressure has assumed at least three forms:

i. Requirements as to what kinds of uses states must include in their standards;

ii. Restrictions on changes to these uses; and

iii. Restrictions on the states' ability to "tailor" numeric water quality criteria to local needs and conditions.

These restrictions are sometimes distinguished from one another for the purpose of analysis. However, in practice, they always operate together; you cannot tamper with any one without affecting the others.

The doctrine of "presumptive applicability" was one ill-fated manifestation of the third form of restriction. Although this policy has been "revoked" by EPA, some of its elements continue to exist, albeit in altered form. Furthermore, its effects linger on in the form of unreasonably stringent water quality criteria which sometimes cannot be modified because of restrictions on "downgrading" or other "degradation" (which are examples of the second form of restriction). The purpose of this paper will be to describe how and why this occurred, why it is not good policy, and how the process might be improved.

2. Development of Federal Policy on Water Quality.

A. The Formative Period, 1965-1972 -- Prevention of Degradation. Section 5(a) of the Water Quality Act of 1965 amended Section 10(c) of the Federal Water Pollution Control Act to require states to adopt water quality standards for "interstate" waters sufficient to "protect the public health or welfare, enhance the quality of water and serve the purposes of this Act." The purpose of the Act was "to enhance the quality and value of our water resources and to establish a national policy for the prevention, control, and abatement of water pollution."

The Interior Department, which administered the Act at that time through the Federal Water Pollution Control Administration, never adopted any formal policy or regulation to define what it might take to "serve the purpose of the Act." However, it did informally adopt the following "policy guidelines":

> 1. Water quality standards should be designed to 'enhance the quality of water'. If it is impossible to provide for prompt improvement in water quality at the time initial standards are set, the standards should be designed to prevent any increase in pollution. In no case will standards providing for less than existing water quality be acceptable.
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> * * *
>
> 3. Water quality criteria should be applied to the stream or other receiving water or portions thereof . . . In the absence of appropriate numerical values or biological parameters, criteria should consist of verbal descriptions in sufficient detail as to show clearly the quality of water intended . . .
>
> * * *
>
> 5. Water quality criteria should be accompanied by a description of present water quality and uses, together with uses expected in the future and the water quality required to make those uses possible. The water quality standards proposed by a state should provide for:

(a) Potential and future uses as well as the present intended use and uses;

(b) The upgrading and enhancement of water quality and the use or uses of streams or portions thereof that are presently affected by pollution;

(c) The maintenance and protection of quality and use or uses of water now of a high quality or of a quality suitable for present and potential future uses.

* * *

8. No standard will be approved which allows any waste amendable to treatment or control to be discharged into any interstate water without treatment or control regardless of the water quality criteria and water use or uses adopted. . .

Hearings on Water Pollution Before the House Committee on Public Works, 90th Cong., 1st Sess. 86-88 (1976); Hearings Before the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works, 90th Cong., 2nd Sess. (March 27, 1968). Soon thereafter, the Department published its first set of water quality criteria. Water Quality Criteria -- Report of the National Technical Advisory Committee to the Secretary of the Interior (April 1, 1968) (now referred to as "the Green Book").

Although guideline 1 would seem to have established an absolute non-degradation requirement, the policy does not appear to have been interpreted in this way. In a press release dated February 8, 1968, Secretary Udall stated that:

> Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of a state will not be lowered in quality unless and until it has been affirmatively demonstrated to the state water pollution control agency and the

> Department of the Interior that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses. . . . (emphasis added)

In these statements we can see the beginning of several policies that have continued in effect to the present:

i) States were encouraged to "upgrade" their water. However, no specified uses or levels of quality were identified as minimum acceptable goals.

ii) Existing uses were to be protected.

iii) Existing "high quality" waters were to be protected, although degradation in quality would be allowed for "necessary" development.

These guidelines were adopted with little or no public discussion. Although they were controversial, they were not the focus of much attention in the debate preceding adoption of the 1972 amendments. In this debate, attention was primarily directed toward problems created by the absence of effective enforcement mechanisms to implement water quality plans. In response to this problem the 1972 amendments created the NPDES permit program and a two-stage process for meeting the goals of the Act. The first stage consisted of the development and implementation of technology-based effluent limitation guidelines representing secondary treatment and BPT. The second stage consisted of the development and implementation of technology-based effluent limitations representing BAT. Both of these tasks were entrusted almost entirely to EPA.

The 1972 amendments retained requirements for "going beyond BAT", if necessary to protect water quality standards. However, little thought was given to this requirement. Indeed, most of the controversy related to the question of whether BAT was affordable. In this regard, considerable concern was expressed over the fact that Congress was establishing ambitious goals without knowing the cost of attaining them. This criticism was defused by assurances that the process for adopting standards was flexible enough to allow for meaningful consideration of economic impacts.

While the development of technology-based effluent guidelines was left almost entirely to EPA, the 1972 amendments designed the process of "going beyond BAT" as a joint enterprise between EPA and the states. This division of authority was the result of a compromise between the House and Senate. S. 2770 generally called for a strong federal role via the imposition and enforcement of strict deadlines for attainment of the Act's goals. H.R. 11896 gave the states more flexibility.

As finally enacted, the 1972 amendments contained four sections which relate to the process of going beyond BAT: Section 101 sets forth the goals of the Act; Section 303 requires states to adopt water quality standards, and to adopt a statewide "continuing planning process"; Section 208 requires states and local agencies to adopt "areawide" waste treatment management plans, i.e., plans to implement water quality goals established pursuant to Section 303; and Section 302 gives EPA residual authority to impose effluent limitations that are better than BAT, if necessary to meet the goals of the Act (not applicable standards).

B. Post-1972 Development of Federal Policy Regarding Use Restrictions -- "Fishable, Swimmable" Waters as the Norm. For the first several years after adoption of the 1972 amendments, EPA directed most of its energy toward the development of technology-based effluent limitation guidelines. Little attention was paid to the problem of water quality standards, or going beyond BAT. In 1973 and 1974 the agency did adopt interim regulations governing "statewide" continuing planning processes and "areawide" waste treatment management programs. See 38 Fed. Reg. 8034-8039 (March 27, 1973); 38 Fed. Reg. 13567-13571 (May 23, 1973); 38 Fed. Reg. 14230-14232 (May 30, 1973); 38 Fed. Reg. 25681-25683 (September 14, 1973); 39 Fed. Reg. 17202-17206 (May 13, 1974); 39 Fed. Reg. 19634-19639 (June 3, 1974). However, these rules were primarily procedural in character. They did little to prescribe substantive requirements:

> Recommendations for revisions of standards shall consider the objectives of the Act, as specified in § 101(a) of the Act, and the social, economic and technical, including natural, considerations for achieving these objectives.

Former 40 CFR § 131.308(b), adopted at 39 Fed. Reg. 19642 (June 3, 1974) (emphasis added).

In its final regulations relating to areawide waste treatment management plans, EPA did not require the states, as planning agencies for "nondesignated" areas, to prepare detailed treatment plans meeting the requirements of § 208(b)(2) (F through K). See former 40 CFR § 126.20, adopted at 38 Fed. Reg. 25683 (September 14, 1973). This appears to have been done by the agency in an attempt to reconcile apparently conflicting requirements of § 208 and § 303. However, NRDC and EDF challenged this decision, and in the case of NRDC v. Train, 396 F. Supp. 1386 (D.D.C. 1975), the court held that EPA's action was illegal.

Shortly after this decision, EPA proposed amendments to 40 CFR Parts 130 and 131. In part, these proposals responsed to NRDC v. Train by beginning the integration of the § 208 and § 303 planning processes. In addition, they rearticulated an antidegration policy for the first time since adoption of the 1972 amendments. They also indicated that a more aggressive policy regarding water quality standards would soon be developed by the agency:

> The primary objective of the State water quality management plans will be to achieve the 1983 national water quality goal of the Act, where attainable. The plans will . . . . identify necessary revisions to water quality standards. . . .
>
> * * *
>
> EPA will prepare guidelines concerning the development of State water quality management plans to assist the States in carrying out the provisions of these regulations. In addition, EPA anticipates proposing, toward the end of calendar year 1975, regulations governing the review and revision of water quality standards under § 303(c) of the Act and the determination of water quality related effluent limitations under § 302 of the Act. These regulations, therefore, will address the relationship between the social and economic considerations required in § 302 of the Act and the attainability of the national water quality goal expressed in § 101(a)(2) of the Act.

40 Fed. Reg. 29887 (July 16, 1975).

On November 28, 1975, after little or no public debate, EPA issued final regulations which completed the integration of the § 208 and § 303 planning processes, and which fully articulated the agency's policy on water quality standards. In these regulations EPA clearly indicated that it considered the § 101 goals to be mandates, and that the agency intended to take a dominant role in the process of going beyond BAT. The only power to be reserved to the states was flexibility to determine how the goals of the Act should be met:

> The final regulations reflect the primary role of the states in coordinating planning on a statewide basis, consistent with Judge Smith's court order . . . .
>
> * * *
>
> State and areawide planning agencies have been concerned throughout the development of these regulations that EPA has not adequately addressed the issue of revisions to water quality standards and development of a statewide policy on anti-degradation. These regulations set forth clearly EPA's policy regarding the role of water quality standards in achieving the goals of the Act and the agency's anti-degradation position.
>
> EPA strongly supports the establishment of water quality standards which will support the protection and propagation of fish, shellfish and wildlife and recreation in and on the water. In furtherance of this objective, EPA believes that water quality standards should be established at levels consistent with the national water quality goal of § 101(a)(2) of the Act for every stream segment wherever those levels are attainable . . . . While standards at these levels may not be attainable now for some stream segments, EPA expects the state to continue to review their standards and upgrade them to the national water quality goal whenever such standards become attainable.

> EPA Regional Administrators will review the actions of the States regarding these revisons and will, when appropriate, request additional information from the States to evaluate the basis for establishing standards at levels less stringent then the national water quality goal.
>
> These regulations further provide that existing water quality uses shall be maintained, and where existing water quality standards do not specify and protect the existing use, that the state shall upgrade its standards to achieve such specification and protection of these uses. These regulations also provide that designated uses in existing water quality standards shall be maintained and that the existing standards shall not be downgraded to designate and protect less restrictive uses unless one or more of the criteria listed in § 130.17(c)(3) are met.
>
> It should also be emphasized that in addition to the water quality standards established by the states, EPA's commitment to achieving the national water quality goal will also be implemented through the application of § 302 of the Act. . . . EPA is convinced . . . that the adoption of stringent water quality standards, supplemented with appropriate use of § 302 limitations will make the achievement of the national water quality goal a reasonable prospect.
>
> The agency's anti-degradation policy is the same in many respects as the policy that EPA and its predecessor agency have encouraged the states to adopt in the past.

40 Fed. Reg. 55335-55336 (November 28, 1975) (emphasis added).

These final regulations were immediately challenged. However, in the case of Commonwealth Edison v. Train, 649 F.2d 481 (7th Cir. 1980), the court held that they were not ripe for review.

On July 10, 1978 EPA restated this policy, and gave notice that it was considering the adoption of further restrictions on the states' ability to "downgrade" use classifications. See 43 Fed. Reg. 29588-25292 (July 10, 1978). During the next several years draft copies of a new regulation were circulated to the public, but nothing was ever formally proposed.

The next formal proposal occurred on October 29, 1982. 47 Fed. Reg. 49234-49252. In this proposal EPA attempted to address some of the issues raised in the Commonwealth Edison case. However, the final regulations, which were issued on November 8, 1983, essentially revert to the old policy. See 48 Fed. Reg. 51400-51413.

C. Post-1972 Development of Federal Policy Regarding Criteria -- What are "Fishable, Swimmable" Waters? As noted above, the first federal water quality criteria were issued in 1968 by the Federal Water Pollution Control Administration pursuant to the Water Quality Act of 1965. This "Green Book" was intended as guidance only, to be used by state agencies in conjunction with their knowledge of local conditions.

In 1973, soon after responsibility was transferred to EPA, the agency published a draft revision to the Green Book. See 38 Fed. Reg. 29646-29647 (October 26, 1973). This document is now referred to as "the Blue Book". In the notice announcing the availability of this document, the agency stated that:

> The proposed criteria prescribe maximum limits of acceptability for constituents in the nations's waters. . . .
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> * * *
>
> The new criteria now being proposed will be the basis for future revisions of state standards.
>
> * * *
>
> The EPA criteria for harmful constituents . . . . prescribe specific maximum acceptable limits. . . .

38 Fed. Reg. 29646 (October 26, 1973) (emphasis added).

On August 6, 1976 EPA published its final version of the new criteria document. Quality Criteria for Water, EPA (July 1976); see 41 Fed. Reg. 32947-32948. This document is now referred to as "the Red Book". In the transmittal letter for the Red Book, Eckardt Beck noted that "[w]ater quality criteria do not have direct regulatory use." However, Administrator Train, in his Foreword, noted that "[g]uidelines to implement the consideration of criteria . . . in the development of water quality standards . . . are being developed. . . ."

On July 10, 1978 the agency formally announced these guidelines. They assumed the form of the doctrine of "presumptive applicability":

> The numerical limits in the Red Book are derived on a national scale and generally do not take into account the variability of waters from State-to-State. EPA therefore does not require that States automatically adopt the Red Book numbers for all of their waters.
>
> Nevertheless, EPA feels that the data base for the Red Book numbers is sufficiently broad for the numbers to have presumptive applicability. EPA's policy is that a State may adopt a numerical concentration level for a Red Book pollutant that is less stringent than the Red Book number, but only if a State provides adequate technical justification for the deviation.
>
> * * *
>
> Some unpolluted waters in the nation may exceed designated criteria for particular consituents. There is variability in the natural quality of water and certain organisms become adapted to that quality, which may be considered extreme in other areas. Thus, for those particular waters EPA can accept less stringent numerical criteria than those in "Quality Criteria for Water" when a State can justify such action because of natural background water quality . . . . Criteria for manmade or man-induced pollutants must be compatible with those found in the "Quality Criteria for Water".

43 Fed. Reg. 29588, at 29590, 29592 (July 10, 1978) (emphasis added).

In lawsuits first filed in 1973 and 1975, several environmental groups challenged EPA for its failure to adopt a viable program for the control of toxic pollutants under § 307 of the Act. In a settlement agreement entered into on June 7, 1976 the agency agreed to adopt such a program. See NRDC v. Train, 8 ERC 2120 (D.D.C. 1976). However, the settlement went far beyond § 307. In particular, in paragraph 11 of the consent agreement, EPA agreed to adopt new water quality criteria for 65 specified "toxic" pollutants.

On May 18, 1978 EPA published technical guidelines it planned to use in developing these criteria. 43 Fed. Reg. 21506-21518. A review of these guidelines, and subsequent elaborations thereof, makes it clear that the criteria are designed to provide an extremely high degree of protection for uses, even when protection of public health is not involved. In effect, EPA is giving precise meaning to the "fishable, swimmable" standard. For instance, in evaluating toxicity data for the protection of aquatic life, EPA elected to discard all data from tests in which test organisms had previously been exposed to "significant concentrations" of test material. See 44 Fed. Reg. 15971 (March 15, 1979). Thus, the criteria do not take into account the tolerances that aquatic species develop to real-world concentrations of pollutants.

The criteria also include substantial "margins of safety". For instance, to derive criteria for acute toxicity to aquatic life, the agency first calculated the geometric mean of "standardized" 96-hour LC50s -- that is, concentrations of pollutants that will kill one-half of a standardized test population in 96 hours. These figures were then multiplied by a "sensitivity factor" of 0.2564 to derive the criteria. See 43 Fed. Reg. 21507. To derive criteria to protect against chronic toxicity to aquatic life, the agency first calculated the geometric mean of "standardized" MATCs -- that is, maximum acceptable toxicant concentrations. These represent the highest concentrations of pollutants that will have no measurable adverse effect on survival, growth, or reproduction of a species. The average MATCs were then multiplied by a "sensitivity factor" of 0.149 to derive the criteria. See 43 Fed. Reg. 21507 (May 18, 1978).

As a result of these statistical manipulations, criteria for the protection of aquatic life are set at a level which will, on average, protect 98% of exposed test populations. As EPA has stated:

> The criteria for the protection of aquatic life specify pollutant concentrations which, if not exceeded, should protect most, but not all, aquatic life and its uses.

45 Fed. Reg. 79321 (emphasis added). See also "The Philosophy of Quality Criteria" in the Red Book. In most cases, these aquatic life criteria are the limiting factors for the protection of water quality, i.e., no other criteria are more stringent.

Water quality criteria for the 65 specified "toxic" pollutants were proposed on March 15, July 25, and October 1, 1979. 44 Fed. Reg. 15926-15981, 43660-43697, and 56628-56657. Final criteria for all but one of these pollutants were published on November 28, 1980. 45 Fed. Reg. 79318-79379. They supercede Red Book criteria in the event of conflict. Otherwise, Red Book criteria remain in effect.

In the preamble to the final "toxics" criteria, EPA formally rescinded its doctrine of "presumptive applicability":

> In the ANPRM, EPA announced a policy of "presumptive applicability" for § 304(a)(1) criteria codified in the "Red Book" . . . . EPA is rescinding the policy of presumptive applicability because it has proven to be too inflexible in actual practice.
>
> . . . . In certain circumstances, the criteria may not accurately reflect the toxicity of a pollutant because of the effect of local water quality characteristics or varying sensitivities of local populations. For example, in some cases, ecosystem adaptation may enable a viable, balanced aquatic population to exist in waters with high natural background levels of certain pollutants. Similarly, certain compounds may be more or less toxic in some waters because of differences in alkalinity, temperature, hardness, and other factors.

45 Fed. Reg. 79319-79320 (November 28, 1980).

This rescission is as significant for what it said as for what it did not say. First, the agency did not substitute a clear-cut standard of review for the old standard. Thus, in the event of disagreement between a state and EPA, it is unclear what the state must do to obtain approval of its water quality standard. Second, the agency suggested that criteria may not be relaxed when aquatic organisms have become tolerant of manmade pollution. Instead, to justify the relaxation of criteria, tolerance must be based on a response to natural pollutants. Third, the agency did not indicate that states may provide a lesser degree of protection to aquatic life, and still have a "fishable, swimmable" stream within the meaning of Section 101.

In the case of Mississippi v. Costle, 625 F. 2d 1269 (5th Cir. 1980), the Fifth Circuit held that EPA is free to substitute its own criteria for those adopted by a state, if necessary to protect state-designated uses.

D. Summary of Current Policy. Due to the length of the preceding discussion, before proceeding further it will be useful to summarize EPA's current restrictions on state modification of water quality standards:

A. As to use classifications --

i. "Fishable, swimmable" use designations are deemed to be the norm. All stream segments must carry all use classifications identified in § 101(a) of the Act unless they are "unattainable".

ii. Uses are "unattainable" only if one or more of the following criteria are met: the use cannot be met due to natural conditions; the use cannot be met due to irremedial man-induced conditions; or attainment of the use would result in substantial and widespread economic and social impact.

iii. "Existing" uses may never be downgraded. Nor may they be "subcategorized" to provide a lower degree of protection to the use.

iv. "Designated" but "non-existing" uses may be downgraded, but only if the designated use is "non-attainable", as described above.

B. As to numeric criteria or standards --

i. "High quality" waters may be degraded to criteria levels necessary to protect all designated uses, but only if such degradation is necessary to accommodate important economic or social development.

ii. To protect designated uses, EPA criteria adopted under § 304(a)(1) of the Act are the norm. States bear the burden of proving that any deviation from this norm is "appropriate".

iii. For a deviation to be "appropriate", it appears that the toxicity of the relevant parameter must be reduced by local natural conditions or acclimation to such conditions.

iv. Alternate criteria must provide the same degree of protection for uses as EPA criteria.

3. Effect of EPA Policy on State Action. In my experience, the foregoing federal policies have had a profound impact on state action. As an example I will use Colorado, the state with which I am most familiar.

A. The Formative Period, 1965-1972 -- Prevention of Degradation. As noted above, the federal Water Quality Act of 1965 was adopted on October 2, 1965. 79 Stat. 903. In response to this, on March 9, 1966, the Colorado legislature adopted the Colorado Water Pollution Control Act of 1966. L. 66, pp. 199-209, C.R.S. 1963 § 66-28-1 et seq. (1967 Perm. Cum. Supp.). Section 8 of this Act specifically authorized the State Water Pollution Control Commission to adopt water quality standards necessary to comply with the federal act.

On August 15, 1966 the commission notified Secretary Udall of its intent to adopt such standards. The first set of standards were proposed on December 21, 1966, and finally adopted on January 25, 1967.

These regulations assumed the following form:

i) The commission adopted narrative "Basic Standards" that were applicable to all waters of the state. These standards

included the requirement that all waters be free from "toxic, or other deleterious substances attributable to municipal, domestic, industrial wastes, or other controllable sources in levels or concentrations or combinations sufficient to be harmful to human or animal life."

ii) The commission adopted the following system of use classifications:

A. Public Water Supply

B. Recreational Waters
   1. Fish and Wildlife
   2. Body Contact Sports

C. Industrial Water Supply

D. Agricultural Water Supply
   1. Irrigation Water
   2. Livestock Watering

iii) The commission adopted a limited set of supplemental numeric criteria for each use classification that would automatically apply as standards to each interstate stream segment receiving that classification. In other words, they were "presumptively applicable".

Subsequent to the adoption of these standards, the commission held classification hearings for each of the four major river basins in the state. Classifications were not applied to all waters, but only to the mainstems of the interstate rivers and their major tributaries. For instance, the Arkansas River basin was divided into six "sections" or segments, each of which consisted of the mainstem of the river and named tributaries. An A.1 "public water supply" classification was adopted for five of the six segments, B.1 for all six segments, C for two segments, D.1 for all six segments, and D.2 for five of the six segments.

On October 21, 1968 Secretary Udall "approved" these standards with several exceptions. The most important exception was the state's failure to adopt an anti-degradation provision.

In response to Secretary Udall's action, the state amended its Basic Standards to include an anti-degration standard for "high quality" waters. These amended standards were approved by EPA Administrator Ruckelshaus on March 4, 1971.

B. Post-1972 Developments Regarding Use Restrictions -- "Fishable, Swimmable" Waters as the Norm. On April 13, 1971 the commission adopted revised water quality standards and stream classifications for the entire state. The Basic Standards did not change much: the "B" classification for "Recreational Waters" was refined to distinguish between warm water and cold water fisheries; and additional numeric criteria were adopted for classified uses. The classification system, on the other hand, was considerably refined and expanded. The state was now divided into ten basins and subbasins, and use classifications were applied to all waters within each basin. In addition, segmentation was increased. For instance, in the Arkansas River Basin, the previous six segments were replaced by twenty- three new segments. Of these, an "A" Public Drinking Water Supply classification was applied to ten segments, "B_1" Cold Water Fishery to eleven segments, "B_2" Warm Water Fishery to two segments, "C" Industrial Water Supply to ten segments, and "D_1" Irrigation to all twenty-three segments. Six segments lacked any aquatic life classification, and none of the segments were classified for body contact sports.

On January 18, 1973, subsequent to enactment of the Federal Water Pollution Control Act Amendments of 1972, the regional EPA office sent a "critique" of the state's new water quality standards to Governor Love. Attachment 1. This critique consisted of two parts: a list of changes which "[were] to be incorporated into your state's water quality standards by April 18, 1973, for interstate waters, and by June 18, 1973, for intrastate standards. . ."; and a further list of changes that the region "recommended", but which were not subject to federal promulgation in the absence of state action.

As to use classifications, EPA asked Colorado to justify its failure to prescribe "aquatic life" and "contact recreation" classifications for all stream segments.

As to criteria, EPA wanted the state to supplement its statewide narrative standards with certain minimum numeric criteria. In describing these criteria, EPA distinguished between two "classes" of water: Class "A" waters, which it defined as waters to be classified for Primary Contact Recreation; and Class "B" waters, which were defined as waters to be classified for Secondary Contact Recreation and for the protection and propogation of fish, shellfish and wildlife.

EPA's "nonenforceable" recommendations related to the use of mixing zones.

Colorado did not meet the deadlines prescribed in EPA's letter. Nonetheless, on July 6, 1973 the Colorado legislature enacted the Colorado Water Quality Control Act

of 1973, L. 1973, pp. 709-731, C.R.S. 1973 § 25-8-101 et seq. This Act was specifically designed to enable Colorado to meet all requirements of the new federal act, and in November 1973 the renamed Water Quality Control Commission proposed a comprehensive revision to the existing standards and classifications. On January 15, 1974 the commission adopted the new standards, and on March 19, 1974 it adopted the new classifications.

The new regulations were a clear response to EPA's critique:

i) The Basic Standards were modified to conform to EPA's desires, particularly with regard to the protection of aquatic life.

ii) The old classification scheme was discarded. In its place was substituted a new scheme which was clearly based on EPA's "A" and "B" distinction. The new scheme contained only four categories: "A_1", which was to be applied to cold water suitable or to become suitable for all purposes for which raw water is customarily used, including primary contact recreation; "A_2", which was to be applied to warm water suitable or to become suitable for the same purposes; "B_1", which was to be applied to cold water suitable or to become suitable for all purposes for which raw water is customarily ues, except primary contact recreation; and "B_2", which was to be applied to warm waters suitable or to become suitable for the same uses.

iii) The numeric water quality criteria for each classification generally corresponded to EPA's recommendations. They remained "presumptively applicable".

Once again, the state was divided into ten basins. However, due to the simplification of the classification scheme, segmentation was reduced. For instance, the Arkansas River basin was reduced to thirteen segments. Furthermore, each segment had a single classification, A_1, A_2, B_1, or B_2. Thus, each segment was automatically "classified" for all uses mentioned in Section 101(a)(1) of the federal act.

Almost as soon as these new standards and classifications were adopted, it became apparent that they would have to be changed. For one thing, the new use categories failed to provide any meaningful distinction among stream segments. For another, EPA's publication of the Blue Book made it clear that more detailed criteria would be needed. An ad hoc committee to review the regulation was appointed in 1976, and the committee filed a detailed report to the full commission in November 1976. After taking the matter under advisement, the commission proposed a new set of standards on December 1, 1977. After public hearings, these standards were adopted on May 2, 1978.

The new standards were considerably more detailed than before. Once again, they clearly responded to EPA policy.

As to use classifications:

i) The commission adopted the following new set of use classifications:

A. Recreation - Class 1 - Primary Contact

B. Recreation - Class 2 - Secondary Contact

C. Agriculture

D. Warm Water Aquatic Life - Class 1

E. Warm Water Aquatic Life - Class 2

F. Cold Water Aquatic Life - Class 1

G. Cold Water Aquatic Life - Class 2

H. Domestic Water Supply - Uncontaminated

I. Domestic Water Supply - Water Requiring Treatment

J. Existing High Quality Waters - Class 1 - Resource Waters

K. Existing High Quality Waters - Class 2 - Non-resource Waters

L. Special Protection Waters

ii) Streams were to carry the highest use classifications "attainable". Uses were deemed "attainable" if they could be achieved within twenty years utilizing recognized control techniques that were environmentally and socially acceptable.

iii) Existing uses could not be downgraded.

iv) Designated but non-existing uses could be downgraded, but only if the designated uses were "nonattainable", as described above.

As to numeric water quality criteria:

i) The commission adopted a detailed set of tables establishing numeric criteria for each use category. These criteria continued to be "presumptively applicable", i.e., they automatically applied to stream segments carrying the specified classifications unless, after a rule-making hearing, the commission decided that alternative standards were more appropriate. These "table numbers" closely paralleled EPA's Red Book numbers.

ii) Class 1 - High Quality Waters could not be degraded.

iii) Class 2 - High Quality Waters could be degraded, but only if necessary to accommodate important economic or social development.

C. Post-1972 Developments Regarding Criteria -- What are "Fishable, Swimmable" Waters? New stream classification hearings were planned following adoption of these standards. However, there was an immediate outcry against the standards, particularly with regard to the presumptive applicability of table numbers. The standards were challenged, and in response to some of the issues raised in this lawsuit the commission elected to revise the standards before proceeding with the new classification proceedings. An amended regulation was proposed on August 24, 1978, and adopted in final form on May 22, 1979. This regulation differed from the previous regulation in at least two major respects:

i) "Special Protection Waters" were deleted as a use classification.

ii) Table numbers were no longer presumptively applicable. In other words, they were not automatically converted into "standards" upon adoption of use classifications. Instead, standards had to be specifically adopted for each segment, based upon a rulemaking record.

This regulation has been amended several times since 1979, but not in ways that are relevant to this discussion. A copy of the current regulation, now referred to as "The Basic Standards and Methodologies", is attached hereto as Attachment 2.

D. State Reaction Against the Vestiges of "Presumptive Applicability". Upon adoption of these new standards, the commission commenced the process of reclassifying state waters under the new system, and adopting numeric standards necessary to protect those uses. This effort took almost five years, and has just been completed.

Notwithstanding the demise of the "presumptive applicability" doctrine at both the state and federal levels, vestiges of the doctrine and its related policies had a significant impact on the manner in which the commission undertook this reclassification of Colorado's rivers. This influence occurred in at least three ways: in the definition and application of the "Cold Water Aquatic Life - Class 1" use classification; in the treatment of in-stream monitoring data; and in the use of "table numbers" when monitoring data was not available.

(1) Definition and Application of "Cold Water Aquatic Life - Class 1" Use Classification. In Colorado, "Class 1" aquatic life classifications are generally the most restrictive use categories in terms of the criteria they carry. Thus, since classifications "drive" numeric standards, the applicability or nonapplicability of such a classification is generally a central issue in the commission's proceedings .

As noted above, under EPA policy, "fishable" use classifications are deemed to be the "norm", i.e., if states do not include them, they bear the burden of proving that they are unattainable. In Colorado, this federal policy has been implemented in the following manner: a "Class 1" aquatic life use classification is generally deemed

to be appropriate unless the use is shown to be attainable for reasons other than water quality. As I tried to explain in my earlier testimony, this cannot always be done. As a consequence, the commission has adopted "Class 1" use classifications for numerous stream segments that do not support "Class 1" aquatic communities because of water quality limitations. This was often done without explicit recognition that the classification was a goal, and with little or no consideration of whether or not the use was "attainable". This approach has led to a high number of "Class 1" streams. For instance, in the Colordo River Basin, which was the first basin to be reclassified under the new system, of 75 segments receiving classifications, fully 68 of them carried "Aquatic Life Class 1" or "High Quality" classifications.

(2) Treatment of In-Stream Monitoring Data. As noted above, in its computation of water quality criteria EPA discards any data from tests in which test organisms have previously been exposed to pollution. Furthermore, in its revocation of the "presumptive applicability" doctrine, the agency suggested that deviations from its criteria could not be justified on the basis of manmade pollution. In Colorado, this policy was reflected in the state's general policy of refusing to give any effect to in-stream monitoring data that reflected the influence of manmade discharges.

(3) Use of "Table Numbers" in the Absence of Other Data. Even though EPA's water quality criteria are no longer "presumptively applicable", states must still justify any deviation from them. In Colorado, this policy is reflected in the fact that "table numbers" are applied to stream segments when there is no other water quality data available.

E. Legislative Response to the Vestiges of "Presumptive Applicability". As suggested above, the foregoing policies had a severe impact on some dischargers. This occurred in one of two ways. Under the first scenario, the state adopted ambitious water quality goals with little or no recognition of the fact that additional treatment would be required to attain them. Under the second scenario, the state adopted stringent use classifications accompanied by relaxed numeric standards. While this, in itself, might not lead to unreasonable treatment requirements, it placed dischargers at risk under the doctrine of Mississippi v. Costle: EPA might approve the use classification, but impose substantially more stringent numeric criteria.

Partially in response to its dissatisfaction with the foregoing practices, the Colorado legislature totally revised the Colorado Water Quality Control Act in 1981. L. 81, pp. 1310-1339, C.R.S. § 25-8-101 et seq.

(1982 Replacement Volume). In this new law, the legislature required that all of the commission's actions be "economically reasonable". Specifically, in the process of "going beyond BAT", the water quality benefits of pollution control measures must bear "a reasonalbe relationship to the economic, environmental, energy, and public health costs and impacts of such measures. . ." C.R.S. § 25-8-102(5). Pursuant to this requirement, the commission has begun to modify some of its earlier decisions.

EPA's response to this change has been unfortunate -- it has threatened to revoke Colorado's right to administer the NPDES program. This threat is not based upon any conflict between the Colorado statute and the language of the Clean Water Act. Nor is it based upon any allegation that state-issued permits fail to provide adequate protection of water quality. Instead, the threat is based upon a conflict between the Colorado statute and EPA policy. Under EPA policy, all streams must be "fishable and swimmable" in the precise manner defined by EPA unless attainment of such a goal would result in "substantial and widespread economic and social impact". Under state law, a lesser degree of protection may be provided if the water quality benefits bear no reasonable relationship to the costs.

4. Analysis and Resolution of the Problem. The issue here is primarily one of state-federal relations. In our opinion, Colorado's response to EPA's policies has been perfectly reasonable.

Under the Clean Water Act, the task of going beyond BAT to meet the goals of Section 101 was designed as a joint federal-state enterprise, as a "partnership". However, EPA's interpretation of the act has turned this design into a shambles. To the extent that a partnership exists at all it is a limited partnership, with EPA as the general partner making all policy decisions, and with the states as limited partners who do nothing more than contribute money to pay for EPA's programs. This is not good policy. The federal intrusion into local planning matters is too great.

The current situation needs to be changed in at least three ways:

i. The goals of Section 101 should not be given a fixed, inflexible meaning. The states should have greater flexibility to determine the meaning of "fishable, swimmable". They should be free to provide a greater or lesser degree of protection to aquatic life than EPA currently seems to demand, and they should be free to take into account the real-world tolerance to manmade pollution that aquatic life often develops.

ii. The states should have greater flexibility to determine when the goals of Section 101 are not reasonably attainable.

iii. In its review of water quality standards, EPA should bear the burden of proving that the states have failed to "meet the requirements" of the act. In this effort, EPA should not be able to require states to do more than the Administrator could do himself under Section 302.

ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
SUITE 900, 1860 LINCOLN STREET
DENVER, COLORADO 80203

January 18, 1973

RECEIVED
FEB 1 - 1973
WATER POLLUTION
CONTROL DIVISION

Our Ref: 8A

Honorable John A. Love
Governor of Colorado
State Office Building
Denver, Colorado 80202

Dear Governor Love:

The enclosed attachments constitute the results of a review of your State's Water Quality Standards by the Environmental Protection Agency pursuant to Sections 303(a)(1), (2), and (3) of the Federal Water Pollution Control Act Amendments of 1972. The authority to make this notification and to approve or disapprove all suggested changes to water quality standards, including criteria, uses, implementation plans and the anti-degradation statement, has been delegated to me by the Administrator of the Environmental Protection Agency.

Attachment A contains the standards provisions which are to be incorporated into your State's Water Quality Standards by April 18, 1973, for interstate waters, and by June 18, 1973, for intrastate standards. Attachment B sets out changes in standards which we recommend to your State for consideration but which are not subject to Federal promulgation.

In providing these recommendations, we recognize and applaud the outstanding effort which your State has provided in adopting and enforcing water quality standards. This effort has resulted, in some instances, in State standards which are more demanding than minimums stated here, a development which we will continue to encourage.

Under the provisions of the Act, water quality standards are to be established for all interstate and intrastate waters. After adoption by the State and approval by the Environmental Protection Agency, standards will apply to all navigable waters, i.e., all surface waters of the State. It will be necessary for the State Attorney General to indicate to this Office by letter that any State changes in water quality standards were adopted in a manner that satisfies the administrative requirements of State law.

Although we have chosen to incorporate herein comments applying to standards for both interstate and intrastate waters, the applicability of these comments to intrastate waters must not be considered final until March 18, 1973. At that time, we will provide you with a final review letter applying to intrastate waters incorporating public comments which we receive in the interim. Public participation in the development and revision of water quality standards at the State and Federal level is required by Section 101(e) of the Act.

As you are aware, the new Permit Program contained in the 1972 Act will accomplish what the previous implementation plans were designed to accomplish. We are, therefore, not specifying new implementation plan dates, and are not encouraging the State to undertake a major revision of the implementation plans. I am, however, taking this opportunity to point out that each implementation date will undergo a separate case-by-case review that will ultimately result in the issuance of a permit under Section 402 of the Act.

Additionally, I would like to take this opportunity to point out that Section 301(b)(1)(C) of the Federal Water Pollution Control Act Amendments of 1972 provides that water quality standards shall be met not later than July 1, 1977.

We look forward to working closely with your State in achieving the changes in water quality standards necessary to provide for the degree of protection of our Nation's waters mandated by the 1972 Federal Water Pollution Control Act Amendments.

Sincerely yours,

John A. Green
Regional Administrator

Enclosures

ATTACHMENT A

PROVISIONS SUBJECT TO PROMULGATION

STATE WATER QUALITY STANDARDS

COLORADO

John A. Green
Regional Administrator
Environmental Protection Agency
Region VIII

ATTACHMENT "A"

PROVISIONS SUBJECT TO PROMULGATION

STATE WATER QUALITY STANDARDS

STATE OF COLORADO

Stream Use Classification

As an initial step in proceeding toward the national goal of water quality which provides for the protection and propagation of fish and wildlife, and provides for recreation in and on the water by 1983 (Section 101(a)(2)), the Environmental Protection Agency has adopted a policy that all waters should currently be protected for the preservation and propagation of desirable species of aquatic life (specified as warm or cold water), and for recreation in or on the water. Additional use classifications for public water supplies, agriculture, industry, and other purposes may be adopted but, except as provided below, the criteria supporting these uses may not be less stringent than the following recreation and aquatic life criteria, nor interfere with recreation and aquatic life uses.

The Environmental Protection Agency recognizes that because naturally occurring poor quality or man-made pollution combined with technological limitations may prohibit improvement of water quality to the degree necessary, some waters may qualify for an excepted classification. No water may be lowered in quality from an existing higher quality because of the previously approved anti-degradation provision. Any exceptions must be supported by data gathered from State and Federal sources, and will be granted only on a case-by-case basis for specific water quality criteria. Exceptions must be carefully scrutinized during the periodic review of standards provided for by Section 303(c) of the Act. If your State desires to except waters from the recreation and aquatic life use classifications, please provide us with the specific supporting data prior to April 18, 1973.

Water Quality Criteria

The minimum criteria necessary to protect various use classifications are those set by the National Technical Advisory Committee in its report to the Secretary of the Interior on Water Quality Criteria, April 1, 1968, and other information provided by the Environmental Protection Agency.

A review of the general water quality criteria applicable to all State waters should be made to insure that as a minimum, the following criteria are adopted. Waters shall be:

(1) Free from substances attributable to municipal, industrial, or other discharges or agricultural practices that will settle to form objectionable sludge deposits.

(2) Free from floating debris, scum, and other floating materials attributable to municipal, industrial, or other discharges or agricultural practices in amounts sufficient to be unsightly or deleterious.

(3) Free from materials attributable to municipal, industrial, or other discharges or agricultural practices producing color, odor, or other conditions in such degree as to create a nuisance or render any undesirable tastes to fish flesh or in any way make fish inedible.

(4) Free from substances attributable to municipal, industrial, or other discharges or agricultural practices in concentrations or combinations which are toxic or harmful to human, animal, plant or aquatic life.

(5) Free from substances and conditions or combinations thereof attributable to municipal, industrial, or other discharges or agricultural practices in concentrations which produce undesirable aquatic life.

(6) Free from residue attributable to wastewater or visible film oil or globules of grease which cause a film or sheen (or be present in concentrations at or in excess of 10 mg/l) upon, or discoloration of the surface or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines or prevent classified uses of such waters.

In order to insure that all waters of your State are protected for (1) primary contact recreation, and/or (2) aquatic life and secondary contact recreation uses, it is a requirement that as a minimum, the following water quality criteria be adopted for all waters of your State. Other values may be adopted for those waters which qualify for an excepted classification.

Class "A" Waters*: Those waters to be classified for primary contact recreation purposes.

Class "B" Waters*: Those waters to be classified for secondary contact recreation and for the protection and propagation of fish, shellfish, and wildlife.

Bacteria

Bacteriological concentrations in Class "A" Waters should not exceed a geometric mean of 200 fecal coliform groups per 100 milliliters or 1000 total coliform groups per 100 milliliters based on a minimum of not less than five samples obtained during separate 24-hour periods for any 30-day period, nor shall 10 percent of the fecal coliform groups exceed 400 groups per 100 milliliters, nor should 20 percent of the total coliform groups exceed 2000 groups per 100 milliliters during any 30-day period.

Bacteriological concentrations in Class "B" Waters should not exceed a geometric mean of 10,000 total coliform groups or 1000 fecal coliform groups per 100 milliliters based on a minimum of not less than five samples obtained during separate 24-hour periods for any 30-day period, nor shall 10 percent of the fecal coliform samples exceed 2000 groups per 100 milliliters during any 30-day period.

Dissolved Oxygen

The dissolved oxygen concentration in Class "A" Waters shall not be less than 5 milligrams per liter.

The dissolved oxygen concentration in Class "B" warm water fisheries shall not be less than 5 milligrams per liter.

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* The water quality criteria for Classes "A" and "B" Waters are compatible with agricultural, industrial, and navigational uses. In addition, waters designated for public water supplies should meet the revised Environmental Protection Agency Drinking Water Standards.

The dissolved oxygen concentration in Class "B" cold water fisheries shall not be less than 6 milligrams per liter with a minimum of 7 milligrams per liter required during spawning periods.

pH

In Class "A" Waters the pH shall be maintained between 6.5 and 8.3 units.

In Class "B" Waters the pH shall be maintained between 6.0 and 9.0 units.

Temperature

For Class "A" Waters the maximum temperature should not exceed 90 degrees Fahrenheit.

For all Class "B" Waters there should be, based on the minimum expected flow for that month, no more than a 5 degree Fahrenheit change in ambient stream temperature, nor should the maximum incremental temperature exceed 2 degrees Fahrenheit per hour.

For Class "B" warm waters the maximum temperature should not exceed 90 degrees Fahrenheit. There should be no more than a 3 degree Fahrenheit change above ambient temperature in impoundments.

For Class "B" cold waters the maximum temperature should not exceed 58 degrees Fahrenheit except those areas managed for brown trout fisheries where a maximum temperature of 65 degrees Fahrenheit is permitted.

For all Class "B" Waters there shall be no induced temperature change over spawning beds.

Color and Turbidity-Producing Substances

For Class "A" Waters, a secchi disc should be visible to a minimum depth of one meter.

For Class "B" Waters the turbidity in the receiving water should not exceed 50 JTU in warm water streams, or 10 JTU in cold water streams.

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Total Dissolved Gas Pressure

In waters protected as cold water fisheries, discharges from impoundments or other sources shall not cause the total dissolved gas pressure to exceed 110 percent of existing atmospheric pressure.

Radiological Criteria

1. The average dissolved concentrations (including the naturally-occurring or "background" contribution) of Iodine-131, Radium-226, Strontium-89, Strontium-90, and Tritium shall not exceed the following concentration limits:

Iodine-131	5 pCi/l
Radium-226	1 pCi/l
Strontium-89	100 pCi/l
Strontium-90	10 pCi/l
Tritium	3000 pCi/l

For all other radionuclides, the average dissolved concentration limits shall be 1/150 of the corresponding maximum permissible concentration in water for continuous occupational exposure as recommended by the National Committee on Radiation Protection (National Bureau of Standards Handbook 69, or subsequent revisions).

2. For the case of a mixture of radionuclides, the following relationship shall be satisfied:

$$\frac{C_1}{L_1} + \frac{C_2}{L_2} + \ldots + \frac{C_n}{L_n} \leq 1.00$$

Where C denotes the average concentration of the respective radionuclide, and L denotes its concentration limit (Item 1).

3. In cases where alpha emitters, Strontium-90, Radium-228, Iodine-129, Iodine-130, and Lead-210 are known to be absent, routine analyses for dissolved gross beta radioactivity (excluding Potassium-40 contribution) may be employed to monitor and show compliance with this criteria (except for Tritium) so long as the gross concentration does not exceed 100 picocuries per liter. When these conditions are not met, routine quantitative analyses of individual radionuclides shall be performed to show compliance. Except in cases where Tritium from other than natural sources is known to be absent, routine Tritium analyses shall be performed to show compliance. (Note: Absence taken to mean a negligibly small fraction of the specific concentration limit, where the limit for unidentified alpha emitters is taken as the limit for Radium-226.)

4. For radionuclides associated with suspended material in transport, the average concentration limits shall be 1/150 of the corresponding maximum permissible concentration in water (insoluble form) for continuous occupational exposure as recommended by the National Committee on Radiation Protection. Moreover, in-stream sedimentation of these materials shall not produce solids beds such that there is non-compliance with the provisions of Items 1 and 2 (because of leaching) and/or excessive accumulation in native flora and fauna.

5. "Average" concentrations shall be computed from monitoring data acquired during the previous twelve months; however, maximum concentrations shall not exceed three (3) times the average concentration limits specified herein.

6. Variances from concentration limits specified herein shall be permitted only if (a) the contributing source(s) is a non-controllable, natural source; (b) best available treatment is provided for man-made discharges; and (c) the exposure received by affected population groups is within established dose limits.

Salinity

Your State Water Quality Standards should reflect the following policy with respect to Salinity:

1. High salinity (Total Dissolved Solids) is recognized as a significant water quality problem causing adverse physical and economic impacts on water users. Salinity concentrations are affected by two basic processes: (a) salt loading - the addition of mineral salts from various natural and man-made sources, and (b) salt concentrating - the loss of water from the system through consumptive use or depletion.

2. Studies to date have demonstrated that the high salinity of stream systems can be alleviated. Although further study may be required to determine the economic and technical feasibility of controlling specific sources, sufficient information is available to develop a salinity control program. Emphasis will be placed on controlling high salinity through improved water management and conservation practices.

3. The anti-degradation policy will be applied to salinity.

4. The State will determine salinity problem areas within the State and the need for specific numerical standards in terms of quantity and concentration and promulgate such criteria no later than October 18, 1975.

Since salinity is a water quality problem in the Colorado River Basin, ambient numerical standards in terms of quantity and concentration for total dissolved solids (minerals and inorganic chemical constituents) must be established for the Colorado River portion of your State. The levels established should be sufficient to serve the purposes of the Act and meet recommendations of the Colorado River Basin Conference of April 1972.

Miscellaneous Provisions

Tests or analytical procedures should be modified to reflect the following:

1. "All methods of sample collection, preservation, and analyses used in applying any of the rules and regulations in these standards shall be in accord with those prescribed in the current edition of 'Standard Methods for the Examination of Water and Waste Water' or methods prescribed in subsequent Environmental Protection Agency publications.

2. For bioassay tests median tolerance concentrations shall be based on the most recent research results for the materials being studied, or by bioassay tests simulating actual stream conditions in accordance with procedures outlined in the latest edition of 'Standard Methods for the Examination of Water and Waste Water' published by the American Public Health Association, or in accordance with tests or analytical procedures that have been found to be equal or more applicable by the Environmental Protection Agency. Bioassay studies should be made using the most sensitive local species and life stages of economic or ecological importance.

3. When specific application factors are not available, the application factor should be determined by using methods listed in the latest edition of 'Water Quality Criteria' published by the Federal Water Pollution Control Administration (1968), or by using other methods accepted as equal or applicable by the Environmental Protection Agency."

In addition to those items specifically outlined in Attachment A, all other statements, policies, and declarations contained within your State's Water Quality Standards that conflict with the Federal Water Pollution Control Act Amendments of 1972, shall be revised to be consistent with the intent, policies, and goals of the Act.

ATTACHMENT B

RECOMMENDED CHANGES TO

STATE WATER QUALITY STANDARDS

COLORADO

RECOMMENDED CHANGES TO STATE WATER QUALITY STANDARDS

The following comments constitute items which we recommend to the State for inclusion in the State Water Quality Standards. If not adopted, the changes suggested are not subject to promulgation by the Environmental Protection Agency.

It is recommended that efforts be made to develop a fairly comprehensive mixing zone definition. The following definition and criteria are provided for your consideration:

A mixing zone is defined as that volume of water wherein any pollutant may exceed the allowable standards. The following criteria apply:

A. All permissible water discharges to surface water shall be entitled to a mixing zone at the edge of which established receiving water criteria shall be met.

B. The mixing zone should be kept as small as possible and shall not be of a size and shape as to cause or contribute to the impairment of water uses.

C. The mixing zone in streams shall not exceed 25 percent of the surface width or 10 percent of any cross sectional area measured perpendicular to stream flow at the point of discharge.

D. The mixing zone dimensions parallel to stream flow shall not be more than five times the greatest dimension perpendicular to stream flow.

E. The mixing zone should not: (1) be located in or extend into spawning, nursery, or rearing areas of fin fish or shellfish; (2) be so situated as to block or in any way interfere with the migration of fin fish or impede the movement of any motile organisms; (3) be located in or extend into public bathing waters or waters which are a part of public parks, preserved in their natural state or for primary contact water recreation use; (4) be located in or extend into the near-vicinity of public or industrial water supply intakes; (5) be located in such a manner which would permit other significant impairments of water use or adverse effects to aquatic life.

F. The mixing zones in lakes, impoundments, and bays shall not exceed 25 percent of the surface areas or 10 percent of the volume measured from the shoreline to the 30-foot depth line between any two parallel lines perpendicular to the shoreline trend. In such bodies of water where the average depth is less than 30 feet, the mixing zone shall be defined by the Administrator.

G. No horizontal dimension of a mixing zone in lakes or bays shall at any time be greater than five times any other horizontal dimension.

H. Mixing zones should not overlap or intersect at any time nor should the areas covered by mixing zones at one time or another overlap or intersect.

I. Mixing zones shall not intersect the bottom of the receiving water unless the Environmental Protection Agency and the State determine that the resident biota will not be adversely affected.

J. Heated water discharges to thermally stratified waters shall be to the epilimnion except where it can be demonstrated to the Environmental Protection Agency and the State that such discharges to other strata would be beneficial for fisheries management.

K. Heated water discharges shall not be permitted to cause a thermocline of other than a transient nature to be created over an area larger than the maximum mixing zone surface area. The temperature difference across such a thermocline shall not exceed 5 degrees Fahrenheit.

The Environmental Protection Agency is recommending that a policy statement be adopted in regard to phosphorus levels to the effect that "Total phosphorus as P should not exceed 100 ug/l in any stream nor exceed 50 ug/l in any reservoir or lake, or in any stream at the point where it enters any reservoir or lake." This policy is identical to that presented in the 1968 publication, Water Quality Criteria.

It is strongly recommended that the State coordinate closely with neighboring States to minimize inconsistencies in standards among contiguous States.

COLORADO DEPARTMENT OF HEALTH
Water Quality Control Commission

~~REGULATIONS ESTABLISHING BASIC STANDARDS~~

~~AND AN ANTIDEGRADATION STANDARD~~

~~AND~~

~~ESTABLISHING A SYSTEM FOR CLASSIFYING STATE WATERS,~~

~~FOR ASSIGNING STANDARDS, AND FOR GRANTING TEMPORARY~~

~~MODIFICATIONS~~

****

THE BASIC STANDARDS AND METHODOLOGIES

ADOPTED: May 22, 1979

EFFECTIVE: July 10, 1979

AMENDED: DECEMBER 12, 1983

EFFECTIVE: JANUARY 30, 1984

Attachment 2

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COLORADO DEPARTMENT OF HEALTH
Water Quality Control Commission

Adopted: May 22, 1979
Effective: July 10, 1979
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3.1.0 ~~REGULATIONS ESTABLISHING BASIC STANDARDS AND AN ANTIDEGRADATION STANDARD AND ESTABLISHING A SYSTEM FOR CLASSIFYING STATE WATERS, FOR ASSIGNING STANDARDS, AND FOR GRANTING TEMPORARY MODIFICATIONS~~

BASIC STANDARDS AND METHODOLOGIES

3.1.1 ~~AUTHORITY~~ AUTHORITY AND SCOPE

These Regulations are promulgated pursuant to C.R.S. 1973, 25-8-101 et seq., as amended, and in particular, 25-8-203 and 25-8-204. THEY PROVIDE BASIC STANDARDS AND A SYSTEM: FOR CLASSIFYING STATE WATERS; FOR ASSIGNING STANDARDS; AND FOR GRANTING TEMPORARY MODIFICATIONS.

3.1.2 PURPOSES

These Regulations establishing basic standards and an antidegradation standard and establishing a system for classifying State waters, for assigning standards, and for granting temporary modifications (hereinafter referred to as "Regulations") and accompanying Tables are the foundation for the classification of the waters of the State of Colorado, as prescribed by the Colorado Water Quality Control Act. They are intended to implement the State Act by maintaining and improving the quality of the waters of the State. These Regulations and accompanying Tables are based on the best available knowledge to insure the suitability of Colorado's waters for beneficial uses including public water supplies, domestic, agricultural, industrial and recreational uses, and the protection and propagation of terrestrial and aquatic life. They are further intended to be consistent with the 1983 and 1985 goals and objectives of the Federal Act. These Regulations shall be construed in a manner consistent with these purposes and shall be considered part of the implementation of the 1983 and 1985 goals and objectives.

3.1.3 INTRODUCTION

These Regulations and Tables present a classification system which establishes beneficial use categories together with basic standards (Section 3.1.11), an antidegradation standard (Section 3.1.8), and numeric Tables which define the conditions generally necessary to maintain and attain such beneficial uses. In addition, they establish procedures for classifying the waters of the State, for assigning water quality

3.1.3 (continued)

standards, and for continued review of the classifications and standards.

The classifications will be assigned by applying the system to specific waters of the State, including surface and groundwaters, in accordance with proper procedures, including public hearings. The basic standards and the antidegradation standard will apply to all waters of the State at the effective date of these Regulations. Whenever a specific stream segment or body of water receives a classification for one or more of the uses, additional numeric standards may be assigned. All classified uses will be protected. This does not mean that any entity has the right to rely on the presence of specific pollutants in the stream even though those pollutants may be utilized by the entity. Water quality standards, temporary modifications of numeric standards, and classifications shall be reviewed at least one every three (3) years and revised where appropriate. NO PROVISION OF THIS REGULATION SHALL BE INTERPRETED SO AS TO SUPERCEDE, ABROGATE, OR IMPAIR RIGHTS TO DIVERT WATER AND APPLY WATER TO BENEFICIAL USES.

3.1.4 IMPLEMENTATION

No pollutant may be released into any State waters without first receiving the treatment or other corrective action necessary to protect the legitimate and beneficial uses of such waters. Facilities, processes, activities, or waste piles shall be conducted, operated, and maintained to prevent any adverse effects to the classified uses of classified waters and beneficial uses of unclassified waters to which they discharge. Failure to do so will be considered a violation of these Regulations and of the Colorado Water Quality Control Act.

3.1.5 DEFINITIONS

See the Colorado Water Quality Control Act, C.R.S. 1973, 25-8-101 et seq., as amended, and the codified water quality regulations for additional definitions.

(1) "ACT" means the Colorado Water Quality Control Act, C.R.S. 1973, 25-8-101 et seq., as amended.

(2) "ANTIDEGRADATION STANDARD" means the standard established in Section 3.1.8.

3.1.5 (continued)

(3) "BASIC STANDARDS" means those standards as established in Section 3.1.11.

(4) "BENEFICIAL USES" means those uses of the waters of the State to be protected such as those identified in the classification system.

(5) "BMP" (Best Management Practices) means a practice or a combination of practices that is determined by a governmental agency after problem assessment, examination of alternative practices, and appropriate public participation, to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with quality goals.

(6) "COMMISSION" Means the Colorado Water Quality Control Commission.

(7) "DIVISION" Means the Division of Administration of the Colorado Department of Health of which the Water Quality Control Division is a part.

(8) "FEDERAL ACT" means the Clean Water Act, U.S.C. Section 1251 et seq., as amended.

(9) "LC-50" means the concentration of a parameter that is lethal to 50% of the test organisms within a defined time period.

(10) "MIXING ZONE" means that area of a water body designated on a case-by-case basis by the Division which is contiguous to a point source and in which standards may not apply.

(11) "NUMERIC VALUE" means the measured concentration of a parameter.

(12) "PARAMETER" means the chemical constituents or other characteristics of the water such as algae, fecal coliform, total dissolved solids, dissolved oxygen, or the magnitude of radioactivity levels, temperature, pH, and turbidity, or other relevant characteristics.

3.1.5 (continued)

(13) "PERMIT" means a National Pollutant Discharge Elimination System (NPDES) permit or other state water quality permit.

(14) "SALINITY" means total dissolved solids (TDS).

(15) "STANDARD" means a narrative and/or numeric restriction established by the Commission applied to waters of the State to protect one or more beneficial uses of such waters. Whenever only numeric or only narrative standards are intended, the wording shall specifically designate which is intended.

(16) "TABLES" means Tables I, II, ~~III~~, AND III, ~~and IV~~ appended to these Regulations, which set forth accepted levels for various parameters which will generally protect the beneficial uses of the waters of the State. These Tables are not adopted as regulations.

(17) "USES" - see Beneficial Uses.

(18) "WATERS OF THE STATE" means any and all surface and subsurface waters which are contained in or flow in or through this State except waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed. "Waters of the State", "waters", "State waters", and "water bodies" are used interchangeably and mean surface and groundwaters of Colorado coming under the above definition. Whenever only surface or only groundwater is intended, the wording shall specifically designate which is intended.

(19) "WATER QUALITY STANDARD" means standard.

3.1.6 PROCESS FOR ASSIGNING CLASSIFICATIONS

The Commission is responsible for classifying the waters of the State as set forth in C.R.S. 1973, 25-8-202(1)(a), and 25-8-203. All waters of the State ~~shall~~ MAY be classified in one or more of the use classifications as set forth in Section 3.1.12.

Waters shall be classified for ~~all uses for which they are suitable or are to become suitable. It should be noted that existing high quality waters may include all beneficial uses~~. THE PRESENT BENEFICIAL USES OF THE WATER, OR THE BENEFICIAL USES THAT MAY BE REASONABLY EXPECTED IN THE FUTURE FOR WHICH THE WATER IS SUITABLE IN ITS PRESENT CONDITION OR THE BENEFICIAL USES FOR WHICH IT IS TO BECOME SUITABLE AS A GOAL. The assignment of one or more classifications to a portion of the waters of the State is based upon its current suitability for the designated uses

3.1.6 (continued)

or goals for future uses. Where the use classification is based upon a future use for which the waters are to become suitable, the numeric standards assigned to such waters to protect the use classification may require a temporary modification to the underlying numeric standard and an implementation plan for eliminating the temporary modification.

When assigning classifications to waters of a given area, the Commission will consider the goals, objectives, and requirements of Federal and State statutes and regulations, recommendations of the areawide water quality management plans (208 plans); 208 plans of adjoining regions; testimony, comments, and documents presented at public hearings on the issue; and other relevant information.

(1) Considerations in Assigning Classifications

The following will serve to guide the Commission in assigning classifications:

(a) Classifications should be directed towards the realization of the water quality goals as set forth in the Federal and State Acts.

(b) It is State law and policy to prevent any water quality degradation that can interfere with present uses.

(c) Upstream classifications must not jeopardize downstream classifications or actual uses.

(d) Classifications must protect all current classified and actual uses, unless it is determined after a public hearing that downgrading is justifiable. (See Section 3.1.6(2)(b)). A reclassification from A_1, A_2, B_1, or B_2 to Aquatic Life, Class 1 or Class 2, shall not constitute a downgrading.

(e) Classifications should be for the highest water quality attainable. Attainability is to be judged by whether or not the use classification can be attained in approximately twenty (20) years by any recognized control techniques that are environmentally, economically, and socially acceptable as determined by the Commission after public hearings.

(f) Non-chemical quality parameters such as flow and stream bed conditions are valid quality concerns.

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3.1.6 (continued)

(2) Upgrading and Downgrading

Upgrading is a change in classification which designates one or more new additional uses. Downgrading is a change in classification which eliminates one or more presently designated uses. The term "uses" refers to those beneficial uses identified in the classification categories of Section 3.1.12.

(a) Upgrading

The State shall maintain those water use classifications which are currently being attained. Where existing classifications specify fewer designated water uses than those which are presently being attained, the Commission shall upgrade the designated classification to reflect the uses actually being attained.

(b) Downgrading

At a minimum, the State shall maintain those water use classifications currently designated by stream classifications in effect as of the date of these Regulations, unless it can be demonstrated that the existing classification is not presently being attained and cannot be attained within a twenty (20) year time period. Nonattainability must be due to at least one or more of the following conditions:

(i) Natural conditions deemed uncorrectable within a twenty (20) year period; or

(ii) past human-induced conditions deemed uncorrectable within a twenty (20) year time period; or

(iii) the imposition of the necessary controls or corrective measures would result in substantial areawide adverse economic and social impact. In the application of this condition, it must be demonstrated that control strategies more severe than the strictest appropriate control required by the Federal Act would be required and that no reasonable alternative control

3.1.6 (continued)

strategies are available. In determining what constitutes a substantial areawide adverse economic and social impact, the Commission will be guided by Water Quality Standards, Chapter V, Guidelines for State and Areawide Water Quality Management Program Development, EPA 1976, and other similar documents;

(iv) agricultural practices which are considered satisfactory for the locality. It must be demonstrated that these agricultural practices preclude the present classifications. Satisfactory practices will be approved by the Commission based on evidence from areawide 208 agencies, soil conservation districts, agricultural extension services and other public input.

An additional reason for downgrading will be where previous classifications had no basis in fact and did not reflect actual beneficial uses.

(3) Procedures for Assigning or Changing Classifications

Assigning or changing a classification shall be accomplished by rule after a rulemaking hearing. Rulemaking hearings to consider a classification will be conducted according to the Procedural Regulations of the Commission. A proposal regarding a classification may be considered at any time. Any interested person shall have the right to petition the Commission to assign or change a stream classification. Such petition shall be open to public inspection. Pursuant to C.R.S. 1973, 24-4-103(7), action on such petition shall be within the discretion of the Commission. The Commission may also decide to consider a classification on its own motion. Any public hearing on a classification will be preceded by at least twenty (20) days notice. If a classification hearing is combined with a standard-setting hearing, there will be at least sixty (60) days notice.

In making a decision regarding a proposed classification, the Commission will consider the principles set forth in these Regulations. The decision will be made by the Commission applying its expertise after analyzing the evidence presented at public hearing and considering the requirements of law, its own policies, and all other matters deemed pertinent in the discretion of the Commission.

3.1.7 PROCESS FOR ASSIGNING STANDARDS AND GRANTING, EXTENDING, OR REMOVING TEMPORARY MODIFICATIONS

(1) Assigning Standards

The Commission is responsible for promulgating Water Quality Standards as set forth in C.R.S. 1973, 25-8-204. Standards may be narrative and/or numeric and include the following:

(a) Antidegradation Standard

The antidegradation standard in 3.1.8 shall apply to all waters of the State at the effective date of these Regulations.

(b) Basic Standards

The basic standards in 3.1.11 shall apply to all waters of the State at the effective date of these Regulations.

(c) Numeric Standards

A numeric standard may be assigned by the Commission either to apply on a statewide basis or to specific waters of the State. A numeric standard will be assigned by the Commission when it is presented with evidence that a particular numeric level for a parameter is the suitable limit for protecting the classified use. A numeric standard consists of a numeric level and may include a description as to how that numeric level is to be measured. A numeric standard may be exceeded due to temporary natural conditions such as unusual precipitation patterns, spring runoff or drought. Such uncontrollable conditions are not cause for changing the numeric standard.

A temporary modification of a numeric standard may be granted by the Commission if the numeric standard is not being met at the present time, but such numeric standard is necessary to allow the full attainment of the classified use.

The numeric levels for various parameters in Tables I, II, ~~III,~~ AND III, ~~and IV~~ are levels determined by the Commission after careful analysis of all available information and are generally considered to protect

3.1.7 (continued)

the beneficial use classifications. They are intended to guide the Commission and others at the use classification and numeric-standard-setting hearings. They carry no presumptive validity or applicability. Numeric standards will be assigned based on the evidence presented at the classification and numeric-standard-setting hearings. Numeric standards may not necessarily be assigned for all constituents listed in the Tables. Entities such as 208 agencies, local municipalities and industries, citizens' groups, the Water Quality Control Division, state and federal agencies, environmental organizations, and other interested persons having specific water quality data for the waters being classified, are encouraged to present such information.

(2) Granting, Extending, and Removing Temporary Modifications to Numeric Standards

Where a numeric standard is not being met at the present time, a temporary modification to the numeric standard may be granted by the Commission. The presence of a modification will be indicated by adding the words "temporarily modified" to the underlying numeric standard. A temporary modification may be granted to an entire stream or water body or to any portion thereof. It may be granted at the time a numeric standard is assigned or at any later time. When the temporary modification expires or is removed by the Commission, the underlying numeric standard will be in full effect. In every case, the modification to the numeric standard shall be temporary. All temporary modifications must be re-examined not less than once every three (3) years.

In general, requests for a temporary modification are preferred over a more permanent downgrading of a present classification where it appears that the conditions causing the lower water quality might be temporary within a twenty (20) year time frame. Retaining a classification higher than the present usage will serve as a reminder that the conditions are correctable and may increase the priority for funding to attain the classified use.

(a) Conditions for Granting a Temporary Modification

The Commission may grant a temporary modification if one of the following conditions is shown to exist:

(i) where the standard is not being met be-

3.1.7 (continued)

cause of human-induced conditions deemed correctable within a twenty (20) year period, such as:

- nonpoint source pollution which cannot be currently controlled using best management practices (BMP) or point source pollution which cannot be controlled using techniques required by the State and Federal Acts but where adequate strategies may become feasible;

- existing dams or other hydrological modifications that may be removed or operated in such a manner as to satisfy the standards;

- deposition of instream toxicants due to past human point or nonpoint source activities which could be removed by natural processes or by human efforts;

- municipal wastewater effluent which requires a higher degree of treatment for which grant funds are not currently available;

- the present inability of private permit holders to fund and construct the necessary control measures.

(ii) where the standards cannot be met because the current imposition of the necessary controls or corrective measures would result in a substantial and areawide economic and social impact. The application of this condition requires a judgment by the Commission of what constitutes a substantial and areawide impact warranting modification. In making this judgment, the Commission will be guided by Water Quality Standards, Chapter V, Guidelines for State and Areawide Water Quality Management Program Development, EPA 1976, or similar

3.1.7 (continued)

guidelines promulgated in the future by EPA and other relevant information.

(b) Eliminating the Need for A Temporary Modification

Areawide wastewater management plans (208 plans) and plan updates, discharge permits, wasteload allocations, planning, design, and construction of new, enlarged, or improved facilities, management practices, and other water quality controls and actions shall be geared toward fully attaining the classified use and underlying numeric standard and assist in eliminating the need for the temporary modification. However, wasteload allocations designed to eliminate the need for the temporary modification will be imposed only at the time that the conditions requiring the temporary modification are, in fact, correctable.

(c) Duration of a Temporary Modification

When a temporary modification is granted, the duration of the temporary modification will be set by the Commission if the time limit can be determined through testimony given at the hearing on the temporary modification. In any case, all temporary modifications must be re-examined not less than once every three (3) years to determine whether or not the temporary modification should be eliminated or extended. For example, the underlying numeric standard may have been attained, new nonpoint source control strategies or other technologies or strategies may have been developed that eliminate the need for the temporary modification, or it may become apparent that the underlying numeric standard is not attainable within a twenty (20) year time frame.

The duration of a temporary modification may depend on the availability of public funds for construction of the necessary municipal controls. Availability of public funds depends on local, state, and federal appropriations for wastewater treatment, the assignment of funding priorities by the Commission and due diligence in obtaining funds by municipalities. The ability of private permit holders to fund and con-

3.1.7 (continued)

struct necessary control measures also will be considered by the Commission when determining whether to extend a temporary modification.

In making a decision as to whether a temporary modification should be removed or extended, the Commission will consider whether those individuals utilizing the temporary modification have agreed to an implementation plan for eliminating the need for the temporary modification, whether such individuals have demonstrated due diligence in trying to implement such a plan, the impact on the uses of the stream in the area of the temporary modification and upstream and downstream of that area, and all other relevant factors.

(d) Procedures for Assigning or Changing a Standard or Granting, Removing, or Extending a Temporary Modification

Assigning or changing a standard or granting, removing, or extending a temporary modification shall be accomplished by a rule after a rulemaking hearing. Rulemaking hearings shall be conducted according to the Procedural Regulations of the Commission. A proposal regarding a standard or a temporary modification may be considered at any time.

Any interested person shall have the right to petition the Commission to consider a standard or a temporary modification. Such a petition shall be open to public inspection. Pursuant to C.R.S. 1973, 24-4-103(7), action on such petition shall be within the discretion of the Commission. The Commission may also decide to consider a standard or a temporary modification on its own motion. Any public hearing on a standard or a temporary modification will be preceded by sixty (60) days notice.

In making a decision regarding a standard or a temporary modification, the Commission will consider the principles set forth in these Regulations. The decision will be made by the Commission applying its expertise after analyzing the evidence presented at public hearing and considering the requirements of law, its own policies, and all other matters deemed pertinent in the discretion of the Commission.

3.1.8 ANTIDEGRADATION STANDARD

(1) Existing uses shall be maintained as required by state and federal law. No further water quality degradation is allowable which would interfere with or become injurious to existing uses.

(2) High Quality Waters - Class 1 - no degradation shall be allowed in High Quality Waters - Class 1. (See Section 3.1.13(e)(i). These waters shall be maintained and protected at their existing quality.

(3) High Quality Waters - Class 2 - these waters shall be maintained and protected at their existing quality unless the Commission chooses, after full intergovernmental coordination and public participation, to allow lower water quality as a result of necessary and justifiable economic or social development. See Section 3.1.13(e)(ii). In no event, however, may degradation of water quality interfere with or become injurious to existing uses.

(4) Waters Other Than High Quality Waters - the numeric values of waters other than high quality waters may change; however, a quality must be maintained which will protect the existing and classified uses.

3.1.9 FLOW CONSIDERATIONS

(1) Low Flow Exceptions

Water quality standards shall apply at all times except where surface waters are below minimum annual average seven-consecutive-day flow expected to occur once in ten (10) years. For certain substances, such as ammonia, the low flow exceptions may be based on the seasonal average seven-consecutive-day low flow expected to occur once in ten (10) years. Each season will normally consist of a minimum of three months.

(2) Waters Not Yet Classified

Discharges to waters not presently classified must meet established effluent limitation regulations, the basic and antidegradation standards and control regulations. Effluent flows which reach a classified body of water, even though the discharge point is to a water not yet classified, must be of a quality which will not cause the standards of the classified body of water to be violated.

(3) Mixing Zone

(a) The mixing zone is that area of a water body designated

3.1.9 (continued)

on a case-by-case basis by the Division which is contiguous to a point source and in which the standards may not apply. The mixing zone is intended to serve as a zone of initial dilution in the immediate area of a discharge; however, the ecological and human health effects of some pollutants may be so adverse that a mixing zone for such pollutants will not be allowed.

(b) The size and shape of the mixing zone will be determined by the Division considering the following factors:

(i) Where necessary to protect aquatic life, there shall be a zone of passage around the mixing zone which allows sufficient passage of aquatic life so as not to have a detrimental effect on their population.

(ii) Biological communities or populations of imported species shall not be interfered with to a degree which is damaging to the ecosystem in adjacent waters; nor shall there be detrimental effects to other beneficial uses.

(iii) There shall be no mixing zones for certain harmful substances such as those identified pursuant to 307(a) of the Federal Act.

(iv) Mixing zones shall not overlap so as to cause harmful effects in adjacent waters or to interfere with zones of passage.

(v) Concentrations of harmful substances in the mixing zone shall not exceed the 96-hour LC-50 concentrations for biota significant to the aquatic community.

(vi) The conditions of the mixing zone shall be controlled so as to comply with items 1(a) (b) and (f) of the Basic Standards, Section 3.1.11.

(vii) In establishing a mixing zone, potential

3.1.9 (continued)

groundwater aquifer contamination shall be considered.

(viii) The Division will also be guided by other concerns such as the mixing zone discussion in EPA, Guidelines for State and Areawide Water Quality Management Program Development, published November 1976, or similar documents.

3.1.10 DISCHARGE TO OTHERWISE DRY STREAM BEDS

"Otherwise dry stream beds" are stream beds which would be dry if effluent were not being discharged into them. To insure that conditions in such stream beds will not impair existing or classified uses in the stream or in downstream waters and will protect groundwater aquifers, discharge limitations more stringent than those established in effluent limitation regulations will be imposed if necessary.

3.1.11 BASIC STANDARDS APPLICABLE TO WATERS OF THE STATE

All waters of the State are subject to the following basic standards; however, discharge of substances regulated by permits which are within those permit limitations shall not be a basis for enforcement proceedings under these basic standards:

(1) Substances attributable to human-induced discharges, as indicated below, not otherwise controlled by permits, BMP's, or plans of operation approved by the Division, shall not be introduced into the waters of the State:

(a) which can settle to form bottom deposits detrimental to the beneficial uses. Deposits are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud; or

(b) which form floating debris, scum, or other surface materials sufficient to harm existing beneficial uses; or

(c) which produce color, odor, or other conditions

3.1.11 (continued)

in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or

(d) in amounts, concentrations, or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life; or

(e) in amounts, concentrations or combination which produce a predominance of undesirable aquatic life; or

(f) in concentrations which cause a film on the surface or produce a deposit on shorelines.

(2) The radioactive materials in surface and groundwaters shall be maintained at the lowest practical level. In no case shall radioactive materials in surface waters be increased by any cause attributable to municipal, industrial, or agricultural practices or discharges so as to exceed the following levels:

Parameter	Picocuries per Liter
Cesium 134	80
Plutonium 238, 239, and 240	15
Radium 226 and 228	5
Strontium 90	8
Thorium 230 and 232	60
Tritium	20,000

No increase in radioactive materials in groundwaters of the State over naturally-occurring concentrations shall be permitted, except under specific circumstances that must be approved by the Commission or the Division pursuant to applicable regulations.

(3) THE ORGANIC PARAMETERS CONTAINED IN THE FOLLOWING TABLE ARE APPLICABLE TO ALL WATERS OF THE STATE.

NO INCREASE IN ORGANIC PARAMETERS IN GROUNDWATERS OF THE STATE OVER NATURALLY-OCCURRING CONCENTRATIONS SHALL BE PERMITTED, EXCEPT UNDER SPECIFIC CIRCUMSTANCES THAT MUST BE APPROVED BY THE COMMISSION OR THE DIVISION PURSUANT TO APPLICABLE REGULATIONS.

TABLE-IV
ORGANIC PARAMETERS

PARAMETER (1) ORGANIC (mg/l)	RECREATIONAL CLASS 1 Primary Contact	RECREATIONAL CLASS 2 Secondary Contact	AQUATIC LIFE CLASS 1 Cold Water Biota & Warm Water Biota	AQUATIC LIFE CLASS 2	AGRICULTURE	DOMESTIC WATER SUPPLY CLASS 1	DOMESTIC WATER SUPPLY CLASS 2
Chlorinated Pesticides							
Aldrin(2)			0.000003(A,H,I)(3)		To be established on a case-by-case basis		
Chlordane						0.000004	0.000004
Dieldrin(2)			0.000003(A,H,I)(3)				
DDT (DDD & DDE)(2)			0.000001(A,H,I)				
Endrin			0.000004(A)			0.002(E)	0.002(E)
Heptachlor(2)			0.000001(A)				
Lindane			0.00001(A,H)			0.004(E)	0.004(E)
Methoxychlor			0.00003(A)			0.1(E)	0.1(E)
Mirex			0.000001(A,H)				
Toxephene			0.000005(A,H,I)			0.005(E)	0.005(E)
Orthophosphate Pesticides							
Demeton			0.0001(A,H)				
Endosulfan			0.000003(A)				
Guthion			0.00001(A,H)				
Malathion			0.0001(A,H)				
Parathion			0.00004(A,H)				
Chlorophenoxys (Herbicides)							
2,4-D						0.1(E)	0.1(E)
(Polychlorinated PCB Biphenyls) (4)			0.000001(A,H,I)			(4)	(4)
Chlorophenol			0.001(A,H)			0.001(A)	0.001(A)
Monohydric phenol			0.5(H)			0.001(A)	0.001(A)
Benzidine			0.0001(A,I)			0.0001(E)	0.0001(E)

TABLE IV - FOOTNOTES

(1) All organics not on this partial list are covered under Basic Standards, Section 3.1.11.

(2) The persistence, bioaccumulation potential, and carcinogenicity of these organic compounds cautions human exposure to a minimum (EPA).

(3) Aldrin and dieldrin in combination should not exceed 0.000003 mg/l.

(4) Every reasonable effort should be made to minimize human exposure (EPA).

3.1.12 SALINITY AND SUSPENDED SOLIDS

The Commission recognizes that excessive salinity and suspended solids levels can be detrimental to the water use classifications. The Commission has established salinity standards for the Colorado River Basin ("Water Quality Standards for Salinity including Numeric Criteria and Plan of Implementation for Salinity Control", Commission Regulation 3.9) but has not established or assigned other standards for salinity or suspended solids. This section is reserved for additional salinity and suspended solids control practices to be developed through 208 plans, coordination with agricultural agencies, and further studies of existing water quality.

3.1.13 STATE USE CLASSIFICATIONS

Waters are classified according to the uses for which they are presently suitable or intended to become suitable. When the term "waters" is used without the modifiers "surface" or "ground", it includes both surface and groundwater. In addition to the classifications, one or more of the qualifying designations described in paragraph 3.1.13(2), may be appended.

(1) Classifications

(a) Recreation

(i) Class 1 - Primary Contact

These surface waters are suitable or intended to become suitable for prolonged and intimate contact with the body or for recreational activities when the ingestion of small quantities of water is likely to occur. Such waters include but are not limited to those used for swimming.

(ii) Class 2 - Secondary Contact

These surface waters are suitable or intended to become suitable for recreational uses on or about the water which are not included in the primary contact subcategory.

(b) Agriculture

These waters are suitable or intended to become suitable for irrigation of crops usually grown in Colorado and which are not hazardous as drinking water for livestock.

(c) Aquatic Life

These surface waters are suitable or intended to become

3.1.13 (continued)

suitable for the protection and maintenance of aquatic life forms as described below:

(i) Class 1 - Cold Water Aquatic Life

These waters provide, or could provide, a habitat consisting of water quality levels and other considerations such as flow and stream bed characteristics which do or could protect and maintain a wide variety of cold water biota, including sensitive species. Cold water biota are considered to be life forms, including trout, in water where temperatures do not normally exceed 20° C. If there are limitations to the potential variety of life forms, they are due primarily to uncorrectable water quality conditions. This information will be considered in assigning specific standards.

(ii) Class 1 - Warm Water Aquatic Life

These waters provide, or could provide, a habitat consisting of water quality levels and other considerations such as flow and stream bed characteristics which do or could protect and maintain a wide variety of warm water biota, including sensitive species. Warm water biota are considered to be the life forms in waters with temperatures frequently exceeding 20° C. If there are limitations to the potential variety of life forms, they are due primarily to uncorrectable water quality conditions. This information will be considered in assigning specific standards.

(iii) Class 2 - Cold and Warm Water Aquatic Life

These are waters where the potential variety of life forms is presently limited primarily by flow and stream bed characteristics. Standards will be assigned to protect existing species and encourage the establishment of more sensitive species which are compatible with the flow and stream bed characteristics.

(d) Domestic Water Supply

These waters are suitable or intended to become suitable for

3.1.13 (continued)

potable water supplies. There may be waters which do not fit into either the Class 1 or Class 2 classifications but which may be suitable for domestic water supplies after special treatment.

(i) Class 1 - Uncontaminated Groundwaters

These are groundwaters which receive a high degree of natural protection and meet, without treatment, all Colorado drinking water regulations and any revision, amendments, or supplements thereto. Colorado drinking water regulations require disinfection of all domestic water supplies regardless of source unless a waiver has been obtained.

(ii) Class 2 - Waters Requiring Disinfection and/or Standard Treatment

These are waters which, after receiving approved disinfection such as simple chlorination or its equivalent or which after receiving standard treatment (defined as coagulation, flocculation, sedimentation, filtration, and disinfection with chlorine or its equivalent) will meet Colorado drinking water regulations and any revisions, amendments, or supplements thereto. This class may include groundwaters which, due to natural or human causes, do not meet the requirement for Class 1 waters.

(e) Existing High Quality Waters

Waters currently of a quality higher than necessary to support primary contact recreation and propagation of fish, shellfish, and wildlife and are generally suitable for agriculture and domestic water supply may be classified as high quality waters. This classification precludes the necessity to classify for other beneficial uses.

(i) Class 1 - These are high quality waters which constitute an outstanding state or national resource such as waters in national and state parks and forests, wildlife refuges, and waters of exceptional recreational and ecological significance.

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3.1.13 (continued)

For example, waters which provide a unique habitat for an endangered or threatened species or rivers designated under the Wild and Scenic Rivers Act may be designated as outstanding state or national resource waters. No degradation of these waters will be allowed; thus, these waters will be protected and maintained at their existing quality.

(ii) Class 2 - These are other high quality waters which are not classified as outstanding state or national resources. These waters shall be maintained and protected at their existing quality unless the Commission chooses, after full intergovernmental coordination and public participation, to allow lower water quality as a result of necessary and justifiable economic or social development. In no event, however, may degradation of water quality interfere with or become injurious to existing instream water uses.

(2) Qualifiers

The following qualifiers may be appended to any classification to indicate special considerations. Where a qualifier applies, it will be appended to the use classification; for example, "Class 1, Warm Water Aquatic Life (Goal)".

(a) Goal

A qualifier which indicates that the waters are presently not fully suitable but are intended to become fully suitable for the classified use. "Goal" will be used to indicate that a temporary modification for one or more of the underlying numeric standards has been granted.

(b) Seasonal

A qualifier which indicates that the water may only be suitable for a classified use during certain periods of the year. DURING THOSE PERIODS WHEN WATER IS IN THE STREAM, THE STANDARDS AS DEFINED IN 3.1.7(1)(c) AND 3.1.9(1) SHALL APPLY.

(c) Interrupted Flow

A qualified which indicates that due to natural or human-induced conditions the continuity of flow is broken, not necessarily according to a seasonal schedule. This quali-

3.1.13 (continued)

fier appended to a classification indicates that the flow conditions still permit the classified use during period of flow. THE PRESENCE OF WATER DIVERSIONS IN A STREAM DOES NOT CHANGE THE CLASSIFICATIONS AND STANDARDS, AND THE STANDARDS DO NOT REQUIRE THAT FLOW BE MAINTAINED IN THE STREAM.

(3) Areas Requiring Special Protection

In special cases where protection of beneficial uses requires standards not provided by the classification above, special standards may be assigned after full public notice and hearings. Cases where special protection may be needed include but are not limited to wildlife preserves and waterbodies endangered by eutrophication.

3.1.14 INTEGRATION INTO DISCHARGE PERMITS

(1) A classification and/or standard assigned by the Commission to any segment of waters of the State may affect the degree of treatment required prior to discharge of effluent to such waters. Where effluent limitation regulations applicable to discharges into a segment of state waters or Best Management Practices (BMP's) or other activities are adequate to maintain or attain the assigned classifications and standards, only the effluent limitation regulations will control the discharge. (See Regulation 10.1). Such segments are termed "effluent limited".

(2) Where the effluent limitation regulations applicable to the discharge or BMP's or other controls are inadequate to maintain or attain the assigned classifications and standards, a degree of treatment which will maintain or attain such classifications and standards will be required. Such segments are termed "water quality limited".

(3) For water quality limited segments, Total Maximum Daily Loads (TMDL's) and Waste Load Allocations will be developed and integrated into discharge permits. Flow modifications and other factors may also affect TMDL's and may have a corresponding effect on discharge permits. Permits will also be written in accordance with any temporary modification granted by the Commission to the underlying numeric standards assigned to those waters and a plan for eliminating the temporary modifications shall be included in the discharge permits. The requirements for such plans are discussed in Section 3.1.7(2)(b).

(4) Discharge permits will be issued by the Division to comply with basic, narrative, and numeric standards and control regulations

3.1.14 (continued)

so that all discharges to waters of the State protect the classified uses.

(5) Dischargers will not be required to regularly monitor for any parameters that are not identified by the Division as being of concern.

3.1.15 SEVERABILITY

The provisions of these regulations are severable, and if any provisions or the application of the provisions to any circumstances is held invalid, the application of such provision to other circumstances and the remainder of these Regulations shall not be affected thereby.

3.1.16 STATEMENT OF BASIS AND PURPOSE

These Regulations establish Basic Standards and an Antidegradation Standard (Section 3.1.11 and Section 3.1.8). They also establish a system for classifying State waters, for assigning standards, and for granting temporary modifications. These Regulations do not classify State waters, nor do they assign any numeric standards except those radiological standards listed under Basic Standards. In addition, one of these Regulations is a control regulation. Section 3.1.4 makes it a violation to release pollutants into State waters without the treatment or other corrective action necessary to protect the beneficial uses of the waters, or to conduct, operate, or maintain facilities, processes, activities, or waste piles in such a way as to have any adverse effect on the beneficial or classified uses. This section gives the Colorado Water Quality Control Division greater flexibility to protect and maintain the quality of State waters. It is based on C.R.S. 1973, 25-8-102, 25-8-202(1), and 25-8-207(c).

The Colorado Water Quality Control Act requires the Commission to classify all waters of the State. These Regulations are intended to comply with the legislative intent as stated in C.R.S. 1973, 25-8-102(2):

> *"It is further declared to be the public policy of this state to conserve state waters and to protect, maintain, and improve the quality thereof for public water supplies, for protection and propagation of wildlife and aquatic life, and for domestic, agricultural, industrial, recreational, and other beneficial uses; to provide that no*

3.1.16 (continued)

pollutant be released into any state waters without first receiving the treatment or other corrective action necessary to protect the legitimate and benefical uses of such waters; to provide for the prevention, abatement, and control of new or existing water pollution; and to cooperate with other states and the federal government in carrying out these objectives".

In addition, the subject Regulations are consistent with the Federal Clean Water Act which states, in part: (Section 101(a))

"The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.....
(1) it is the national goal that discharge of pollutants into the navigable waters be eliminated by 1985;
(2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;"

C.R.S. 1973, 25-8-203(2) provides that the types of water classes shall be based on or intended to indicate relevant characteristics such as:

"(c) Present uses of the water, the uses for which the water is suitable in its present conditions, or the uses for which it is to become suitable as a goal" and
"(e) The need to protect the quality of the water for human purposes and also for the protection and propagation of wildlife and aquatic life;"

Such regulations are known as Classifications. C.R.S. 1973, 25-8-204 also requires that the Commission shall promulgate regulations which describe water characteristics or the levels of protection necessary to protect the beneficial uses. Such regulations are referred to as Standards.

In formulating the Regulations governing stream classifications, the

3.1.16 (continued)

Commission relied upon portions of the January 1974 Water Quality Standards and Stream Classifications, on the work of a broadly-based scientific committee which met publicly for several years, on testimony given at two oversight hearings and two series of public hearings, on workshops involving the public, and on documentary evidence including, but not limited to, the following:

1. EPA - Quality Criteria for Water, July 1976, U.S. Environmental Protection Agency, U.S. Government Printing Office: 1977 0-222-904, Washington, D.C. 256 p.

2. EPA - Water Quality Criteria 1972, Ecological Research Series, National Academy of Sciences, National Academy of Engineering, EPA-R3-73-033, March 1973, Washington, D.C. 594 p.

3. Davies, P.H. and Goettl, J.P., Jr., July 1976, Aquatic Life - Water Quality Recommendations for Heavy Metal and Other Inorganic Toxicants in Fresh Water, submitted to Water Quality Standards Revision Committee and Colorado Water Quality Control Commission, 29 p.

4. Parametrix Inc., Attachment II - Parametrix Reports - Toxicology Assessments of As, Cu, Fe, Mn, Se and Zn, May 1976, Bellevue, Washington, 98005, submitted to Water Quality Control Commission by Gulf Oil, Inc. 161 p.

5. EPA - National Interim Primary Drinking Water Regulations, 40 CFR, Part 141 (Code of Federal Regulations) Washington, D.C.

6. EPA - Proposed National Secondary Drinking Water Regulations, Federal Register, Vol. 42, No. 62, March 1977, pages 17148-17149.

7. Material generated by the Committee on Colorado Water Quality Standards and Stream Classification, such as Summary of Concentration Limits for the Radionuclides Under Consideration by Numbers Subcommittee , July 1976, Milton W. Lammering, Ph.D., Chief, Technical Investigations Branch, Surveillance and Analysis Division, EPA, Washington, D.C. 4 p.

3.1.16 (continued)

More than thirty meetings, on notice to the public, were held during the formulation of these Regulations.

Section 303 of the Federal Act requires that water quality standards be established for every state. EPA will only promulgate such standards if the state does not promulgate acceptable water quality standards itself. Both the Federal and the State Acts require review of the water quality standards and stream classifications every three years. This review of the standards and classification system is pursuant to that required review.

With the exception of 3.1.4, these Regulations supersede those adopted in May, 1978. The May 1978 regulations superseded or were to phase out the January 1974 Water Quality Standards and Stream Classifications and the Temporary Stream Classification Exception Designated as Class C, effective October, 1976. As the Commission reclassifies State waters, previous classifications will be phased out. Those which have never been classified will be controlled by the Basic and Antidegradation Standards of these Regulations, by effluent limitations, and by classified uses in adjacent waters. Until such time as they are reclassified, streams which were classified under the previous system will be controlled by the limitations accompanying the previous system and all the factors mentioned above.

These Regulations establish basic water quality standards (called Basic Standards) which differ very little from the Basic Standards adopted in January, 1974. Previous Basic Standards stated that *"the radioactivity of surface waters shall be maintained at the lowest practicable level and shall, in no case, except when due to natural causes, exceed the latest federal drinking water standard....."*. To further clarify the previous Basic Standards, the present Regulations set numeric standards for six radioactive substances. Four of the levels - Cesium 134, Radium 226 and 228, Strontium 90, and Tritium - are identical to those in the federal drinking water standards. With Plutonium 238, 239, and 240, and Thorium 230 and 232, the numeric standards are consistent with a goal of keeping exposures below 4 millirems per year (the level suggested for other human-made radionuclides in the National Interim Primary Drinking Water Regulations. Because of the difficulty of removing these radionuclides by conventional treatment procedures, it is necessary and important to restrict their levels in the waters. Their potential adverse effect on human health suggests that extreme caution be exercised in their release to State waters. In addition to addressing radioactivity, Basic Standards set forth certain other minimum standards apply-

3.1.16 (continued)

ing to all waters regardless of beneficial use(s). These Basic Standards (Section 3.1.11) are essential to a program designed to protect the waters of the State because they describe the fundamental condition that all waters must meet. All of the previously-cited evidence and testimony form the basis for the Basic Standards.

An Antidegradation Standard, required by state and federal law, is included. It requires that the quality of the waters cannot be degraded so as to interfere with their present uses. Furthermore, certain high quality waters may be identified. Because of the special value of these waters, no parameters may be degraded (High Quality Water - Class 1), or may be degraded only when the Commission allows lower water quality as a result of necessary economic or social development (High Quality Water - Class 2).

Under the previous system (January 1974), waters were classified as A_1, A_2, B_1, or B_2. Waters designated A_1 or A_2 were defined as waters suitable or to become suitable for all purposes for which raw water is customarily used, including primary contact recreation. Waters classified B_1 or B_2 were defined similarly except they were not protected for primary contact recreation. A_1 and B_1 applied to cold waters and A_2 and B_2 to warm waters. The temperature classifications were consistent with characteristics for cold and warm water aquatic life. Because that classification system was not comprehensive, dissatisfaction was expressed by many including those being regulated and those doing the regulating. Therefore, a new system was devised where uses to be protected could be identified individually and levels for various parameters could be identified which would protect the specified use. Subsequently, a stream could be classified for as many of those uses for which it is presently suitable and those for which it is to become suitable within the next twenty years.

The Classification Subcommittee of the Water Quality Standards and Stream Classification Committee recommended the following classifications: Recreation (primary contact and secondary contact), Agriculture, Aquatic Life (Cold Water and Warm Water), Domestic Water Supply (two classes). The Subcommittee also recommended a Wildlife Classification for protection of criti-

3.1.16 (continued)

cal wildlife areas. This classification has been dropped, however, in favor of a section entitled "Areas Requiring Special Protection" in which various special situations can be addressed on a case-by-case basis.

An Industrial classification and a Stock Watering Classification were considered and rejected by both the Subcommittee and the Commission. Regarding an Industrial classification, it was decided that water supply requirements for different industries vary so greatly that it would be virtually impossible to decide what parameters and what levels would be appropriate for such a classification. At the request of the cattle and dairy interests, the Agriculture classification was defined so that in addition to being suitable for irrigation, it would also be suitable for stock watering. The rationale was that it would be difficult to segregate the two uses. If, in specific areas, the waters are in fact segregated and numeric standards for those parameters to protect stock watering are not necessary, the Commission can respond by not assigning those standards to those waters.

The Aquatic Life classification went through a number of changes during the public hearing process and was eventually defined in terms of habitat. The temperature differentiation was retained resulting in cold and warm water categories under Class 1. The major change was a differentiation made between waters where the potential life forms are presently limited primarily to flow and stream bed characteristics rather than water quality characteristics. An additional classification was added primarily in response to federal requirements that high quality waters be identified in each state. This classification is appropriately entitled High Quality Waters (in two classes).

Stream classifications may either be upgraded or downgraded upon reclassification. Upgrading means that additional uses are identified and will be protected. Downgrading will eliminate one or more of the presently classified uses. A finding must be made by the Commission that the stream is not attaining that use and that such use is unattainable in a twenty-year period because of at least one of the conditions set forth. The first three conditions are essentially the same as the conditions for the Class C Exception under the previous system. The Class C was a temporary classification for the purpose of granting a temporary exception for

3.1.16 (continued)

one or more parameter levels otherwise in effect on a stream. The criteria, however, were of a very permanent nature and are now much more appropriately applied to the more permanent downgrading situation. To accommodate the agricultural industry, an additional criterion was established recognizing agricultural practices considered satisfactory for the locality. The twenty-year time period for attainability was used because the areawide wastewater management plans (208 plans) are based on twenty years. The regulations also allow the Commission to find that the former classifications had no factual basis and therefore did not reflect actual beneficial uses and that this would be an additional reason for downgrading.

The concept of the previous Class C Exception is now incorporated into a section entitled Temporary Modifications. When a use classification is assigned to a stream, numeric standards may also be assigned to protect that use. When a numeric standard is not being met at the present time, a temporary modification to this numeric standard may be granted. All planning, discharge permits, new wastewater facilities and other water quality control actions are to be geared towards eliminating the need for the temporary modification. Such temporary modifications must be reviewed at least every three years and may be extended or removed. In general, requests for temporary modifications are preferred over the more permanent downgrading. They serve as reminders that conditions are correctable and may increase the priority for funding to attain the classified use and the underlying numeric standard.

In addition, there are Qualifiers which may be appended to a use classification to indicate special considerations. The "Goal" qualifier indicates that the waters are presently not fully suitable for such use. The "Seasonal" qualifier indicates that the water may only be suitable for the classified use during certain periods of the year. The "Interrupted Flow" qualifier indicates that while flow may be interrupted, the flow conditions still permit the classified use during periods of flow. The expanded use classification, the upgrading and downgrading provisions, the temporary modifications and the qualifiers make this system far more flexible than the previous system.

All waters of the State will be classified under this regulatory system through a process which provides for public notice and a

3.1.16 (continued)

public hearing before any classification or numeric standard is assigned. Whenever possible, the Commission will hold the public hearing in the general locality of the waters being classified. All classifications, standards, and temporary modifications will be assigned by the Commission by rule after consideration of all available data and evidence presented at the hearings, and can be changed only by a new rulemaking decision. Numeric standards will be assigned when there is documentation showing that a particular numeric level is appropriate for protecting the classified use. Standards may be set for an entire stream or for one or more segments thereof. Standards may be assigned at the time classifications are assigned or at any time thereafter. This is intended to be a dynamic process so that new standards may be adopted on a regular basis as the supporting information becomes available. The scientific and technological rationale for the standards will be developed from information obtained at the classification hearings.

Public participation in the process is always encouraged. A change in a classification, standards, or temporary modification may be sought at any time; however, it is within the discretion of the Commission to decide whether or not to consider the proposed change. In any case, all classifications, standards, and temporary modifications must be reviewed every three years.

The establishment of classifications and standards is based on the long-established fact that natural waters have a limited ability to assimilate wastes without rendering the water unfit for various beneficial uses. The quantity of pollutants that can be assimilated by a stream or water body is directly related to the quantity of water available for dilution and assimilation. Stream flows and levels change during the year and from year to year. Extremely low flows or water levels may not provide enough dilution water to assimilate the pollutants which, under normal or high flows, would not impair the assigned uses; therefore, it is reasonable to establish a flow below which the water quality standards assigned to State waters are not in force. This low flow or water level is commonly accepted as the "minimum annual average seven-consecutive-day flow expected to occur once in ten years" - 7-day 10-year low flow. The 7-day 10-year low flow may be determined by various statistical analyses of stream flow records covering at least ten years.

3.1.16 (continued)

The Regulations also permit a seasonal average low flow rather than an annual average low flow. A seasonal average low flow, for instance, may result in a less restrictive discharge permit requirement for ammonia in the winter because of the toxicity relationship to temperature and pH.

Another concept which uses the dilution and assimilative capacity of a stream and may result in a less restrictive discharge permit requirement is the "mixing zone". A mixing zone is intended to serve as a zone of initial dilution in the immediate area of a discharge. The water quality standards assigned to the receiving waters are not in effect in the mixing zone. The Division designates the mixing zone on a case-by-case basis in accordance with the criteria established in the Regulations, Section 3.1.9(3). The mixing zone is well explained in that section and further information can be found in the Federal Water Pollution Agency's Water Quality Criteria, 1968, p. 31.

Attached to the Regulations are four Tables showing numeric levels for various parameters. The Tables are not adopted as regulations. The numeric levels set forth in the Tables are levels established by the Commission after careful analysis of all available information and are generally considered to protect the beneficial use classifications of the waters of the state. They are intended to guide the Commission and others at the use classification and numeric-standard-setting hearings. They carry no presumptive validity or applicability. Numeric standards may not be assigned for all the parameters listed in the Tables, and conversely, standards may be assigned for parameters which are not listed in the Tables.

TABLES

(1) INTRODUCTION

The numeric levels for various parameters in Tables I, II, ~~III,~~ AND III, ~~and IV~~ are levels established by the Commission after careful analysis of all available information and are generally considered to protect the beneficial use classifications of the waters of the State. They are intended to guide the Commission and others at the use classification and numeric-standard-setting hearings. They carry no presumptive validity or applicability. Numeric standards will be assigned based on the evidence presented at the classification and numeric-standard-setting hearings.

Numeric standards may not necessarily be assigned for all parameters listed in the Tables. Besides the parameters in the Tables, there may be other parameters for which numeric standards will be assigned. Entities such as 208 agencies, local municipalities and industries, citizens' groups, the Water Quality Control Division, state and federal agencies, environmental organizations, and other interested persons having specific water quality data for the waters being classified, are encouraged to present such information. These Tables are not adopted as regulations.

The toxic metals for Aquatic Life have different numeric levels for different ranges of average water hardness or alkalinity. Water hardness and alkalinity are being used here as an indication of differences in the complexing capacity of natural waters and the corresponding variation of metal toxicity. Other factors such as organic and inorganic ligands, pH, and other factors affecting the complexing capacity of the waters will be considered.

CHEMICAL DESIGNATIONS IN THE TABLES SHALL BE EQUIVALENT TO THE DESIGNATION USED IN EPA'S MOST RECENT CRITERIA DOCUMENT.

(2) TESTING PROCEDURES

Various testing procedures to determine that numeric values for water quality parameters may be appropriate to present to the Water Quality Control Commission at stream classification hearings. (See Section 3.1.6(3)). These include:

(a) Standard Test Procedures:

(i) Code of Federal Regulations, Title 40, Part 136;

(ii) The latest approved EPA Methods for Chemical Analysis of Water and Wastes;

(iii) Standard Methods for the Examination of Water and Wastewater (current edition), American Public Health Association;

(iv) ASTM Standards, Part 31, Water;

(v) EPA Biological Field and Laboratory Methods

(b) Bioassay Procedures:

(i) The latest EPA Methods for Chemical Analysis of Water and Wastewater; ASTM, Standard Methods for Examination of Water, Wastewater;

(ii) WATER QUALITY CONTROL DIVISION GUIDELINE TITLED: GUIDELINES FOR DEVELOPING SITE SPECIFIC AQUATIC LIFE CRITERIA, WATER QUALITY CONTROL DIVISION. THIS REFERENCE DOES NOT INCLUDE LATER AMENDMENTS TO OR ADDITIONS OF SUCH DOCUMENT AND IS AVAILABLE AT THE OFFICE OF THE DIRECTOR OF THE WATER QUALITY CONTROL DIVISION, 4210 EAST 11TH AVENUE, DENVER, COLORADO.

(iii) Other approved EPA methods

(c) Other Procedures

Other procedures may be deemed appropriate by either the Water Quality Control Commission and/or the Water Quality Control Division.

(3) REFERENCES

Capital letters following levels in the Tables indicate the sources of the level; they are referenced below. In some cases, the source is described in a footnote.

(A) EPA, Quality Criteria for Water, July 1976, U.S. Environmental Protection Agency, U.S. Government Printing Office: 1977 0-222-904, Washington, D.C. 256 p.

(B) EPA - Water Quality Criteria 1972, Ecological Research Series, National Academy of Sciences, National Academy of Engineering, EPA-R3-73-033, March 1973, Washington, D.C. 594 p.

(C) Davies, P.H. and Goettl, J.P., Jr., July 1976, Aquatic Life - Water Quality Recommendations for Heavy Metal and Other Inorganic Toxicants in Fresh Water, submitted to Water Quality Standards and Stream Classification Committee and Colorado Water Quality Control Commission, 29 p.

(D) Parametrix Inc., Attachment II, Parametrix Reports - Toxicology Assessments of As, Cu, Fe, Mn, Se, and Zn, May 1976, Bellevue, Washington, 98005, submitted to Water Quality Control Commission by Gulf Oil Corp., Inc., 161 p.

(E) EPA - National Interim Primary Drinking Water Regulations, 40 Code of Federal Regulations, Part 141.

(F) EPA, March 1977, Proposed National Secondary Drinking Water Regulations, Federal Register, Vol. 42, No. 62, pp 17143-17147.

(G) Recommendations based on review of all available information by the Committee on Water Quality Standards and Stream Classification.

(H) American Fishery Society, June 1978, A Review of the EPA Red Book Quality Criteria for Water, (Preliminary Edition).

(I) Section 307 of the Clean Water Act, regulations promulgated pursuant to Section 307 and supporting material.

(m) m superscript: level modified by Commission.

TABLE I

PHYSICAL AND BIOLOGICAL

PARAMETERS

PARAMETER	RECREATIONAL		AQUATIC LIFE			AGRICULTURE	DOMESTIC WATER SUPPLY	
	CLASS 1 Primary Contact	CLASS 2 Secondary Contact	CLASS 1 Cold Water Biota	CLASS 1 Warm Water Biota	CLASS 2		CLASS 1	CLASS 2
PHYSICAL:					To be established on a case-by-case basis.			
D.O. (mg/l)(1)	Aerobic(2)(A)	Aerobic(2)(A)	6.0(3)(G) 7.0-spawn	5.0(A)		Aerobic(2)(A)	Aerobic(2)(A)	Aerobic(2)(A)
pH (Std. Units)	6.5-9.0(B[m])		6.5-9.0(A)	6.5-9.0(A)			5.0-9.0(A)	5.0-9.0(A)
Suspended Solids (mg/l)	(4)	(4)	(4)	(4)		(4)		(4)
& Turbidity (TU)							1.0 TU(E)	
Temperature (°C)			Max 20°C w/3°C increase(G)(5)	Max 30°C w/3°C increase(G)(5)				
BIOLOGICAL:								
Fecal Coliforms per 100 ml (Geometric mean)	200(A)(6)	2000(G[m])(6)					0(7)(E)	2 100(E)

TABLE I - FOOTNOTES

(1) Where dissolved oxygen levels less than these levels occur naturally, a discharge shall not cause a further reduction in dissolved oxygen in receiving water.

(2) An effluent shall be regulated to maintain aerobic conditions, and a guideline of 2.0 mg/liter dissolved oxygen in an effluent should be maintained, unless demonstrated otherwise.

(3) A 7 mg/liter standard, during periods of spawning of cold water fish, shall be set on a case-by-case basis as defined in the NPDES permit for those dischargers whose effluent would affect fish spawning.

(4) Suspended solid levels will be controlled by Effluent Limitation Regulations, Basic Standards, and Best Management Practices (BMP's).

(5) Temperature shall maintain a normal pattern of diurnal and seasonal fluctuations with no abrupt changes and shall have no increase in temperature of a magnitude, rate, and duration deemed deleterious to the resident aquatic life. Generally, a maximum 3° C increase over a minimum of a four-hour period, lasting for 12 hours maximum, is deemed acceptable for discharges fluctuating in volume or temperature. Where temperature increases cannot be maintained within this range using BMP, BATEA, and BPWTT control measures, the Division will determine whether the resulting temperature increases preclude an aquatic life classification.

(6) Fecal coliform is an indicator only. It may indicate the presence of pathogenic organisms; however, fecal coliform counts from agriculture or urban runoff may not indicate organisms detrimental to human health.

(7) For drinking water with or without disinfection.

20-955 O—84——80

TABLE II

INORGANIC PARAMETERS

PARAMETER	RECREATIONAL		AQUATIC LIFE			AGRICULTURE	DOMESTIC WATER SUPPLY	
	CLASS 1 Primary Contact	CLASS 2 Secondary Contact	CLASS 1 Cold Water Biota	CLASS 1 Warm Water Biota	CLASS 2		CLASS 1	CLASS 2
INORGANICS:					To be established on a case-by-case basis.			
Ammonia (mg/l as N)			0.02 unionized(A)	0.06 unionized(G)			0.5[1](B)	0.5[1](B)
- Total residual Chlorine (mg/l)			0.003(H)	0.003(H)				
Cyanide - Free (mg/l)			0.005(H)	0.005(H)		0.2(G)	0.2(B,D[m])	0.2(B,D[m])
Fluoride (mg/l)							[2](E)	[2](E)
Nitrate (mg/l as N)						100[3](B)	10(A,B)	10(A,B)
Nitrite (mg/l as N)			0.05(G)	0.5(G)		10[3](B)	1.0[1](B)	1.0[1](B)
Sulfide as H_2S (mg/l)			0.002 undissociated(A)	0.002 undissociated(A)			0.05(F)	0.05(F)
Boron (mg/l)						0.75(A,B)		
Chloride (mg/l)							250(F)	250(F)
Sulfate (mg/l)							250(F)	250(F)

TABLE II - FOOTNOTES

(1) To be applied at the point of water supply intake

(2) Fluoride levels vary from 2.4 mg/liter at 12.0 C and below, to 1.4 mg/liter between 26.3 C and 32.5 C, based upon the annual average of the maximum daily air temperature (see National Interim Primary Drinking Water Regulstions for specific limitations or any modification thereto).

(3) In order to provide a reasonable margin of safety to allow for unusual situations such as extremely high water ingestion or nitrite formation in slurries, the NO_3-N plus NO_2-N content in drinking waters for livestock and poultry should be limited to 100 ppm or less, and the NO_2-N content alone be limited to 10 ppm or less.

TABLE III

METAL PARAMETERS

~~PARAMETER~~ METALS ~~TOTAL~~ METALS - ~~Total~~ conc. in mg/l (1)	RECREATIONAL Class I Primary Contact	RECREATIONAL Class II Secondary Contact	AQUATIC LIFE (3) CLASS I Cold Water and Warm Water Biota Water Hardness or Alkalinity (mg/l) 0 to 100	100 to 200	200 to 300	300 to 400	400 plus	~~BA Bioassay~~ (Application factor or other) ~~(2)~~	CLASS 2	AGRI.	DOMESTIC WATER SUPPLY CLASS	CLASS 2
Aluminum (soluble)			0.1(C)	0.1(C)	0.1(C)	0.1(C)	0.1(C)	~~Bioassay~~	To be established on a case-by-case basis			
Arsenic			0.05(C)	0.05(C)	0.05(C)	0.05(C)	0.05(C)	~~Bioassay~~		0.1(A)	0.05(E)	0.05(E)
Barium											1.0(E)	1.0(E)
Beryllium			0.01(A)	0.3(C)	0.6(C)	0.9(C)	1.1(A)	~~Bioassay~~		0.1(A,B)		
Cadmium			~~0.004(C,H)~~ 0.0004(A,C,H)	0.001(A,C,H)	0.005(C,H)	0.010(C,H)	0.015(C,H)	~~Bioassay~~		0.01(B)	0.010(E)	0.010(E)
Chromium-Trivalent			0.1(H)	0.1(H)	0.1(H)	0.1(H)	0.1(H)			0.1(G)	0.05(E) (4)	0.05(E) (4)
Chromium-Hexivalent			0.025(H)	0.025(H)	0.025(H)	0.025(H)	0.025(H)			0.1(B)	0.05(E) (4)	0.05(E) (4)
Copper			0.005(C)	0.01(C)	0.01(C)	0.02(C)	0.04(C)	~~0.01AF(A)~~		0.2(B)	1.0(F)	1.0(F)
Iron			1.0(A,C)	1.0(A,C)	1.0(A,C)	1.0(A,C)	1.0(A,C)				0.3(sol)(F)	0.3(sol)(F)
Lead			0.004(C,H)	0.025(C,H)	0.050(C,H)	0.100(C,H)	0.150(C,H)	~~Bioassay (2)~~		0.1(B)	0.05(E)	0.05(E)
Manganese			1.0(C)	1.0(C)	1.0(C)	1.0(C)	1.0(C)	~~Bioassay~~		0.2(B)	0.05(sol)(F)	0.05(sol)(F)
Mercury			0.00005(A)	0.00005(A)	0.00005(A)	0.00005(A)	0.00005(A)				0.002(E)	0.002(E)
Nickel			0.05(C)	0.10(C)	0.20(C)	0.30(C)	0.40(C)	~~0.01AF(A)~~		0.2(B)		
Selenium			0.05(C,H)	0.05(C,H)	0.05(C,H)	0.05(C,H)	0.05(C,H)	~~0.001AF(H)~~		0.02(B,D)	0.01(E)	0.01(F)
Silver			0.00010(C,H)	0.00010(C,H)	0.00015(C,H)	0.00020(C,H)	0.00025(C,H)	~~0.01AF(A)~~			0.05(E)	0.05(E)
Thallium			0.015(C)	0.015(C)	0.015(C)	0.015(C)	0.015(C)	~~Bioassay~~				
Uranium			0.03(C)	0.2(C)	0.4(C)	0.8(C)	1.4(C)	~~Bioassay~~				
Zinc			0.05(C,H)	0.05(C,H)	0.10(C,H)	0.30(C,H)	0.60(C,H)	~~0.01AF(A)~~		2.0(B)	5.0(F)	5.0(F)

TABLE III - FOOTNOTES

(1) Concentrations of total alkalinity or other chelating agents attributable to municipal, industrial or other discharges or agricultural practices should not alter the total alkalinity or other chelating agents of the receiving water by more than 20%. Where the complexing capacity of the receiving water is altered by more than 20% or where chelating agents are released to the receiving water which are not naturally characteristic of that water, specific effluent limitations for pertinent parameters shall be established. In no case shall instream modification or alteration of total alkalinity or other chelating agents be permitted without Commission authorization.

(2) ~~Where required, bioassay procedures may be used to establish standards for a particular situation.~~
IN NO CASE CAN THE SUM OF THE INSTREAM LEVELS OF HEXAVALENT AND TRIVALENT CHROMIUM EXCEED THE WATER SUPPLY STANDARD OF .05 MG/L TOTAL CHROMIUM IN THOSE WATERS CLASSIFIED FOR DOMESTIC WATER USE.

(3) ~~For bioassay, lead concentration is based on soluble lead measurements, i.e., non-filterable lead using a 0.45 micron filter.~~
RESULTS OF BIOASSAY PROCEDURES SUCH AS OUTLINED IN WATER QUALITY CONTROL DIVISION GUIDELINES MAY BE USED TO SET STANDARDS ON A SITE SPECIFIC BASIS.

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3.1.17 STATEMENT OF BASIS AND PURPOSE REGARDING THE ADOPTION OF NON-SUBSTANTIVE CORRECTIONS AND CLARIFICATIONS FOR THE BASIC REGULATIONS AND CORRECTIONS TO THE NUMERIC STANDARDS FOR THE SAN JUAN AND DOLORES, GUNNISON AND LOWER DOLORES, RIO GRANDE, AND THE SOUTH PLATTE RIVER BASINS

In accordance with the requirements of 24-4-103(4), C.R.S. 1973, the Commission makes these findings and adopts this Statement of Basis and Purpose. The Commission, at a public rulemaking hearing November 14, 1983, and December 12, 1983, adopted non-substantive and editorial corrections to clarify the Commission's current regulations numbered respectively 3.1.0, 3.4.0, 3.5.0, 3.6.0, and 3.8.0. These regulations are contained in Article 3, Water Quality Standards and Classifications, of the Policies, Regulations, and Guidelines of the Water Quality Control Commission. (5CCR 1002-8).

In adopting these corrections and clarifications, the Commission considered the economic reasonableness of its action. The scientific or technological rationale of the Commission in justifying the changes to its rules was that it made the classifications and standards which it had previously assigned more technically correct and accurate.

The consolidated changes adopted by the Commission are provided with this Basis and Purpose. The Secretary of State is being provided corrected pages for each of the regulations as replacements for pages previously published in those regulations.

An issue raised during the hearing, was whether or not the table of organic parameters should be moved from the Appendix to the text. The Commission included standards for organic parameters in the regulations it adopted for each of the River Basins of the State. Thus, standards for organic parameters were applicable Statewide, prior to the hearing to consider the changes to which this Statement of Basis and Purpose is applicable. This has had the same effect as would have a basic standard applicable to all waters of the State.

There was testimony that it was confusing to have the table of organic

parameters as criteria guidance subject to change on a stream by stream basis when the parameters had been assigned and were not merely to provide guidance. It was said to be less confusing to have the table in the text of the regulation to provide basic standards.

The Larimer-Weld Regional Council of Governments testified that if the table in question were moved to the regulatory text there was the possibility of a basin standard differing from the general standard. The Commission found that its regulations enabled it to set site specific standards to stream segments as an exception to the basic standard.

The organic parameters in the table are not substances that form a naturally occurring background. They are toxics controlled at the point of sale or use. They are not ambient and subject to the same treatment as are other naturally occurring parameters. The Commission found it inappropriate to regulate these organic constituents in the same manner as are those that can be ambient or uncontrollable background parameters. Therefore, the Commission changed the guifeline table to a basic standard in the body of the regulation.

FISCAL IMPACT STATEMENT

Regarding the Adoption of Non-substantive Corrections and Clarifications for the Basic Regulations and Corrections to the Numeric Standards for the San Juan and Dolores, Gunnison and Lower Dolores, Rio Grande, and the South Platte River Basins.

In accordance with section 24-4-103(8)(d) the Commission finds that the corrections and clarifications to its current regulations numbered respectively, 3.1.0, 3.4.0, 3.5.0, 3.6.0, and 3.8.0, have no fiscal impact.

PARTIES TO PROCEEDINGS

1. Climax Molybdenum Corporation
2. Trout Unlimited
3. Colorado Municipal League
4. City of Loveland
5. Eastman Kodak Company

Mr. ROE. Our next witness is Mr. Wilson Fisher, representing the Hess & Fisher Engineers, Inc., Mining and Reclamation Council in Clearfield, Pa., accompanied by Mr. Al Whitehouse of Buffalo Coal Co. in Bayard, W. Va.

We welcome you and I guess Mr. Fisher will give his statement.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT ON BEHALF OF THE MINING AND RECLAMATION COUNCIL AND THE PENNSYLVANIA COAL MINING ASSOCIATION, WILSON FISHER, PRESIDENT, HESS & FISHER, ENGINEERS, CLEARFIELD, PA., ALFRED E. WHITEHOUSE, ENVIRONMENTAL ENGINEER, BUFFALO COAL CO., BAYARD, W. VA.

INTRODUCTION

The following statement is submitted on behalf of the Mining and Reclamation Council, whose member companies produce approximately 70 percent of the Nation's coal, and the Pennsylvania Coal Mining Association consisting of over 160 coal companies.

The coal industry has made tremendous strides in improving reclamation technology and abating previous mining problems by re-mining previously mined areas while assisting the national interest of energy independence. However, impediments to this effort are many—some of which take their origin in the Clean Water Act. The following statement, besides addressing issues of general concern with the Act, speak to some of these prohibitions.

BPT/BCT

The application of BPT control technology and standards by the mining industry has been shown to effectively control the conventional pollutants that are recognized as being part of the mining process. We feel that the requirement of BCT by July 1, 1984 would not achieve significant water quality improvements in proportion to the magnitude of the capital investment.

The technological innovations and advancements, envisioned by the Clean Water Act, have not developed as rapidly as the mining industry or government would like. As a consequence, we're utilizing the same technology today, only with refinements on the theme, that we were using at the time of the passage of the Act and before. The implications of the continuance of this level of technology and the perpetuation of it, is an issue that has not been fully debated nor addressed. The addition of alkaline materials to acid water outfalls introduces other components into the discharge stream which, from the standpoint of many, is as dilatorius to the receiving waters and indeed in many instances inharmonious with the character of the receiving waters than if the mine drainage discharge had been left untreated or treated in some more expeditent fashion. However, the compulsion of compliance with BCT by July 1, 1984 is upon us. It is the firm resolution of the mining industry that the implementation of BCT at this point in time would be inconsistent with the objectives of the Act and would present a burdensome economic yoke around the mining industry's neck at a time when the coal mining industry is confronted with the most severe market depression in over twenty-five years. The net result of such requirements would indeed result in marginal mining operations failing, producing greater unemployment in the coal fields and would not achieve sound and reasoned environmental objectives.

A modification of the deadline for compliance with BCT is appropriate. BCT, however, if implemented, must be under the constraints of cost reasonable and cost effective.

DREDGE ON FILL PERMITS

Section 404 still compels a multiple agency permit overview for dredge and fill and wetlands. Although the Corps of Engineers has the primary responsibility, the Environmental Protection Agency has strong permit overview requirements including veto power. Industry has been throttled by the maze of red tape and inherent delays when being bounced between various agencies. The Corps of Engineers has the experience, the manpower and the where-with-all to see the permitting requirements are appropriate and they can maintain an overview of the project. Other

agencies may recommend, within a set time frame, to the Corps their thoughts, feelings, concerns and suggestions relative to the permit application, but this redundancy of review and authority, which is all too characteristic of environmental law, has got to stop. Industry is being throttled by its, economics of various projects are skyrocketing and productivity is diminished as a consequence of these delays.

Wetlands, especially those in the upland areas have been perceived as sacrosanct by the enforcers of the Act. It's important to note that under various experimental and overview projects, mining can be harmonious with wetlands. Experimental programs are presently on-going to prove that wetlands can be mined and reconstructed to serve their original ecological purposes. The mining industry has the technology and the ability to accomplish this task while extracting and producing the coal reserves so necessary to maintain our energy independence.

NAVIGABLE WATERS

We recommend that the definition of navigable waters exclude intermittent and ephemeral waterways. The definition in the Act of navigable waters as "waters of the United States, including the territorial seas" is so broad that it encumbers. The mining industry has problems with the current definition; in that, the force of the Act prohibits the preparation of mining plans and control technology for mining through intermittent and ephemeral waterways. We have the technological capability and the equipment necessary to mine through these waterways and to reconstruct them so that they may serve their intended function in the post-mine stage.

EFFLUENT LIMITS

We have found that the EPA derived effluent limits for water quality have been, at times, significantly incompatible with the natural characteristics of the receiving water and that these effluent limits fail to take into consideration the water quality baseline condition. Promulgated effluent standards must be flexible so as to provide a range of limits which are sensitive to natural background conditions and protects the present use. Indeed, in some instances, the effluent limits assigned are incompatible with the tolerance levels of established aquatic life within the stream. For instance, mildly acid streams, a commonplace in Appalachia, with established aquatic biota, cannot readily stand substantial effluents of high level pH and alkalinity as mandated by the pH effluent limits. Additionally, the reduced loading of the suspended and/or settleable solids as required for erosion control from mine sites are incompatible with the natural sediment productive capacity of the premine area, and the sediment carrying capacity of the streams, which can create additional erosion downstream.

Another example of treated water discharges being disharmonious with receiving waters, is the instance in which higher level pH's are required to precipitate dissolved iron. These chemical conditions in the discharge will also precipitate the naturally occurring aluminum and manganese in the receiving water. The regulations compel increases in pH but not decreases to natural levels i.e., 5.0–5.5, as frequently occurs.

EPA is currently attempting to respond to the seasonal variability of water quality characteristics and tailoring their effluent limit criteria, in cooperation with the State regulatory agencies, to allow for minimum and maximum effluent limit controls as would be more consistent with natural hydrologic cycle variability. We support this effort. It represents an advancement in regulatory perspective that will allow greater flexibility for industry and is consistent with good evironmental control.

As an example of regulatory requirements which are not well reasoned, it is important to note that the analytical requirement for the determination and the assignment of effluent limits for iron and manganese, neither of which have been identified as possessing health related concentration levels, has been assigned to be determined by the total analytical determination method. This measure combines the concentration of that which is physically suspended and present within clay particles and other mineral components that are carried along as part of the suspended portion of the discharge, as well as, that which is chemically dissolved. It would appear that the intention should have been to establish a dissolved element determination for each of these two chemical components instead of a total determination. The dissolved element measurement would ascertain the concentration of the element which would be carried by the waters some distance; whereas, the physically dispersed or suspended part of the fraction of these elements will settle out in response to gravity over a shorter distance.

NPDES PERMITS

The NPDES permit should have a life of ten years. Performance criteria specified by the permit would not change during the life of the permit. This life span would allow industry an opportunity to plan, design and invest in complex control technology and to amortize the capital investment of that control technology.

The states that have the regulatory staff capability of reviewing site specific conditions, need the latitude of going beyond technology-based effluent limitation guidelines for the protection of natural conditions and the utility of industry. Reference should be made to the discussion on effluent limits.

ATTORNEY AND EXPERT WITNESS FEES

Section 10(3) of S. 431 deals with the awarding of fees for attorneys and expert witnesses, in instances, in which they are involved in litigation against either the actions of the regulatory agency and/or industry. There are established avenues for objection and redress from decisions made by the regulatory agencies for aggrieved parties through both administrative and judicial channels. It is imperative that the administration and our government agencies not provide limited public monies as a stimulus for obstructionism.

STREAM USE DESIGNATION

We've had considerable difficulty with State regulatory agencies efforts in establishing stream designation uses, and the subsequent water quality criteria for those designated stream uses. There have been instances in which either segments of streams or entire streams were inappropriately classified. The classification was done in the context of a "best case, what if" scenario, i.e., if all pre-law abandoned mining activity were reclaimed and consequently had no detrimental affect upon the stream, then the highes designated stream use in such a wishful perspective would be achieved.

The mining industry urges a more reasoned stream use designation which is based upon baseline, water quality determinations and historical use so as to provide a clearly defined system for permitting for the industry. Technical and economic criteria, as well as, environmental considerations can be formulated so as to be part of a mutually consistent and compatible basis for user designation.

The designated use provision proposed in Section 6 of S. 431 is not in the best interest of the mining industry or that of the states water quality programs. It precludes state flexibility in analyzing and reviewing the basis for their waterways. Additionally, it would tend to perpetuate the inappropriate classification problem cited above.

GOALS

Relative to Title I of the Act, we find that the goals expressed in Title I, specifically zero discharge of all pollutants into the navigable waters by 1985, and the second goal, albeit interim, of, where attainable, fishable, swimable water quality by July 1, 1983, are not economically viable nor necessarily philosophically compatible with the apparent language of the Act. For example, it would appear that some of the historical language states that the philosophy of the Act is to prevent destruction of the nation's water's capacity to clean itself; thereby, recognizing the fact that the water systems of the country have a natural capability of self regeneration. The goals then, appear to not compel water to be restored by industry to its original condition, but indeed to achieve a desirable level of quality. For instance, if a certain stream can fulfill a designated use, i.e., drinking, swimming, or recreation, etc.; then, the capacity of the stream available for use by industry, is capable of being determined. This fraction becomes significant, in that, the water may then contain a certain level of pollutants.

Additionally, "zero discharge" for conventional pollutants forces alternatives to discharge treatment such as: land application, deep well injection and ocean dumping, as well as, waste regeneration and recycling. Commendable as zero discharge sounds, the economics of compliance, at this point in time, are the fundamental technological limits which inhibit compliance. Advances in both measurement and control technology and, indeed, the prohibitive cost of going to the ultimate degree for new control technology appears promising but is not proven.

The mining industry supports retention of zero discharge for toxic pollutants.

FEDERAL COMMON LAW

Problem: In *City of Milwaukee* vs. *Illinois*, 451 U.S. 304 (1981) the Supreme Court held that the Congress, in enacting a comprehensive regulatory program, supervised by an expert administrative agency, precluded the ability of an individual through the application of nuisance concepts to bring a federal common law action for activity regulated under the provisions of the Act. The court specifically found that a party affected by the decision of a permit granting agency is provided ample opportunity under the Act's provisions to seek redress.

In its decision the Court stated:

"It would be quite inconsistent with this scheme if federal courts were in effect to 'write their own ticket' under the guise of federal common law after permits have already been issued and permittees have been planning and operating in reliance on them."

This decision of the Court is grounded in the fundamental principles of federalism as well as sound practical considerations. Federal authority should be exercised through statutes enacted by Congress and administered by federal agencies. The courts are not better suited than the Congress to develop national policy in areas where the Congress has enacted comprehensive legislation.

In current discussions surrounding amendments to the Clean Water Act, various groups are seeking (1) a legislative repeal of these decisions and (2) the creation of a new right of action in the Federal Courts. Adoption of such an amendment would inject an unacceptable degree of uncertainty as to federal standards of conduct and remedies and thwart the Congressional intent of providing for orderly pollution abatement and a fixed period for permits issued under the Act's NPDES system.

The legal and practical significance of this permit program would be in grave doubt, however, if a permittee could be subject to a suit in federal court not on the ground that the permittee was out of compliance with its permit, but rather that a complying discharge constitutes a common law nuisance, such undefined liability could lead to chaos. As the Supreme Court noted in *Milwaukee*, "(t)here are no fixed rules that govern; these will be equity suits in which the informed judgement of the chancellor will largely govern." Such actions would tend to render the permit process meaningless and require the courts to second-guess administrative determinations in a manner that could not have been anticipated.

In enacting the Clean Water Act, Congress set forth a comprehensive scheme requiring that dischargers meet detailed requirements including the attainment of technology-based effluent limitations and the achievement of water quality standards. The Supreme Court's decision in the *Milwaukee* case limited the authority of federal courts to develop common law in this area. The decision in effect requires the courts to defer to the permit agencies as to discharges regulated by the Act. Proposed amendments would repeal that decision and would subject those who are in full compliance with all Clean Water Act requirements to additional, undefined federal liabilities. Establishing additional remedies, as proposed, would inject chaos in the federal water pollution control program and frustrate the intent of the Act.

Recommendation: Amendments to legislatively repeal the *City of Milwaukee* vs. *Illinois* decision and create a new right of federal action should be rejected.

Mr. ROE. Please proceed.

TESTIMONY OF WILSON FISHER, HESS AND FISHER ENGINEERS, INC., CLEARFIELD, PA., AND CHAIRMAN, MRC'S WATER QUALITY SUBCOMMITTEE, ACCOMPANIED BY AL WHITEHOUSE, BUFFALO COAL CO., BAYARD, W. VA.

Mr. FISHER. Yes, sir.

Mr. ROE. You may go ahead.

Mr. FISHER. It is good to see you again, Mr. Chairman, Congressmen.

I am Wilson Fisher, as was stated, chairman of the Water Quality Subcommittee of the Mine and Reclamation Council. I'm also speaking on behalf of the Pennsylvania Coal Mining Association today, of which I'm technical committee chairman.

Mr. Whitehouse is an environmental engineer with the Buffalo Coal Co. from West Virginia and will be speaking on certain elements of our testimony today.

We would like to briefly brush over the preprepared text but we will highlight parts thereof.

Mr. Chairman, I wish to emphasize that the mining industry is very supportive of the Clean Water Act and its philosophical objectives. However, there are certain areas in which improvements can be made. Obviously, Mr. Chairman you have embraced a number of changes too.

I. It is our position to support the extension of the NPDES permit life to 10 years. As we addressed this item in the past, this extension gives us the opportunity to amortize our capital equipment costs. The extension will also provide for a more efficient permit review process.

Mr. ROE. You made the point that one good reason to extend to the 10 years is because it gives you a longer period to write off any equipment investment. That is a very important one. That is the first time it has come up.

Mr. FISHER. Yes, sir.

II. We are opposed to freezing stream use designations, sir, at any point in time. We feel that, as several other gentlemen have addressed prior to us, that user designations were done in haste. They were done without good technical justification and in many instances that we have personally encountered the designations were done without proper consideration to the use characteristics of the receiving waters.

III. We support the concept of technology based effluent standards for discharges into low flow, ephemeral and intermittent streams. We feel that the States should have the flexibility to address these cases and that discharges should not be prohibited into low flow, ephemeral and intermittent streams.

Mr. ROE. Why don't you elucidate on that a little bit. We understand what the issue is. It is OK to have a stream that is flowing for 6 months or 10 months out of the year and the other 2 months it is not.

Mr. FISHER. The prohibitions that stem from the act, limit the quality of the discharge or prohibit it entirely, even when the discharge is in compliance with the prescribed effluent limits. Let me clarify; if, for example, a receiving stream's flow may go from 1,000 gallons a minute, at one point in time, to 100 gallons per minute during a drought, the permit requirements limit the discharge into the stream to some fractional percentage—usually one-sixth—of the total flow of the receiving stream goes dry no discharge is being allowed.

Mr. ROE. Do you have to pool that material and store it?

Mr. FISHER. We have to pool it, shut down our mining operations, or divert it to other receiving streams, by pumping through multistage pumps to another watershed, which may have a larger flow or a perennial stream flow.

The logic being used by the regulatory agencies is: They do not want to risk exceeding the assimulative capacity of that receiving stream when technology based effluent limits are permitted for the discharge.

Mr. ROE. But if you could be discharging to that stream during a particular period, it could be of a quality that could not necessarily hurt it.

Mr. FISHER. Precisely, sir. That is the point.

IV. We would like to see the BAT deadline period extended to 3 years from the effective date of the BAT regulations for the industrial classification.

V. We would also like to see the Corps of Engineers assigned exclusive regulatory responsibility for section 404 of the program. The confusion and redundancy inherent with multiagency reviews is sufficient basis to streamline this area. By giving exclusive permit review and regulatory authority to the corps, we feel there would be a more efficient, more effective program element.

VI. We feel the Clean Water Act is not the appropriate vehicle for regulation of upland wetlands. There has been, we understand, pending legislation to address that particular type of wetland. We are currently attempting to participate in that process.

VII. We oppose legislative repeal or efforts to legislatively repeal the decision of the U.S. Court in the case of *Milwaukee* v. *Illinois*. We feel the administrative process should not be circumvented.

VIII. We would like to recommend the exclusion of upland wetlands, intermittant streams and ephemeral streams from the definition of navigable waterways.

IX. We embrace philosophically the goals of zero discharge and fishable, swimmable objectives. However, in the context of reality, cost effectiveness and the historical basis upon which the rest of the act was developed, we feel that absolute adherence of zero discharge and fishable/swimmable objectives as a must by regulatory agencies is thwarting the growth of industry and inhibiting job development.

X. We are also, sir, opposed to legal fees except for prevailing or substantially prevailing parties. We have encountered increasing instances of obstructionism in the permitting process. Legal obstructionism encouraged by tax paid fees in instances in which the fee is justified by the mere change of any part of the permit no matter how minor, is inconceivable, yet an increasing reality for industry.

Now, sir, I would like to talk about a particular area of concern and interest to both the Mining Reclamation Council, the Pennsylvania Coal Mining Association and myself for some number of years. It is an issue dealing with the vast scope and extent of the abandoned mined lands that we have in our coal producing areas.

In Pennsylvania, we have approximately 250,000 acres of abandoned mine lands. The State of West Virginia has over 100,000 acres. Nationally we have well in excess of 1 million acres of abandoned mine lands that have not achieved the degree of reclamation success that is presently required by the Federal Surface Mining and Reclamation Act, as well as, the State regulatory agencies' regulations.

Note that these abandoned mine lands were partially reclaimed or were not reclaimed in compliance with the existing laws or lack thereof.

Most of these lands contain additional coal reserve that can be mined at a profit but many of these sites have preexisting mine discharges due to earlier mining activities. Indeed earlier regulation encouraged discharges for safety reasons. Remining these sites

now becomes prohibitive as a result of the assignment of permanent water treatment liability to the current mining operation.

As an illustration of the negative impact of these statutory-regulatory requirements I would like to refer back to my State of Pennsylvania again. In 1966, we had approximately 3,200 miles of streams that were affected by acid mine drainage to the extent that they were nonfishable. In 1978 that number had been reduced to approximately 2,300 miles. This improvement was achieved by virtue of a cooperative effort between the regulatory agency in our State and the coal industry.

The prohibitive element appears to stem from the as we see it, regulations written by EPA as compelled by the Clean Water Act.

The legal interpretation of these regulations has been passed by EPA to the Federal Office of Surface Mining and from them to the State regulatory agencies. This prohibition assigns a permanent water treatment liability—to effluent limits—to the current mining operating company for all preexisting discharges encountered when remining a previously mined area. As ironic as this is, and as improper as it appears, this is indeed a fact of reality that we are dealing with now.

Time is running out in certain mining areas. In my home county of Clearfield in Pennsylvania, we have 20,000 to 30,000 acres of abandoned mine lands. The vast majority of these lands could be remined, recontoured, revegetated—to current standards—at no cost to the taxpayer, and the discharges of acid mine drainage minimized. But our nonpreviously mined coal reserve is dwindling. Our remaining mining industry will probably be comparatively small by the turn of the century. Consequently, the capital equipment, skilled manpower and management resources necessary to accomplish this task will be gone from the area. If any reclamation is to be done at all at that time, it will be at the expense of the taxpayer. We would not like to see that tax expenditure come about.

We respectfully recommend, although we have not drafted specific language, amendment of the act as the means of overcoming this obstacle.

At this point, sir, I would like to defer to my colleague, Mr. Whitehouse, to comment upon effluent limits and some research that he is doing.

Mr. ROE. Mr. Whitehouse.

Mr. WHITEHOUSE. Thank you very much.

Today I would really like to describe some field situations that we face on a daily basis.

One, to reemphasize, is the problem with the stream use designation. The States that I deal with, West Virginia and Maryland, took the approach that would assign the highest use and then put the burden on the applicant for a permit to show that in fact the use was unattainable, and at that time, the State would reconsider the classification and allow different effluent limitation suitable to the new classification.

Now, I don't feel that this is necessarily a bad way to approach stream designation unless there is a move to put on a freeze as of some date. We have then created an artificial situation which the State who applied the origional standard never envisioned would

happen. The States were looking for someone else to pay for the necessary field research to determine what the quality of the stream was.

So if it is, in fact, your intention to include some type of a freeze, which we are against in its own right, we would certainly urge you to allow some additional time and appropiate some money to the States to allow them to do the necessary biological research to test for fisheries and to determine whether or not fisheries ever did exist and properly classify each stream.

This brings me to my second point, which concerns the effluent limit for pH. The streams in Appalachia are naturally acidic and the water there is much like it is in the pine Barrens, a tea-colored humic acid water. The pH generally ranges from 4 to 6 and rarely is a stream between 6 and 9.

The State flower of West Virginia, the rhododendron is a plant which requires on acidic environment.

Mr. ROE. You are speaking in its natural state?

Mr. WHITEHOUSE. Yes, sir, absolutely unaffected from any mine.

The industry has amassed a vast collection of stream baseline data for permitting so this is becoming a pretty good base of before-mining data and it supports the very low pH. Now, we are not talking about streams that are polluted. We are talking about streams that just have a low pH.

One instance which disturbs me, but it has certainly been useful in proving the point, is a mining operation we have upstream of a headwater wetland which happens to be a bog. A bog is typically very acidic and thrives in sub-5 pH conditions. Our effluent, which ranged between 6 to 9 pH was discharged through a manmade channel which did not exist prior to mining, into the natural drainway which went through the bog. This dischange, in fact, killed a fair portion of the bog. The plants were just not able to tolerate these high levels of pH.

So now we are looking at this situation and trying to figure out what is happening floristically in the bog. We are finding a completely new set of species which are tolerant of alkaline conditions beginning to repopulate this area that was once populated by species very tolerant of acid.

So what we have is one element of the Clean Water Act, in fact, doing damage to a wetland, an ecosystem of concern to another element of the Clean Water Act.

I would like to add one other note of what I feel is some good news. I am involved with some friends at West Virginia University in some research on the ability of a bog to treat acid mine drainage. We have approximately 4 years of data and it is very, very promising. So we have a natural system to clean up a problem which certainly has plagued the mining industry since its inception.

I won't testify that this will be a universal cure and, in fact, work in all cases, but it does work in some applications. But we never will be able to meet the pH effluent limits as they currently exist.

Mr. ROE. In the regulations?

Mr. WHITEHOUSE. Yes, sir. What we would like to suggest is that the committee recommend to EPA that it reevaluate its position on

pH and allow these acidic systems to be maintained in their natural condition and not require the mining industry to treat natural ground water, which in many cases we treat. When we excavate a pond for sediment control, it fills up with spring water or ground water and ultimately discharges. The pH hovers in the neighborhood of five, so we are one point below effluent limit. We are then required to add a chemical treatment which is often counter-productive and in some instances, we actually kill a natural ecosystem.

So we would certainly urge that you recommend to EPA that they reconsider.

Also, I would like to support the provision to exclude storm water runoff from the effluent limitations precisely for the same reason. Many of the surface mining operations find it necessary to dig a diversion ditch around the upper limits of the permit area in order to keep water above you in the drainage from passing through the sediment structures. This eliminates contamination and treatment of the unnecessary water flows.

So we would certainly urge you to consider that in addition to the legislation.

I thank you, sir.

Mr. ROE. Are there any questions from the gentlemen?

Mr. CLINGER. Mr. Chairman, first of all, I would like to welcome Mr. Fisher, who happens to be a constituent of mine.

I am delighted to have you back before the committee, Mr. Fisher, and also Mr. Whitehouse. I think your testimony has been very helpful to the committee.

Just a couple of questions. We had a number of witnesses testify this morning about the problems that would arise with freezing the use designation. But again, I think it would be extremely helpful if we could have some specific examples of why that would be or specific examples of streams or water uses where that would be a problem of wrong designations, for example.

I think one of you suggested many designations were made at the highest use, which really are unrealistic. Therefore, to freeze those in place at this point would be counterproductive. One example was in Puerto Rico where all streams are designated as drinking water use, which is just unrealistic.

So it would be very helpful if we had some examples, specific examples of why that would not be a good idea to freeze the use designation at this point.

Mr. FISHER. We would be more than pleased to provide some documentation on that, sir.

In fact, let me add that I am currently dealing with a permitting problem that addresses that singular issue. The permit has fulfilled all of the technical details necessary for issuance after an exhaustive review by our regulatory authority for mining, except for the problem that, the receiving stream is designated high quality. Unfortunately, the water quality characteristics of that particular stream are anything but high quality. It had been previously deteriorated by prelaw mining operations. Yet, we are at an impasse as a result of the inposed multiagency review process within our State system. I am confident that we will prevail. Logic would have us prevail. But the time element has pushed the permit application

well into its second year. Unfortunately, these unreasonable delays have resulted in layoffs in the mining company.

Mr. CLINGER. Mr. Fisher, you also alluded to the problem of the abandoned mine situation and the problems that you are encountering. I am certainly familiar with the problems of Clearfield County.

We have a lot of serious situations that really do need to be addressed. What can we do in this legislation to alleviate that problem?

You did address it, but could you give us some specific guidance of how we can alleviate that?

Mr. FISHER. It is my personal opinion and that of the committees that I represent, that the appropriate vehicle is indeed, an amendment to the act with language which specifically addresses the obstacles to remining abandoned mine areas. I would also seek the committees thoughts in this regard.

Mr. CLINGER. And those specific obstacles, could you enumerate?

Mr. FISHER. The issue of permanent water treatment liability for preexisting mine discharges which become assigned to mine operators when they remine an area.

Mr. CLINGER. Where you go in to an area that has been mined and you are remining it and you are willing to assume the responsibility for reclaiming that whole area by conclusion of the mining operation.

The problem is that you are held with a very high degree of discharges?

Mr. FISHER. Yes, sir. In fact, legal staff within our State regulatory agency and within the EPA have apparently concluded that the liability continues into perpetuity for the present day mine operator for that preexisting discharge.

Mr. CLINGER. So that is a tremendous disincentive for any mine operator to go into an abandoned site?

Mr. FISHER. Precisely.

Mr. WHITEHOUSE. Sir, if I could add one other item. It seems that when Federal funds are used to reclaim an abandoned mine under the OSM abandoned mine lands program that liability is not assessed. So if, in fact, reclamation is not 100 percent successful in restoring water quality to effluent limits, the water treatment liability is not assessed to the person who does the work because it was a Federal project to reclaim the site on a contractual basis. What we are saying is, we will not go in and only reclaim. We would actually remine and take additional reserves. This oftentimes will limit the effluent in quantity further than by only backfilling.

We are certainly extremely hesitant to risk accepting water quality liabilities where we will be saddled with treatment for life.

Mr. FISHER. The legal trigger mechanism seems to be the distinction between remining, in which coal is extracted, versus reclamation in which only reclamation is done.

Mr. CLINGER. The question I would have and you might want to provide this for the record, as far as we know there is nothing in the Clean Water Act that would impose that kind of liability and I am wondering if it comes through the Mining Reclamation Act or

some other legislation that this is imposed, the Superfund perhaps or where is the hook for this liability?

Mr. WHITEHOUSE. Under the Surface Mine Act we are required to embrace a mining operation with complete perimeter control and those generally are ditches and they collect any water which comes from the job or rains onto the job and then that is conveyed to a sediment pond or ponds and then that discharge is your point source at which you then meet effluent limitations.

In the act of remining, it is almost a certainty that the effluent or the water coming from the job is going to be intercepted and now you have it in your pond and that is where you get stuck.

Mr. PACKARD. Would the gentleman yield for a moment on that?

Who now has the responsibility and liability on abandoned mines that are not reclaimed?

Mr. WHITEHOUSE. No one.

Mr. ROE. If a mine is abandoned, obviously the title of the land has to remain someplace. Does it still repose in the original owners or does it revert to the State?

Mr. WHITEHOUSE. Well, no. The property owner oftentimes does not lose title to his land. In the case of my company we own very little land and we generally lease land.

So the owner of the land still retains his title. We are talking about abandoned preact, and pre a lot of things.

Mr. PACKARD. But if a company comes in and concludes the mining operation is no longer profitable and they abandon the activity, it would appear that there could be some legal recourse for the property owner to be left saddled with a major pollution problem or quality problem.

Mr. FISHER. You have a good point there, sir. If this were to occur today, the mining operator has the responsibility and the liability. There is no ifs, ands or buts about that.

We are talking about prelaw mining. There were no grandfathering provisions for the assignment of liability when present mining law was enacted. As a consequence, there is and has been no effort to assign liability for these old, preexisting discharges.

Mr. PACKARD. And if I understand your answer to Mr. Clinger on reinstituting mining operations or suggesting that the new operator does not inherit the water quality problems of the previous operator or the landowner?

Mr. FISHER. Precisely, sir.

Mr. RAHALL. Will the gentleman yield?

If I am correct, a great deal of that responsibility falls under the Surface Control and Reclamation Mining Act of 1977, does it not?

Mr. WHITEHOUSE. The water quality standards are directly fixed to the Clean Water Act.

Mr. RAHALL. I know that we have had oversight hearings on the 1977 surface mining law, the responsibility that is imposed upon an operator that comes in and mines what remaining coal there is on an abandoned site, and the responsibility he incurs have been a major point of consideration in what changes we might make.

Mr. CLINGER. That is part of the Surface Mining Act because under the Clean Water Act your responsibility is limited by the extent of your permit. As long as we are operating under the permit, we have certain responsibilities and liabilities, but once the

permit is expired they will go on into perpetuity under the Clean Water Act?

Mr. FISHER. That is right.

Mr. CLINGER. Well, gentlemen, I thank you both. It is good to see you, Professor. I appreciate your testimony.

Mr. ROE. Are there any further questions?

Mr. MOODY. I particularly appreciate your reference to Milwaukee. That is very important although these attempts that you cite to legislatively roll that back would not probably affect us.

I think we have had a problem. The last thing we need is the open sesame system where anybody can take anybody to court irrespective of the Clean Water Act processes that are very specifically laid down.

This is a very important part of our testimony. From our experience we have learned what you say is true in spades.

Mr. FISHER. That is true and we hope the members of the committee would share our fear.

Mr. ROE. If you are suggesting language, would you give us your thoughts?

Mr. MOODY. You are just resisting the amendment?

The judge in the Supreme Court has held that the law was thorough and complete in this area and that we did not want to throw it open to common law nuisance suits, so we throw the whole ball game up in the air again and you would urge that we resist amendments to open that up.

Mr. FISHER. Yes, sir.

Mr. WHITEHOUSE. We looked at a permit as some bit of protection. We hoped the system would protect us as long as we meet the requirements. If you opened it up, the permit is no longer protection. You have no protection at all against some truly outrageous suits.

Mr. ROE. Any further questions?

Mr. RAHALL. Yes. I know you have discussed the freeze on stream designations in your testimony and also in response to the gentleman from Pennsylvania's question and you are relating to us the impact that would have and it has been very interesting.

You also said that if such a stream freeze designation is enacted as called for in our distinguished chairman's bill, which I am glad that he is here at this time, you said that additional time and money would be needed.

Would you elaborate on that and what additional time you are talking about and what additional money?

Mr. WHITEHOUSE. Yes, sir. In the State of West Virginia and the State of Maryland, and I am sure other States, very little has been done in the headwater areas of streams which is where most of our mining operations take place.

Before you could classify a stream as a class 3 trout water, for example, which gets pretty high use, you should have to, in fact, make a biological check with the stream to make sure that the trout, in fact, exist and that the necessary life support organisms are there.

West Virginia, unfortunately, has a very low number of streams which are actually natural trout fisheries. This is partly based on the generally acidic nature of the waters. The streams will support

a stocked trout and they will survive for a season or so but in water with very low pH, they are unable to breed and reproduce. So it would be extremely unfair to consider these as natural trout waters when, in fact, they are now and never were due to the suppressed pH.

I think for Mr. Clinger's benefit an example is that West Virginia has done a little more work in the north branch of the Potomac area than they have in Maryland, and the feeder stream to the north branch of the Potomac on the Maryland side are all class 3 trout waters.

The West Virginia side where actual work has been done in some streams almost none are class 3 natural trout waters and I certainly contend the only difference between one side of the river and the other is the State boundary.

The habitats and ecosystems are identical. So this is the problem and I am sure the States don't have sufficient funding and manpower in their own resources to do the job in the amount of time that I am sure you folks would like the job done in.

Mr. FISHER. I think that speaks to the heart of the problem that the State agencies deal with. They have fairly limited modeling techniques based upon very few and limited point evaluations, that do not give them the full handle on the total characteristics of those streams over their entire length.

The problem then occurs when the regulatory agencies perceive the designation as rigid. This rigidity tremendously inhibits our industrial efforts.

Mr. RAHALL. Thank you, Mr. Chairman.

Mr. ROE. Fine. Thank you. No further questions.

Thank you very much for being here and thank you for your testimony.

Our next witness is Mr. John Hart, accompanied by Mr. Nick Ciccarello, Jr., executive director of the West Virginia Utility Contractors Association. You are representing the West Virginia Utility Contractors Association and the West Virginia Society of Professional Engineers.

We offer you an official welcome from Mr. Rahall from West Virginia.

Mr. RAHALL. I thank the gentleman for yielding to me to present to the subcommittee this morning the West Virginia Utility Contractors Association and the West Virginia Society of Professional Engineers. It is indeed an honor to have these two groups present their views to the Congress today on the Clean Water Act and, in particular, the construction grants program.

Mr. Chairman, as you realize, back in 1981, when Congress reauthorized the construction grants program, we had to make some drastic changes in order to obtain the President's signature. Two of those changes, the reduction in the Federal share for each sewer project and the almost total removal of grant eligibility for collector lines, will make it very difficult for many of our communities to achieve the goals that we outlined in the Clean Water Act.

Our State has very severe unemployment problems. We have led the Nation in unemployment for many months now and it is doubtful that West Virginia's economy will completely rebound in the very near future.

These economic problems have brought about a dramatic drain of resources available at the local level for sewer projects.

Here today to share with our subcommittee the problems that West Virginia will face as a result of those changes in the construction program are Mr. Nick Ciccarello, executive director of the West Virginia Utility Contractors Association, and Mr. John Hart, member of the West Virginia Society of Professional Engineers.

I have worked closely with these individuals during my tenure in the Congress. They represent very fine organizations and they have provided West Virginians with not only proper sewage treatment facilities but with employment that we so drastically seek more of in today's economic climate.

I am very honored to present them to the subcommittee.

Mr. ROE. Very fine.

TESTIMONY OF JOHN R. HART, MEMBER, WEST VIRGINIA UTILITY CONTRACTORS ASSOCIATION AND WEST VIRGINIA SOCIETY OF PROFESSIONAL ENGINEERS, ACCOMPANIED BY NICK CICCARELLO, JR., EXECUTIVE DIRECTOR, WEST VIRGINIA UTILITY CONTRACTORS ASSOCIATION

Mr. HART. Thank you, Congressman.

Mr. Chairman, members of the committee, I am John Hart, a professional engineer and president of BCM/Milam Engineering Co., in Charleston. This is Nick Ciccarello, who is executive director of our association.

It is with a sense of serious concern that we appear before this committee representing the West Virginia Society of Professional Engineers and the West Virginia Utility Contractors Association. Our members in both organizations have worked on all phases of the EPA construction grants program and have first-hand experience on how the program is functioning.

Public Law 92-500 is of immediate concern not only to our members and the thousands of workers they employ, but also to 62 percent of the West Virginia population currently not serviced by sanitary sewers and clean water.

I would like to direct our concern to recent congressional policies that reduces EPA funding from 75 to 55 percent and the deletion of collection systems in their entirety. Collection sewers are an integral part of any treatment facility and as such should not be separated.

By eliminating collector sewer funding and reducing other sewer funding, it will only lead to trouble. Public Law 92-500 has proven to be, for the most part, a cost effective, environmentally sound and, economically achievable solution to our wastewater problem. Without collector sewers, the program would become an administrative nightmare and the clean water effort in West Virginia would suffer a severe setback.

State officials have indicated that such a policy would certainly lead to municipal funding problems and 98 percent of all the treatment projects planned in West Virginia would never reach completion. In short, gentlemen, we would drown in our own sewage.

Three issues are of particular concern: One, environmental and health problems which would arise; two, noncost-effective solutions

which would be promoted; three, the economic burden which would be placed on municipalities.

Elimination of collector systems from Federal funding eligibility would result in environmental problems. In West Virginia, many ground water problems have been caused by septic tank contamination. In several areas of West Virginia, septic tank contamination has closed down a series of public water supply wells due to high fecal coliform levels.

Survey after survey indicates that small communities, if faced with the choice between building a complete collector sewer treatment plant system and their current septic tank system, would choose to remain with the more inexpensive septic tank alternative.

Another groundwater contamination problem is caused by leaking, old collection sewer lines. Rehabilitation of these lines not only lowers the infiltration/inflow of wastewater, but also lowers the corresponding pollutant loadings on the treatment facility. Elimination of this type of Federal funding would be a great mistake.

In many municipalities in West Virginia, the infiltration inflow problem is so great that a cost-effective solution to the treatment needs of the community is impossible without first rehabilitating these lines.

Surface water problems can also continue to occur as a result of using collector sewer treatment plant alternatives. Package plants have been an alternative in many communities. In West Virginia, more than 2,000 such package units exist. These small plants have a history of poor maintenance, operation, and location.

The clean water effort by the EPA construction grants program in West Virginia has been slowed down due to municipal funding problems. Although communities need to contribute only 25 percent of eligible project costs, their small size makes funding hard to come by. In Shady Springs, W. Va., a wastewater project was delayed for 124 months while waiting for the local share.

If collector sewers are not funded and if the Federal share of treatment is reduced to 55 percent, the local share of a project in West Virginia will be approximately 85 to 90 percent of the project cost, while the Federal share would decrease to approximately 10 to 15 percent.

Over 98 percent of the projects in the State would be dropped for municipal funding problems alone. If local governments have difficulty in funding projects now, they surely will find it close to impossible to fund almost four times as much money.

For the 220 municipalities in the State which have collection treatment systems, what you gentlemen decide will have no bearing. However, the other 98 municipalities, some 56 percent of the State population, will be forced to remain on environmentally unsound solutions such as septic tanks, holding tanks, and our rivers and streams.

In conclusion, the construction grants program has taken years to get on track. Regulations and guidance memos have been promulgated and refined to incorporate solutions to problems that have arisen from past experience.

The priority system of arranging projects is a good one with checks and balances between the regional EPA and State levels.

The States draft a priority list based upon an intimate knowledge of the State's water and sewer problems.

Should this system or funding levels be changed, administrative problems would surely occur. West Virginia officials, which administer the program, have stated that 98 percent of the projects would be dropped if funding is reduced and collectors are eliminated, making the clean water program in West Virginia an administrative nightmare. It would take the program years to get back on track to a point where it is today.

Should we change collector sewer funding eligibility, problems would be created. We would allow the current unacceptable wastewater solution of septic tanks, holding tanks, and the continued pollution of our rivers and streams. The many ground water as well as surface water contamination problems that we are now experiencing in West Virginia will continue.

The West Virginia Society of Professional Engineers and the West Virginia Utility Contractors Association urge Congress to, No. 1, reinstate collector sewers for eligible project funding and to continue funding of all projects at the 75-percent level.

Further, we would support a tax of 5 cents per gallon on all manufactured water to insure the local share. This would give West Virginia an income of approximately $44 million per year which could be used as matching money for both water and sewer.

It appears that the drafters of the new congressional policies for funding of wastewater treatment are not familiar with the alternatives faced by our communities who must make the final decision on wastewater disposal. Congress should be wary of endorsing changes that have not proven to be compatible with the American lifestyle.

Mr. Chairman and members of the committee, may I say to you how much we appreciate the opportunity of appearing today before your committee and would be happy to answer any questions.

Mr. ROE. This committee on the House side has fought since 1972 on just the issue that you speak to, but the other body is the one that has forced the issue. We are going to try it again. At least that is my intention, and I think the committee will support that.

Let me ask a different question. We had the National Society of Professional Engineers testify here and I was kind of shocked at their point of view because they said they did not think that we should be having any grant program at all. They would prefer to see if any other program was substituted, they would prefer to see a 100-percent loan program and a 5- to 6-percent interest rate. It took us about a half hour to get that point out.

They were talking about eliminating the matching program entirely, which seemed to be their first thrust, and then came back that they were talking about 100 percent funding for a loan effort. We are trying to figure ways to get that done, too, and try to establish the priorities.

You probably listened to NAM testify this morning. I don't know how people expect to get this job done unless we get back to the issues involved.

I don't want to take up the time, but the same way with combined sewers. The collector systems and the combined sewers were

part of the original act of 1972. It was very sound and valid engineering, and technical, and practical.

The other body has stricken both of those issues as we have gone along. We have not been able to prevail, unfortunately.

So I think you are right on target, as far as I am concerned. I know this committee feels the same way.

Now, how we can prevail, I don't know. But you do have two Senators and that could be helpful. I know that Nick Rahall has been a champion of the whole program from the very beginning, but we have not been able to get enough votes on the Senate side.

So we sustain and support your objectives and we will try again.

Mr. HART. Thank you very much, sir.

Mr. ROE. Any other questions?

Mr. RAHALL. Mr. Chairman, I certainly want to thank you for those comments and add to them that you have certainly been a friend in this regard and have been a strong fighter for what we have been trying to do with the construction grant program.

I have a question for John or Nick. Besides what you have recommended in your testimony, the inclusion of collector systems and the need for additional funding, are there any other changes that might be possible that we could make in addition to that, perhaps expediting the time that it takes to follow through on one of these projects?

Mr. HART. Yes, sir. Congressman, I think the delegation to the States is the only way. I think what we would say is if we maintain the status quo and improve on what we have, rather than change, is what we are really looking for here. The system is working now the way it is.

Mr. RAHALL. You feel streamlining the process is being undertaken now?

Mr. HART. Yes, it is. For example, West Virginia just received allocation to handle EPA problems and this was signed by our Governor last Tuesday. So we feel things are working.

Mr. RAHALL. Now, I am interested in one comment you made about the imposition of a 5-cent-a-gallon charge on manufactured water. I wonder if you might explain this a bit more and why in today's economic climate we should be asked to impose an additional tax.

Mr. HART. Well, I look at the highway trust fund tax. We put tax on gasoline and it was set aside basically for the particular problem over on the highway side. In West Virginia, we have extreme problems on local share on 25 percent, if there could be some kind of tax on manufactured water.

I live down in Charleston and I had my water system and it would be set aside in a trust fund to help provide local shares to the communities down in Monroe County and those places which can't raise that local share, perhaps a revolving fund.

We don't have all the answers on it, but at least there would be something set aside. You would raise a tremendous amount of money.

Mr. RAHALL. Let me turn to collector lines, if I could. What percentage of the total project cost is the collector line in a typical sewer project?

Mr. HART. On my projects they are running 75 to 80 percent, which we get back to this 10-percent situation of Federal funding if we eliminate it.

Mr. RAHALL. Thank you.

Thank you, Mr. Chairman.

Mr. ROE. I think it would be helpful for you to make contact with John Hart, particularly because you represent the West Virginia side of the question. I think you ought to get in touch particularly with the national society to see if we can get the act together, because I think it would be extremely important for you to express to them what you have expressed here.

Because I think you have hit the target right on the head, that if it is down to 55 percent now and we know that collector systems are limited, but I think the point you are making is that 75 percent on the average is your collector systems and you prorate that against the 55 percent you are not getting in Federal grant to install the system you are speaking to.

I am not sure but I think the representative was from a national group and I think that would be well worthwhile. In fact, I wonder if the national society has run any figures in each one of the respective States on that issue.

Mr. HART. I don't know. We will certainly contact them, Congressman.

Mr. ROE. Okay. I have no further questions.

Thank you very much for being here. Thank you for your patience. We will look into the matter further and see what we can do to prevail.

I have a statement from Congressman McEwen to place in the record at this point.

[The statement of Mr. McEwen follows:]

STATEMENT OF HON. BOB MCEWEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Mr. Chairman, I would like to thank all those individuals who have shared their insights and offered their recommendations before this Subcommittee on possible amendments to the Federal Water Pollution Control Act. It will be through the efforts of these concerned citizens that we will be able to make the law more effective in improving the quality of our Nation's waters. The testimony will undoubtedly prove helpful to the Subcommittee when it tries to fine tune the Clean Water Act by addressing the issues of toxic discharge, state water quality standards, the construction grant program, the dredge and fill permit program, and various other concerns. While we have made good progress in cleaning up our rivers, lakes and streams, it is the responsibility of Congress to ensure that clean water standards are maintained and strengthened for the benefit of future generations.

Mr. ROE. The subcommittee will recess until the next hearing date, which is starting November 1.

Thank you very much again.

[Whereupon, at 12:50 p.m., the subcommittee recessed, to reconvene on Tuesday, November 1, 1983.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

TUESDAY, NOVEMBER 1, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:07 a.m., in room 2167, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen.

This morning the Subcommittee on Water Resources begins the last 3 weeks of hearings on possible amendments to the Federal Water Pollution Control Act. During this period we will receive testimony on a number of important issues. During the first 2 weeks the testimony will cover the pretreatment program, section 404, water quality standards and other issues. On November 15, witnesses will include representatives of State and local governments and Hon. William D. Ruckelshaus, Administrator of the Environmental Protection Agency. The subcommittee has set aside November 16 to receive testimony on the very important subject of pollution from nonpoint sources. And we are going to be devoting quite some attention to that most important issue. The hearings will conclude on November 17 with a briefing on the Environmental Protection Agency's Chesapeake Bay study and the water quality monitoring and data collection program of the U.S. Geological Survey.

The information presented at these forthcoming hearings together with that received during prior hearings will provide the subcommittee with a truly comprehensive record on the present functioning of the water pollution control program, suggested changes, and water quality problems which still confront the Nation.

Our first witness today is Mr. John King of the National Solid Wastes Management Association. Before we hear from Mr. King, I yield to my distinguished colleague from the State of Oregon, Hon. Robert F. Smith.

Mr. SMITH. Thank you, Mr. Chairman.

I just want to add my thoughts, and thank the witnesses for being here today to assist us in coming up with the finest effort for a National Clean Water Act that we can find, and thank you for taking the time and effort to be here with us. We look forward to your testimony.

Thank you, Mr. Chairman.

Mr. ROE. I thank the gentleman from Oregon.

Now, we have Mr. John King, and if you would identify Ms. Shulman, who is your associate, director of the regulatory affairs of the Tricil Environment Services, Dayton, Ohio; is that correct?

Mr. KING. That is correct.

Mr. ROE. The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

PREPARED STATEMENT OF PHILLIP H. WATSON, PRESIDENT, TRICIL ENVIRONMENT SERVICES, ON BEHALF OF THE INSTITUTE OF CHEMICAL WASTE MANAGEMENT

The Institute of Chemical Waste Management (ICWM) of the National Solid Wastes Management Association (NSWMA) is pleased to have the opportunity of these hearings before the Subcommittee to present its grave concerns that inadequacies in the present regulation of toxic discharges into the nations sewers represents an unreasonable threat to the human health and the environment. Moreover, legislation which will soon be considered on the House floor virtually invites a class of potentially dangerous contaminants to be discharged into sewers by denying the disposal alternatives in current use.

Without swift action by the Congress, particularly in light of the expected enactment of amendments to the Resource Conservation and Recovery Act, discharges of dangerous toxic wastes into sewer systems will increase significantly by 1985. We urge adoption of an amendment to the Clean Water Act closing off this loophole for the presently unregulated discharge of chemical waste.

Enormous strides have been made in this country over the past fifteen years in terms of both awareness and control of environmental contaminants. With enactment of the Clean Air Act in 1970 and the Clean Water Act in 1972, Congress took significant strides towards protecting those media from environmental contamination. Four years later, Congress enacted the Resource Conservation and Recovery Act of 1976 establishing a federal program to control pollution of the land,

the so-called "last sink." By now, we clearly recognize the principle that industrial generators of pollution can shift their discharges from media to media, from air to water to land. In RCRA, the Congress envisioned not only protection of the land but an even-handed tightening down of controls that would prevent one media from becoming the "dumping ground" for pollutants whose discharge was regulated into another media.

Coordination of the various federal environmental statutes has proved a difficult, but essential task. Much of the substantive improvement to the water, air and hazardous waste programs since their initial enactment has been aimed at closing loopholes and improving the interface between these programs.

Member companies of the Institute of Chemical Waste Management operate commercial hazardous waste treatment and disposal facilities, which are subject to all environmental regulations. As such, we are not only entirely familiar with the types of waste streams being produced by hazardous waste generating industries, but we, the EPA, the Congress and the general public are becoming more and more aware of exactly where those hazardous wastes are being directed. Recently, the EPA announced that on-site waste generators are currently treating and disposing of four times as much waste as had been previously calculated. In addition, millions of tons of hazardous waste go unregulated, through the so-called "small quantity generator" exemption from the regulation, from the unregulated combustion of hazardous waste in utility and industrial boilers and through

discharge into Publicly Owned Treatment Works (POTWs). Earlier this year Office of Technology Assessment calculated that 5 million tons of hazardous waste were being discharged into domestic sewers in 1981. It is this problem which we call to your attention and commend for your remedial action.

The EPA has excused from federal regulation those who discharge hazardous waste into public treatment works on the logical assumption that discharge of these toxic materials would be subject to pretreatment standards to protect the integrity of the POTWs receiving them. Unfortunately, little such protection exists today. EPA's tardy promulgation of the categorical pretreatment regulations led to a 1976 court-ordered schedule to produce pretreatment standards for 21 generating industries. In the seven years since the court order, EPA has issued only one as final, for the electroplating industry. EPA's exemption of toxic metal discharges for this industry is just now starting to close. Twenty other industries continue to enjoy exemption from RCRA and no federal controls on toxic discharges under the Clean Water Act. Clearly, the existing provisions represent neither a sizable nor comprehensive system of protection for POTWs, or their receiving waters.

POTWs are not generally designed to handle all toxic wastes generated by industry, particularly heavy metals. While many systems are fully adequate to handle conventional pollutants (although this subcommittee well recognizes that many systems are not even adequate to this purpose) the challenge of detoxifying chemical waste can be utterly

beyond the management experience and, often technical capacity of these facilities. Thirty-five percent of the 15,000 POTWs are passing toxics to surface waters in violation of NPDES permits and water quality standards. After all, these facilities were not built to treat hazardous wastes, but to handle domestic sewage. To us it seems highly unlikely that misuse of the nation's POTWs as chemical waste treatment plants would be a cost effective solution to managing industrial wastes in this country.

As if the present discharge of five million tons of toxic chemical wastes into the nation's sewers is not threat enough to compel Congress to act, the House will soon consider H.R.2867 which could mandate the prohibition of land disposal of a series of hazardous wastes within twelve months of enactment. These wastes include those with certain concentrations of cyanides, arsenic, cadmium, chromium, lead, mercury, nickel, selenium, thallium, highly acidic wastes, polychlorinated biphenyls or halogenated compounds. The authors of H.R.2867 feel that these wastes are so dangerous that Congress should not even conduct a rulemaking before prohibiting their land disposal. Whether or not one accepts the validity of this presumption, the implications of the enactment of such a provision can be clearly understood: these wastes must go somewhere else.

Authors of H.R.2867 hope that these wastes will go to hazardous waste treatment and disposal facilities such as those operated by our member companies. We fear another fate is far more likely: these waste will simply be discharged into POTW systems which will be unprotected from

their effects by any pretreatment standards. Since the discharge is entirely legal under our federal hazardous waste laws and in the absence of pretreatment standards which prevent such discharges under our water pollution laws, we would predict that by early 1985 significant quantities of these identified "high risk" chemical wastes will be recorded in the nation's POTWs, including the 4,500 POTWs already in violation of their permits.

We should not allow this to happen. Concurrent with the Congressional restrictions on the land disposal of these wastes should be elimination of the blanket RCRA exemption for the discharge of these chemicals into POTWs. Rather than simply proceed on an industry-by-industry basis to develop pretreatment standards, EPA should be directed to develop standards within the next twelve months which regulate the discharge of these particular toxic waste streams to POTWs, and allow exemptions for the 21 industries only to the extent POTWs can actually demonstrate toxics mitigation. If the technology of a POTW is incapable of successfully treating any of these wastes, its discharge into a POTW should be eliminated entirely. In this way, the discharge of hazardous waste would undergo the same scrutiny whether it is treated by our industry or poured down the sewer.

As an industry, the waste service industry is committed to protection of the nation's drinking water supplies. We are extremely sensitive to environmental releases which threaten both surface water and groundwater. We have sought the development of consistent standards

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for the quality of surface waters and groundwaters. We have campaigned for comprehensive coverage of our anti-pollution laws which would prevent the unregulated discharge of contaminants into potential drinking water sources. We support vigorous and even-handed enforcement of those laws.

Recognizing that our science grows better year by year and we are pushing ahead in our ability to understand and deal with problems of environmental contamination from toxic wastes and the myriad of other sources of environmental contamination, we should ask ourselves at every turn if we are doing the best job we can with the information we have available to us right now. On the face of it, we are clearly not doing the best job in terms of protecting our POTWs against all discharges of toxic chemical waste. We are not doing the job today. We will be abysmally inadequate in another year when these "high risk" wastes are encouraged to seek "alternative disposal."

Coordination of two different environmental programs is a challenge, admittedly, but urgent and creative action is required.

Congress should amend both the hazardous waste and clean water statutes to deny the option of unregulated discharge of toxic chemicals into the nation's municipal sewage plants.

Mr. ROE. Please proceed.

TESTIMONY OF JOHN KING, DIRECTOR OF REGULATORY AFFAIRS, TRICIL ENVIRONMENT SERVICES, DAYTON, OHIO, ACCOMPANIED BY ARLEEN SHULMAN, FEDERAL AFFAIRS MANAGER, NATIONAL SOLID WASTES MANAGEMENT ASSOCIATION, WASHINGTON, D.C.

Mr. KING. Good morning, Mr. Chairman and members of the subcommittee. I am John King, director of regulatory affairs, Tricil Environment Services of Dayton, Ohio.

On my right is Arleen Shulman, Federal affairs manager of National Solid Wastes Management Association.

The Institute of Chemical Waste Management of the National Solid Wastes Management Association is pleased to have this opportunity of testifying at these hearings before the subcommittee, and to present our grave concerns about the inadequacy of present regulation of toxic discharges into the Nation's sewers, represents an unreasonable threat to the human health and the environment.

Moreover, legislation is now being considered on the House floor which virtually invites a class of potentially dangerous contaminants to be discharged into the sewers by denying the disposal alternatives in current use.

Without swift action by the Congress, particularly in light of the expected enactment of amendments to RCRA, these discharges of toxic wastes into sewers will certainly increase by 1985. So we urge adoption of amendments to the Clean Water Act that will close the loophole for presently unregulated discharge of chemical toxic wastes in the sewers.

A number of companies of our Institute of Chemical Waste Management operate commercial hazardous waste treatment facilities around the country. We are all subject to environmental regulations, and as such, we are not only entirely familiar with the types of waste streams being produced by the hazardous waste generating industries, but we, and the EPA and the Congress and the general public are becoming more and more aware of exactly where those wastes are being discharged.

Recently, the EPA announced that waste generators are currently treating and disposing of four times as much waste as had previously been calculated at their own sites. In addition, millions of tons of hazardous waste go unregulated through the so-called small quantity generator exemption under RCRA, directly to landfills without treatment.

Earlier this year, the Office of Technology Assessment calculated that 5 million tons of hazardous waste were going to the domestic sewers per year, and this problem is the one that we call to your attention, and we recommend for remedial action through amendment of the Clean Water Act.

Now, EPA has excused from Federal regulation those who discharge to publicly owned treatment works on the apparently logical assumption that these discharges would be subject to the categorical pretreatment standards under the Clean Water Act.

Unfortunately, as we all must realize, the categorical standards are not in force, and such protection does not exist today.

EPA's long delay promulgation of the categorical treatment standards led to the 1976 court order, which we are all very familiar with, for 21 generating industries. In the 7 years since the court order, EPA has only issued one set of standards as final, and that being for the electroplating industry. The electroplating industry is starting to feel the effects of that loophole being closed. No longer can they enjoy the RCRA exemption and the lack of a categorical standard. Their discharges to the sewers are indeed being regulated.

Clearly, in the face of 20 other industries still enjoying the RCRA loophole, and the lack of pretreatment standards, amendments to the Clean Water Act is mandated by the public.

Now, we would point out that publicly owned treatment works are not designed to handle toxic metal-bearing wastes. While many of the systems that are in operation, particularly the large ones, can handle the metal-bearing waste through the dilution effect, dilution being the solution to the pollution for them, they are not designed to treat metal wastes. The metals are either going to the sludges, or they are going to the Nation's waters. As a result, 35 percent of the 15,000 POTW's are passing these toxic metals to the surface waters in violation of their NPDES permits and the water quality standards.

To us, it seems unlikely that the misuse of the Nation's POTW's as chemical treatment facilities, as opposed to municipal waste water treatment facilities is unacceptable.

Now, as if the present discharge of 5 million tons of toxic chemical waste into the sewers is not threat enough to compel congressional action, the House is now considering H.R. 2867, reauthorization of RCRA, which will prohibit land disposal of these very toxic metals, the California list, as such.

The authors of H.R. 2867 feel that these toxic wastes are so dangerous that Congress should not just mandate EPA regulation of disposal landfill, and to the land, but implement statutory prohibition.

Now, these authors of H.R. 2867 hope that these metal-bearing wastes will go to treatment prior to disposal, but we fear that another fate if more likely. We think that these wastes will move, by 1985, in the face of such land prohibition, to the easiest course, the easiest route, the POTW, the RCRA loophole.

Since the discharge to the POTW's is entirely legal under our present Federal hazardous waste laws, and in the absence of pretreatment standards, which prevent such discharges under our water pollution laws, we predict in fact that by early 1985 significant quantities of these high risk chemical wastes will be recorded in the Nation's POTW's, including the 4,500 POTW's that are already in violation of their permits. We should not let this happen.

Concurrent with congressional restrictions on land disposal of these wastes under RCRA, EPA should be directed to develop standards which will prohibit such discharges to POTW's, not just for the 21 industries, but for all industries which can be identified to discharge to the sewers.

Now, we commend Representative Molinari for taking a much needed first step with amendments to RCRA. His amendment will require a report to Congress in 15 months, identifying which haz-

ardous wastes are unregulated because of the POTW loophole, and would require those who use that loophole to notify the EPA, and would direct the EPA to revise RCRA regulations where necessary.

Now, NSWMA and the institute believe it is necessary to be more explicit also under the Clean Water Act. Coordination of two different environmental programs is certainly a challenge, and admittedly, an urgent and creative action is necessary, but Congress should amend both the RCRA and the clean water statutes to deny the option of unregulated discharge of toxic chemicals into municipal sewage treatment plants, before the Nation's waters become inevitably poisoned.

I wish to thank the chairman and the committee for the opportunity to testify here today.

Mr. ROE. The Chair wants to thank the gentleman for his splendid testimony; I think you hit upon a very important, if not vitally important issue right on target. I am aware of what is happening.

I do not think they are going to take that bill up today, are they? RCRA will not be taken up today. I guess they will be adding those amendments next week.

I think what you are saying is very important. We are all going to look into this because of the interrelationship, as you pointed out, between different legislative processes that we go through here. I am thinking of the water resources development bill, the clean water bill, RCRA is all one and the same as far as I am concerned and as far as this committee is concerned. So we will, by all means, be addressing this issue most thoroughly, as you have presented in your testimony, and I want to thank you for your input.

Now, are there any questions by the gentleman from Pennsylvania?

Mr. EDGAR. Mr. Chairman, I arrived late. I apologize.

I do not have any specific questions. I appreciate your testimony.

Mr. ROE. Thank you very much, Mr. King and Ms. Schulman.

Our next witness is Mr. Richard Austermann representing AMAX, Inc.

We want to welcome you to our committee, Mr. Austermann. The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

PREPARED STATEMENT OF RICHARD O. AUSTERMANN, AMAX, INC., ON THE CLEAN WATER ACT AMENDMENTS

Mr. Chairman, my name is Rick Austermann. I am an attorney with AMAX Inc. in its molybdenum division in Denver, Colorado. My responsibilities include the management of rulemaking and permitting in the environmental area.

AMAX Inc. is a diversified mining and energy company with operations worldwide. The company explores for, mines, refines and sells a wide variety of minerals and metals. AMAX's principal products are molybdenum, coal, lead, zinc, copper, iron ore, petroleum and natural gas, potash, phosphates, nickel, cobalt, tungsten, silver, gold and magnesium. Through ALUMAX Inc., a 50 percent-owned affiliate, AMAX is also involved in the production and marketing of aluminum and aluminum products.

We appreciate the opportunity to appear before you today. My testimony will be limited to just one issue -- water quality standards, how they are adopted, and restrictions on their subsequent modification. I have also attached a statement addressing additional issues that I would like to submit for the record.

The two bills now being considered in the Clean Water Act debate, H.R. 3282 and S. 431, would amend the Clean Water Act by imposing significant statutory restrictions on the states' ability to "downgrade" use designations. These amendments were offered in response to EPA's proposal, in October 1982, to modify current regulations on the same subject.

While EPA's proposal may have been overbroad in some respects, we believe that it also addressed some legitimate issues, issues we are facing in our permits today. In our opinion H.R. 3282 and S. 431 fail to resolve these issues, and in the long run may create more problems than they solve.

So that you may understand our concerns, let me briefly describe our experience in Colorado.

AMAX owns three mines in Colorado, all of which have discharge permits. Unlike some other states, Colorado has adopted and enforced very stringent water quality standards. As a consequence, at two of these mines our permits are "water quality limited"; that is, the effluent limitations are more stringent than BAT guidelines. For instance, at our Climax mine, our zinc limit is two times more stringent than BAT, our copper and cadmium limits are four times more stringent than BAT, and our lead limit is seventy-seven times more stringent than BAT. Since 1975 we have been engaged in a continuing effort to meet these limits. On so doing we have spent well over twenty million dollars for treatment facilities, and we spend approximately two million dollars each year to operate them.

As a result of this effort, two streams that were biologically dead have been restored to life. Trout can swim all the way up to our discharge points. For most parameters, our discharges meet drinking water standards.

We assume that this is the kind of behaviour Congress wants to encourage. However, if H.R. 3282 or S. 431 are adopted in their present form, just the opposite result may occur:

i) First, as a matter of pure logic, these amendments are not necessary to accomplish either the interim goal of "fishable, swimmable" waters, or the ultimate goal of restoring and maintaining the chemical, physical, and biological integrity of our waters.

ii) Second, the amendment is likely to create severe administrative problems for both states and the regulated commmunity as they go beyond BAT. For this reason, the amendment may deter states from adopting ambitious water quality goals.

iii) Third, the amendment tends to punish states and dischargers that have done the most to comply with the Act.

All of these problems are the result of uncertainties inherent in the process of going beyond BAT. I think the problems we have encountered in the mining industry are a good example of this.

First of all, it is well to remember what BAT stands for -- the best available technology economically achieveable. When an industry such as ours is asked to go beyond BAT, it is not possible to "go to the shelf", so to speak, and install a treatment system that is guaranteed to work. Systems have to be designed on a case by case basis, and neither a company nor a state can ever know for sure just what level of treatment is attainable.

For instance, at the Climax mine almost all of our wastewater originates as precipitation. The volume of this wastewater, and its physical and chemical characteristics, vary from season to season and from year to year as the weather changes, and as operations change. As a consequence, it is not possible to simulate "real world" conditions in a laboratory or in a pilot plant. The only way to define the true capabilities of a particular treatment system is to install it and run it. At Climax we spent more than two years on a "fast track" research effort just to test a number of treatment systems that had never before been used in the mining industry. We built our treatment plant on the basis of this research. Yet since going into operation, in order to improve our treatment capabilities, we have had to make two major modifications to our treatment scheme. The process chemistry now is entirely different from what it was just three years ago. I fully expect further changes to occur and applicable law should take this into account.

Another point worth making here is that we cannot "turn off" our discharges. Indeed, when our facilities temporarily shut down the volume of our wastewater actually increases.

Why is all of this important? Because as we have learned more about what we can do in the way of treatment, we have had to adjust applicable water quality standards. In one instance, we have had to request that Colorado "downgrade" the use designation of a stream segment. After extensive hearings the state has complied with our request, but EPA has not yet approved this action. Although approval would seem to be warranted under the present statute, I am not at all certain that EPA can do so under its current regulations. Worst of all, the House bill would now incorporate these regulations into the statute; the Senate bill would include even more stringent restrictions. If either bill is adopted and our request is not approved, then the company will be subject to civil and criminal penalties despite eight years of good faith cooperation with the state and EPA, and notwithstanding the fact that the stream is now fishable and swimmable.

We believe that Colorado's decision was reasonable, and we believe that the Act should remain flexible enough to allow similar decisions in the future.

Let me clarify what I mean by "downgrading", because states have not been uniform in their approach to use designations. In Colorado, the State Water Quality Control Commission has adopted at least five different aquatic life use designations which vary in their degree of stringency. When we "downgraded" our stream, we replaced a very stringent aquatic life classification with one that was slightly less stringent. As I have noted previously, trout still swim up to our discharge point. The stream is fishable and swimmable.

I suspect that the problems we have encountered during the last eight years will become common as more and more companies move beyond BAT. It has been extremely difficult and time-consuming for us to operate under EPA's current regulations, which of course formed the basis for the amendment appearing in H.R. 3282. As more and more companies begin to encounter these problems, there is real danger that the regulatory mechanism will grind to a halt. As an inflexible rule of substantive law, it will create more problems than it solves.

There are a number of ways this problem might be solved. AMAX proposed specific amendments to S. 431 during Senate hearings on that bill. We would be pleased to do the same as to H.R. 3282.

ATTACHMENT

ADDITIONAL COMMENTS BY AMAX INC.
ON AMENDMENTS TO THE CLEAN WATER ACT
BEFORE THE HOUSE WATER RESOURCES SUBCOMMITTEE,
HOUSE PUBLIC WORKS & TRANSPORTATION COMMITTEE

NOVEMBER 1, 1983

Following are AMAX's comments on other sections of the Clean Water Act that we believe should be considered by the Committee.

BAT Compliance

We endorse extension of the compliance deadlines for technology based effluent limitations. EPA has not yet promulgated categorical guidelines for many of our operations. Even for guidelines expected to be proposed soon, such as for tungsten, we need additional time to identify and install equipment necessary to meet these limitations.

Pretreatment

AMAX supports efforts to amend the Clean Water Act which recognize the need for flexibility in local pretreatment operations. However, procedural limitations, such as the various deadlines for applying for an alternative pretreatment system, are counterproductive and should be eliminated.

Point Source Definition/Storm Water Runoff

AMAX supports the language in the Senate Bill, S.431, that would exempt certain mine-related stormwater runoff discharges from normal permitting requirements (Section 402(l)).

AMAX believes that this is a fair amendment; some stormwater runoff devices are voluntary means of pollution control and should not be subject to permit requirements. Many mining operations located in mountainous, snowpacked areas, collect runoff around their mine sites to keep such water from coming into contact with process water. To require such operations to meet normal permit requirements seems unreasonable given the voluntary nature of the collection devices, which in and of themselves prevent or minimize pollution.

Section 404

AMAX believes that problems with Section 404 of the Act warrant Congress's attention. We are offering two very specific amendments to the definitions of "navigable waters" and "wetlands" which reflect our concerns.

Navigable Water Definition - EPA has defined the term "navigable waters" broadly to include streambeds that have water in them only intermittently as a result of rain or snowmelt; do not support fish, shellfish or wildlife; do not provide water to downstream users; and do not flow into other bodies of water.

Due to this broad definition, discharges which do not harm surface waters or adversely affect the water quality of other water bodies must still bear huge financial burdens to comply with effluent limitation regulations.

We suggest language that would limit the definition of "navigable waters" as follows:

> For purposes of this act, the term "navigable waters" shall exclude waters that do not support a diversified fish, shellfish, or wildlife population, do not provide water to downstream users, do not flow into other water bodies, and have a 10-year, 7-day low flow of zero. "Navigable waters" shall be defined as those waters which have, as a minimum, a six mile drainage net.

Wetland Protection - During the last decade, the Corps of Engineers' Dredge and Fill jurisdiction has expanded from "navigable waters of the United States" to include "wetlands and those areas adjacent to these waters", then to "adjacent tributaries and wetlands", and finally to uplands that are wet only part of the time, and thus contain "wetland type vegetation". Often the program's requirements grossly infringe upon personal property rights. Not all "wetlands" are equally valuable. Yet, under current definitions, all wetlands must receive equal protection, even if they are areas of farmland temporarily saturated by snowmelt, or artifical formed wetlands created by irrigation or dredging activity.

AMAX suggests that an acceptable solution to this problem would be to exclude all man-made, or unnaturally formed, or "artificial" wetlands from the statutory definition.

Mr. ROE. Please proceed.

TESTIMONY OF RICHARD O. AUSTERMANN, ESQUIRE, AMAX INC., DENVER, COLO.

Mr. AUSTERMANN. Thank you very much, Mr. Chairman.

My name is Rick Austermann. I am an attorney with AMAX. AMAX is a diversified mining and energy company with operations worldwide. I work for its molybdenum division in Denver, Colo. My responsibilities include the management of our participation in environmental rulemaking and permitting proceedings.

I appreciate the opportunity to appear before you today. What I want to do is to address a single issue that a number of other witnesses have already raised in much briefer fashion, and that is the problem of water quality standards, how they are adopted and restrictions on their modification.

The two bills that are now being considered in the Clean Water Act debate, which are H.R. 3282 and S. 431, would amend the act by imposing significant statutory restrictions on the States' ability to "downgrade" use designations.

As I understand it, these amendments were offered in response to EPA's proposal in October of 1982 to modify current regulations on the same subject.

I believe that EPA's proposal may have been overbroad in some respects. However, in our opinion, we believe that the proposal also addressed some legitimate issues, issues that we are facing in our permits today.

In our opinion, neither of the bills currently before the House or Senate adequately resolves these issues and, perhaps in the long run, they could create more problems than they solve.

So that you can better understand our concerns, I would like to briefly describe the experience we have had in Colorado. AMAX owns three mines in Colorado. They are in net precipitation areas, and all of them have discharge permits. Unlike some other States, Colorado has adopted and enforced very stringent water quality standards. This is something that I think sometimes gets lost in debate. People seem to think that no one has gone beyond BAT. Well, this is not the case in Colorado.

At two of our mines, our permits are water quality limited, that is, the effluent limitations are more stringent than BAT guidelines. For instance, at our Climax Mine, the zinc limit is two times more stringent than BAT guidelines. Our copper and cadmium limits are four times more stringent than BAT guidelines, and our lead limit is 77 times more stringent than BAT guidelines.

Since 1975, when we got our first water quality limited permits, we have been engaged in a continuing effort to meet these limitations and, in so doing, we have spent well over $20 million for treatment facilities and we spent approximately $2 million each year to operate them. The results of this effort have been positive; two streams that were previously biologically dead have been restored to life, and I am pleased to report that trout can now swim all the way up to our discharge points, and for most parameters the discharges meet drinking water standards. The water could be drunk without treatment—without further treatment.

Now, we assume that this is the kind of behavior that the Congress wants to encourage in these amendments and that what we have done during this period of time is really what people are talking about when they talk about going beyond BAT. However, based on our experience in doing this, we feel that if the House or Senate bills are adopted in their present form, just the opposite may occur.

I would like to briefly explain why I think that is so. First of all, as a matter of pure logic, the water quality amendments are not necessary to accomplish either the interim goal of fishable-swimmable waters or the ultimate goal of restoring and maintaining the chemical, physical, and biological integrity of our waters. Now, incidently, we support these goals, but EPA's current regulations and the restrictions on downgrading that are contained in the bills do not focus at all on the status of the water, what condition it will be in after the downgrading occurs.

Second, it seems to me that the amendments are likely to create severe administrative problems for both States and the regulated community as companies attempt to go beyond BAT. For this reason, I think the amendments may deter States from adopting ambitious water quality goals.

Finally, in my opinion, the amendments tend to punish States and dischargers that have heretofore done the most to comply with the act.

In my opinion, these problems are the result of uncertainties which are inherent in the process of going beyond BAT and the failure of the amendments to deal adequately with the uncertainties. I think the problems we have encountered in the mining industry are a good example of this.

Let me describe what we have been through. First of all, I think it is well to remember what BAT stands for. It is supposedly the best available technology which is economically achievable. Generally, this is equivalent to the best demonstrated technology, which is your new source performance standards.

Now, when a large industry such as ours is asked to go beyond BAT, you cannot call up your engineers and ask them to go to the shelf, so to speak, and to choose a treatment system that is really guaranteed to work. The systems have to be designed on a case-by-case basis and neither a company nor a regulating State can ever know for sure just what level of treatment is obtainable. For instance, at the Climax Mine, which I referred to earlier, almost all of our waste water originates as precipitation which falls upon our facilities. The volume of this waste water and its physical and chemical characteristics vary considerably from season to season and from year to year, both as the weather changes and as our operations change.

As a consequence, it is not possible to simulate these real world conditions in a laboratory or in any pilot plant. The only way to define the true capabilities of any particular treatment system is to install it and run it. It is a very expensive process.

Now, at Climax, during the mid 1970's, we spent more than 2 years on a fast track research effort right after we got our permits. About all we were able to do at that time was to test a large number of treatment systems that had been used in other industries but that had never before been used in the mining industry.

We built our treatment plant on the basis of this research. However, building the plant was really just a beginning and not the end of our efforts. Since going into this, into operation, and in order to improve our treatment capabilities, we have made two major modifications to the plant and its process circuits and, in fact, the process chemistry that we are using today to treat this waste water is now entirely different from what it was just 3 years ago. It is an iterative process. Even though I think we have accomplished a lot, I fully expect further changes to occur, and I believe that applicable law should take this into account.

Another point that I think I would like to make here is that in the mining industry we cannot turn off our discharges as you might in some other industries. As I indicated before, the source of our waste water is precipitation and, in fact, because of our consumptive use of water, when our facilities temporarily shut down, the volume of our waste water actually increases.

I have gone into quite a bit of detail here, and the question is—why is all this important? I think it is important because as we have learned more about what we can do in the way of waste-water treatment, in response to these changing circumstances, and in order to stay in compliance with the law, we have had any number of occasions to request adjustment of applicable water quality standards. In one instance, we had to request that Colorado downgrade the use designation, which is the heart of the present controversy.

Now, after extensive hearings, the State complied with our request to do this. Because of administrative delay, EPA has not yet approved this action, although approval would seem to be warranted under the statute. I am not all certain that EPA will do so under its current regulations. I believe that they are far from clear in their application. And worst of all, at least from my point of view, of course, we have the situation now where the House bill would incorporate these regulations into the statute and the Senate bill would, in its present form, go considerably further and include even more stringent restrictions. If either bill is adopted and if, as I fear, our request is not approved because of this, then the company will be subject to civil and criminal penalties despite 8 years of good faith cooperation with the State and EPA, and notwithstanding the fact that the stream which once was dead is now fishable and swimmable.

We believe that Colorado's decision was reasonable and we believe that the act should remain flexible enough to allow similar decisions in the future.

Before closing out my testimony, I would like to clarify what I mean by downgrading. I think this is important because the States have not been uniform in their approach to use designations and I think it is a bit anomalous that we should adopt a uniform Federal rule on water quality standards when, in fact, the States do not approach this topic in the uniform fashion.

In Colorado, the State water quality control commission has adopted at least five different aquatic life use classifications, as they call use designations, which vary in their degree of stringency. It depends upon the number of species present, their vitality, and their sensitive species. When we downgraded the particular stream

segment at Climax, we replaced an extremely stringent aquatic life classification with one that is only slightly less stringent. As I noted previously, trout still swim up to our discharge point and the stream is fishable and swimmable. So, when people talk about downgrading, say downgrading an aquatic life use designation, they are not talking about devastating the stream necessarily.

Now, I suspect—I fear, like I said, we have been involved in this process for a long time, and I suspect that the problems that we have encountered during these 8 years will become common as more and more companies attempt to go beyond BAT. I understand it is not the common practice, at least in the East right now, although it is what people are pushing for.

In our experience, it has been extremely difficult and time consuming for us to operate under EPA's current regulations. It seems that as more and more companies begin to encounter these problems, there is a real danger that the regulatory mechanism will grind to a halt. It seems to me that the current system is too inflexible and, if retained, will create substantial problems.

Now, in our opinion, there are a number of ways in which this problem might be solved. On the Senate side, we did propose specific amendments to S. 431 during the hearings there. We would certainly be pleased to do the same before you. I do not think, however, there is any need to repeat at this time the remainder of my statement, but I would be pleased to answer any questions that you might have.

Mr. ROE. Well, we want to thank you for your comprehensive testimony. It may be very necessary to repeat the rest of it because you built the case but you have not made the points.

Why do you not go through with the rest of it? It is only two pages. Let us go through that.

Mr. AUSTERMANN. OK. Actually the other two pages——

Mr. ROE. What the other body does does not necessarily mean that this body will do the same thing. You realize that.

Mr. AUSTERMANN. Fine. Yes, I understand that, Mr. Chairman.

Actually, the other two pages deal with separate issues. Let me shoot from the hip, though. I think you are asking for my specific recommendations on the water quality standards problem?

Mr. ROE. Well, I think you have set a case, from the Chair's point of view, as to your concern, which is a little confusing, and could be contravening in part. I do not think you mean to do that.

You are saying that in the specific case you brought in reference to that stream in Colorado. You went back to Colorado, and we say we agree with you, from the point of view that the States are not uniform in there, and that is one of the concerns of this committee for a long time. In other words, everybody says we will turn everything back to the States, they can run it better than Washington, the bureaucracy in Washington, and the whole thing. But when we get to that particular point, in substance, many of the rules and regulations in the States are far inferior, which is the whole purpose of establishing the National Clean Water Act in the first place, to get some kind of national standards for the obvious reason.

So therefore, having said that, you are coming back and saying, and I think legitimately so, in part, that there are particular types

of production operations in the Nation, whether it be mining, or whatever at this point. Where in order to meet the BAT requirement, that you just cannot take this particular thing to do that issue, that you are going to spend that kind of money, you may have to expand that expenditure, and it will produce, in effect, a higher quality treatment, is that a fair comment to make?

Mr. AUSTERMANN. Oh, yes. And in fact, we have gone beyond BAT.

Mr. ROE. OK. But then if we are doing that, if we are meeting the BAT requirement, and going beyond that, why should we be looking for downgrading further? That is what is confusing to me.

Mr. AUSTERMANN. Oh, OK. We are not talking about downgrading the stream from what it was. What occurred, or what happened in this particular instance was that the State adopted very ambitious goals of turning a stream that was biologically dead into an absolutely top flight pristine mountain stream.

At the time the State did this, this was back in 1974 and 1975, nobody had a lot of information, either about the existing water quality, what level of water quality it might take to support such aquatic life, or what type of treatment it might take to accomplish the desired result. It has been a very long process, over a period of 8 years, to go about doing this.

Now, after conducting our initial research, installing a plant, treating the water, bringing it back to life, this stream has become biologically viable. It did not meet the State's use classification that it adopted, though. It was not the purest form of high mountain stream, if you will. It did not have the most sensitive species in it.

As a consequence——

Mr. ROE. Why should it not have?

Mr. AUSTERMANN. Excuse me?

Mr. ROE. Why should it not have? I want to be the devil's advocate. Why should it not have?

Mr. AUSTERMANN. Because the treatment plant that we designed and operated, and which everyone agreed seemed to be the best approach, just did not get the job done. It was not capable.

Mr. ROE. To meet the standards?

Mr. AUSTERMANN. To meet the standards. The goals that had been set.

Mr. ROE. That Colorado——

Mr. AUSTERMANN. Had set.

Mr. ROE. All right, go ahead.

Mr. AUSTERMANN. And at the time—OK, when everyone decided that that was the situation, that if in fact the stream was to be upgraded even further to meet the designation, that additional treatment, additional controls would have to be adopted. That what we had agreed to previously just was not going to get the job done.

But we did some preliminary calculations as to what it might cost, again without really knowing, at this stage of the technology, we do not know for sure what you can accomplish. We made our best effort to guess what level of treatment might be required to upgrade the stream that one additional bit, and we held very extensive hearings for the State over a period of years, and the State decided that it simply was not worth it.

Mr. ROE. Well, but then that becomes a function of cost.

Mr. AUSTERMANN. Yes.

Mr. ROE. Is the basic point—and then you are going back to your testimony, you mentioned that the BAT standards was based upon the best available technology that is economically achievable, which is part of the existing law.

What I am trying to get at is the euphemism of downgrading is misused in many areas. I think you are trying to develop that.

In other words, what do we speak to downgrading? What does this really mean? Is downgrading a word that can be used, or terminology and understanding that can be used as an across the board? Are we really talking about downgrading? Is the downgrading that is involved in Colorado's decision that is now awaiting EPA's further observations a downgrading from a national standard, or is it a downgrading from a Colorado standard?

I am leading to a point.

Mr. AUSTERMANN. Yes. I do not think, in my own personal opinion, nothing is being downgraded, all they are doing is adjusting the goals that they set. The stream has clearly been upgraded.

Mr. ROE. Were the goals they set higher standards than what the EPA had established under the designation of what they meant by fishable and swimmable waters?

Mr. AUSTERMANN. Yes.

Mr. ROE. They were economically viable, is that not in fact what the law says?

Mr. AUSTERMANN. [Nodding head.]

Mr. ROE. But basically what you are in fact saying is that to go further than what you have done now is a question of the function of cost, or technology, or both?

Mr. AUSTERMANN. At this stage, I would have to say both. But I think whenever you try to go beyond BAT, you always have mixed questions of technology and cost, because I do not think you could find an engineer in the world that would ever guarantee the ability of any beyond—BAT treatment system to meet certain specified effluent limits. All you can do is try.

Mr. ROE. What we are wrestling with, and share with me a minute, the following two points.

One, that we know that the fish are returning to the Hudson River. But, however, the latest reports, where PCB's and other issues are involved, the fish are highly deformed, and all kinds of warts, and growths, and so forth and so on.

I am just asking this from your professional point of view, that the fish are in the river, and I am looking to what the broad functions of our original decisions made in 1972, of fishable and swimmable, that is awfully broad.

How do you interpret that? The fish can come back into the Hudson, they are surviving, at least a little longer, but they are entirely gross, if you like, as to what they may have been, or would be, if the water was clear, that they could be able to survive in.

Mr. AUSTERMANN. Yes. I think clearly, from what you have described, that is not a desirable state of affairs, and it is a perversion of the system.

Mr. ROE. But it is getting to what the terminology and what the euphemism has been on what we term fishable.

Let me cite another case. New Jersey has been doing some very intensive work the last 15 years, probably the most advanced work in the world, in bivalve oyster culture.

When you look at the oysters, the oysters are there. They are subject to some predators that have been introduced from another area, they think from Japan. But however, one plant was producing, I mentioned this before, very slight oxide waste, and it was so slight that it met all of the national standards, and all of the standards of the known art of the business at that point, until they determined that oysters themselves naturally—they filter the materials out of the water as they feed, and consequently they are great concentrators. They concentrate in the copper, so that when the oysters, although they look nice and healthy, they are big fellows, and everybody would like to get into them, and when you open them up they are as green as a penny inside.

I am only bringing these points up to you, that the committee is wrestling with one or two issues, I know the other members feel the same way.

We, of course, want to do the right thing. We recognize the balance that has to be struck here. Somebody has to be a Solomon, at best, to work it out, but be that as it may, I am wondering if we are just going to be adding amendments, part of which you spoke to, or do we go as we are thinking about, going further behind these issues, to determine what we really mean by fishable and swimmable?

In other words, let us assume—and I am taking a little extra time, but I think you are a witness that can enjoy this exchange of view, is that a lot of natural fishlife feeds on the biota of the stream, and this is all part of upgrading that stream, to provide the resources that we want to, as far as wildlife is concerned. The fisheries, in this instance.

So therefore, if we speak of reducing the requirements further, for whatever the reason may be, then we are not really living up to what the intent of Congress was initially in this legislation, is that a fair comment?

Mr. AUSTERMANN. Well, Mr. Chairman, I think it depends—I hate to give such a lawyer-like answer.

Mr. ROE. No, it is OK.

Mr. AUSTERMANN. It seems to me that the basic problem you are grappling with is the problem of trying to define uniform and easily applicable Federal standards, which will then be applied to an extremely broad diversity of factual situations, in which it is very difficult to apply Federal tests.

Now, you know, the question I think you are talking about shellfish, and the fact that even though they are living and growing, are not edible.

Well, if you look at the history of the Clean Water Act, particularly 404, I think, I think you are correct, that to allow that situation to continue is probably not in accord with the original legislative intent.

But I would hestitate to say that on a uniform basis situations like that will occur. For instance, again, if you are dealing with fish that do not bio-accumulate this type of pollution, or which do not serve as a food source, the problem may not exist in different

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parts of the country. I think that is the situation, and so I appreciate the problem. I do not have any good general answer.

I think it can be—if we can jump over to another section of the Water Act, though, and look at the 404 section, I think one of the subsections of that succinctly states the test that at least we are all aiming toward, and that is they should not approve the designation of a disposal site if it will have unacceptable adverse effects on the aquatic life, and what we are really trying to do is come up with good general test of what is unacceptable.

Mr. ROE. Well, I do not want to take up all the time, but I think you are again, you know, we are talking about a function of costs. If we had all the money in the world, then this would not be a major problem, because—at least as far as our technology is concerned. We would be able to say that the latest and most advanced technology to mankind, we spend the money to do it.

Is that not what the confrontation has been with industry, as far as trying to achieve the goals in fair play, in a point of being competitive, domestically being competitive, and internationally, and so forth, and so on?

Mr. AUSTERMANN. Well, certainly, I think as a matter of policy we sometimes get defensive, because we feel as if clean water is treated as if it were the only important resource.

Mr. ROE. Some people treat it that way, particularly if you have to drink it.

Mr. AUSTERMANN. That is exactly true, and I think no one would deny that it is an extremely important resource. But I suppose our point of view is that you can take treatment to the point of absurdity.

Mr. ROE. Let me finish on this point.

The Committee has been going through this legislation, and has devised this legislation since 1972. I guess we had amendments and modifications, and made course corrections, and all the other things, for 10 years, and we are making progress, you indicated that yourself.

Mr. AUSTERMANN. Yes.

Mr. ROE. So that is good. If it is a function of cost, one of the issues that has been involved, which is going through some members' minds, is two points.

One, we understand the competitive part of industry, and the problems that we are having internationally. We understand, jobs, and whatever. What Congress has done is they said to the American industry, hey, fellows, you have got to go out and do your thing in order to meet these goals.

What they said to the municipalities, and the subdivisions of government is we are going to have a matching grant program for you, or grants program to help expedite this, to provide the funding. You know the history behind that issue.

What is your right—what do you write off? Let us suppose you spent this $20 million. How do you handle that? How does your company handle that $20 million investment as a writeoff? What period of time do you write that off against your income?

Mr. AUSTERMANN. The capital expenditures, the $20 million for two treatment plants that are referred to, are treated just like any

other capital expenditure, they are amortized over the life of the plant.

Frankly, I do not know what that is.

Mr. ROE. Well, is there any—I am just asking because I do not know either, but we want to get some testimony to this effect.

Under the investment tax writeoff laws, can you use that any way whatsoever?

Mr. AUSTERMANN. If you are asking about us, we cannot use it right now, because we are losing money.

Mr. ROE. No; I mean is it—I do not want to go into that issue, but I am saying, to your knowledge, can it be used?

Mr. AUSTERMANN. I think that it probably can, if you are talking about accelerating your depreciation.

Mr. ROE. What I am trying to get at is should this committee be considering an issue to come back and say it is just impossible for us to meet this goal, and to be evenhanded and uniform, without some kind of a special tax writeoff, because that would innure directly to a particular case?

In other words, if there was a set of tax laws that were devised where we came back and said you would have accelerated depreciation over a 3-year period of time, and an investment tax credit over a 3-year period of time, that would go a long way for each firm being able to deal with that situation. By having national standard, they would have a methodology of recouping that capital cost?

Mr. AUSTERMANN. Yes; I agree. I think what that sort of thing would do is make it easier for firms to finance these large capital expenditures.. It probably does not get to the underlying issue of how much, as a matter of policy, do you want to make people spend.

Mr. ROE. Look, if they are going to either rewrite this law and say to you fellows that are coming in to testify, we are trying to listen to you intently and so forth, but you come up with some of the mechanism that does not exist. I am trying to figure out what that ought to be and it seems to me that if we are saying, and I am trying to buy your observation for the following points.

Let us assume your operation is at the headwaters of a stream that goes down through a whole series, the State of Colorado goes into larger and you have cumulative waste that you place all along the line. Should the person three quarters of the way down be responsible for the cumulative waste to clean up that section of the river. And the answer is of course, they should not be.

We are coming back and saying at the headwaters, well, you have done a certain amount and you could do a little bit more but you have a function of cost here. But if you came back and said, well, OK, you have got a grants program that is going to municipal plants and so forth and so on, but you have not provided any mechanism to industry, therefore industry looks at the point of view do we dump into a municipal sewer system, do we have to put our own plant in. What is the best thing for us to do, what do we do with pretreatment. And the cycle and Mr. King testified earlier today and he said look, if we have a hole in the RCRA bill and we have got 20 of the different categorical areas of toxic waste involved, other wastes involved in industry, that instead of trying to

dump it on the land, which they would not be able to do if that amendment is adopted, they are going to dump it into the sewers. OK.

Now, if all these forces are coming together, what people do not seem to realize around here is that the water resources bill, the clean water bill, the RCRA bill, the solid waste bill is all one and the same and it is all just the same thing. And many of the rules and regulations are contravening each other.

So, therefore, there is no mechanism that I am aware of now where the industry of this country can come back and say we will do our thing. But you have to give us some way to recoup those capital costs much quicker, over a 3-year period, a 4-year period, something of that nature. I just want to put that in your mind to think about.

Mr. AUSTERMANN. I agree.

We ourselves have looked at similar financing schemes. On the one plant, we were not able to do exactly as you suggested. We were able to obtain some industrial finance bonds which gives us a break in our interest rate.

Mr. ROE. But still it is a 20-, 30-year writeoff for the life of the equipment. OK.

The gentleman from Minnesota?

The gentleman from Oregon.

Mr. SMITH. I want to compliment the gentleman on his testimony and as well the efforts of your company obviously to assist in the cleaning of the waters of Colorado.

My question has to do with your testimony and the statement that you made that in cases you have gone beyond the best available technology, in some cases seven times. If you have gone beyond the best available technology, and I assume that EPA does not demand any more than that, why are you concerned?

Mr. AUSTERMANN. I am concerned because we were not able to meet the water quality standards that apply.

Mr. SMITH. Of Colorado or EPA.

Mr. AUSTERMANN. Of Colorado.

So it required a downgrading.

Mr. SMITH. So that Colorado's laws are more stringent than EPA?

Mr. AUSTERMANN. Yes.

Mr. SMITH. And the problem is that you cannot, even though you have gone beyond EPA standards of best available technology, you cannot qualify in the Colorado situation?

Mr. AUSTERMANN. Well, under Colorado law we were able to. However, under Federal law, once you have classified a stream, it becomes very difficult to downgrade that classification, and so the problem we were facing was Federal restriction on downgrading, notwithstanding the fact that Colorado had adopted water quality standards that were more stringent than EPA required.

Mr. SMITH. OK, and then very quickly, tell me how you would amend the two bills that are before us which would, I assume, eliminate the opportunity for you to downgrade in Colorado.

Mr. AUSTERMANN. To me, the major factor that both of these bills lacked and that EPA regulations currently lacked is that in considering the approvability or disapprovability of a downgrading

action they failed to look at the condition the stream will be in after the downgrading occurs. Now, it seems to me that procedurally this sort of thing could occur in either of two circumstances.

If you looked at section 303 of the act it could occur during a downgrading type of proceeding. If you look at either section 302 or 301(b)(1)(c), depending on how you look at those two sections, it could occur in a variance-type proceeding.

But under the current act, section 301(b)(1)(c) is quite explicit, that after July 1, 1977, your discharge permit must contain limitations that will protect the receiving water quality. No exceptions.

Mr. SMITH. So if I hear you correctly, you are saying that even though Colorado has higher standards than EPA at the moment, and your company has exemplified that, that even with downgrading in Colorado, you would still have higher standards than EPA and best available technology, yet these bills would deprive you of doing that as they are before us.

Mr. AUSTERMANN. I think there is a great danger of that.

Unfortunately, none of these rules are crystal clear.

Mr. ROE. Would the gentleman yield?

Mr. SMITH. Yes, I yield to the Chairman.

Mr. ROE. They did not deprive you from doing that, it is that EPA has not made the decision; is that not correct?

Mr. AUSTERMANN. Yes, as I stated earlier, I think the existing regulations which relate to downgrading are not very clear in their operation. We have not gotten a clear signal from EPA.

Mr. ROE. If the gentleman would yield further.

There is nothing in the law presently that precludes that decision process to be made.

Mr. AUSTERMANN. Not in the law, I agree.

Mr. ROE. OK.

Mr. SMITH. Just point of clarification.

In the two bills there are provisions however that would deprive you of downgrading; is that correct? That is what I thought I heard you say.

Mr. AUSTERMANN. I think in the Senate bill, definitely, yes. In the House bill as it presently stands before you, maybe. Because what you have done is basically take EPA's existing regulations.

Mr. ROE. The gentleman from Pennsylvania.

Mr. EDGAR. Thank you, Mr. Chairman.

I have been interested in your testimony.

Can you tell me whether or not your company was for or against the Clean Water Act originally set out?

Mr. AUSTERMANN. That was before I was with the company. I really have no idea. I am sorry about this.

Mr. EDGAR. Could I ask you just to speculate in reversing the role and put yourself in a State that does not have high standards for its water. Would not some of the suggestions you are making enable those States to downgrade their water supplies far below national standards?

Mr. AUSTERMANN. Not necessarily. As I said, I believe if you focus in on the quality of the water as it will be after the downgrading occurs, that does not necessarily have to occur.

Mr. EDGAR. Let me ask it another way. What would prevent States from downgrading streams to a very low point in your pro-

posal? What would prevent them from simply saying we agree with you that there ought not to be too strict Federal standards and we are going to downgrade our water supply and allow increased pollution not to praise those companies like yours that have gone to best available technology and more, but we are going to relax our standards.

Mr. AUSTERMANN. If the relaxation would allow the pollution to occur at such levels as public health was in danger, or fish and wildlife would no longer be supported, even though that could be accomplished at reasonable cost, then I believe under my proposal EPA would be free to disapprove that type of action.

Mr. EDGAR. Does not your experience show that when very high water quality goals are set, you can make great progress in cleaning up the water?

Mr. AUSTERMANN. Yes, and I have no objection to setting these very ambitious goals. I think as I stated in my testimony one of the dangers that we have here is that the States may be deterred from setting these goals. I think the problem is that when you translate a goal or a general policy statement into an inflexible rule of substantive law, it becomes very difficult to deal with. I agree with you that when the State of Colorado adopted these very ambitious goals for Ten Mile Creek, which is one of the creeks that we discharge through, it did make us work very hard and spend a lot of money. And I am not objecting to that.

What we need, I think, is the flexibility to deal with the fact that notwithstanding that effort, we were not quite able to attain what the State wanted. We were almost able to attain it but not 100 percent.

Mr. EDGAR. Is not your argument then with the State to modify their restrictions slightly rather than with the Federal Government?

Mr. AUSTERMANN. Well, that is the problem I am addressing. The State agreed to do that. There is a great deal of uncertainty now as to whether the State's action is approvable by EPA because of its restrictions on—they view this action as a downgrading.

Mr. EDGAR. Let me ask you, on page 2 of your attachments I am confused about two provisions. Can you explain what you mean in the middle of page 2 of your attachments where you say, "We suggest language that would limit the definition of navigable waters as follows:"? And then you give a definition, "For purposes of this Act, the term 'navigable waters' shall exclude waters that do not support diversified fish, shellfish or wildlife population, do not provide water to downstream users, do not flow into other water bodies and have a 10-year, 7-day low flow of zero, navigable waters shall be defined as those waters which have as a minimum 6-mile drainage net."

Where did you come up with that definition?

Mr. AUSTERMANN. I believe that this particular language was developed with a group of other companies, primarily from Arizona. We have operations in Arizona, not the division that I work for, in which the climatic conditions are quite a bit different from what they are in Colorado. As I mentioned earlier, we are in a net precipitation area, we get more rain than we have evaporation.

In Arizona the situation is just the opposite. You have a lot more evaporation than you have rain and very often, it is my understanding and I am not personally familiar with these operations, that very often discharges which qualify as point source discharges under existing definitions of the act, basically do not go anywhere. They do not become part of the total drainage net that you are talking about when you refer to navigable waters.

The 10-year, 7-day low flow is a very common hydrologic concept and I think EPA recommends to the States in guidance that water quality standards apply, if you will, down to the 10-year, 7-day low flow. We use that in Colorado. That is the basis upon which discharge permits are written. Your discharge in combination with receiving water quality has to protect water quality standards down to that flow.

In our particular situation in Climax, the 10-year, 7-day low flow is zero even though it is a net precipitation area. The 6-mile drainage net was a recommendation of some hydrologists. I do not know the basis for that. I am not sure if I answered the question.

Mr. EDGAR. I think if you are going to recommend that kind of language you ought to do a comparison then of what that language would mean that is different from the existing language, because I really have some question as to whether, you know, the particulars of that proposed language really do what you suggest that it does without causing some harm.

But, let me go to my final question which is on the last two paragraphs which really kind of disturb me a little bit because I think I understand your intention. But the way you go at it is real troubling:

Wetland protection. During the last decade, the Corps of Engineers dredge and fill jurisdiction has expanded from navigable waters in the United States to include wetlands and those areas adjacent to these waters, then to adjacent tributaries and wetlands and finally to uplands that are wet only part of the time and thus contain wetlands-type vegetation. Often the programs requirements grossly infringe upon personal property rights. Not all wetlands are easily valuable, yet under current definition all wetlands must receive equal protection even if they are areas of farmland:

And so on. Then you say that your suggestion is that acceptable solution to this problem would be to exclude all manmade or unnaturally formed or artificial wetlands from statutory definition.

Can you clarify that for us?

Mr. AUSTERMANN. Well, we have a situation in Colorado, I do not know if you are familiar with the geography out there, but of course it is generally a very arid State except in the mountains where we do get quite a bit of snow. Almost all of the agriculture in Colorado is therefore irrigated, we divert waters from the streams. And in the older farms, particularly in the higher parts of the State, you do not use little sprinklers or anything. What they do is just divert the flow of streams onto these meadows to let the water flow over them.

As a consequence of this practice, which is totally man made, certain types of vegetation which have been defined by the corps, or the Fish and Wildlife Service, to be wetland vegetation have arisen. Of course these are plants that can tolerate seasonally saturated soil. In certain instances the corps has told these farmers

when the land has been taken out of agricultural production for some other type of development, that could either be industrial or in many cases real estate development, that these were wetlands and that development could not occur without informing them.

Mr. EDGAR. I see what you are trying to get at for Colorado but if you follow me for just a second, we made the Erie Canal which is a manmade function, many large lakes that we made that are man made. Would not they qualify as being not under your jurisdiction if you exclude all manmade or unnaturally formed or artificial wetlands?

Mr. AUSTERMANN. As we have fashioned this; yes. I suppose what we have failed to do here is to take into account the purpose for which the man-made wetland was created.

You know, if the wetlands that were created incident to the construction of the Erie Canal, if people desired to leave them in place as habitat, then I think it is perfectly appropriate. But I think in the type of situation that I have been describing, nobody had the slightest idea that that was going to occur. And in fact I am not even sure at the time that debates were occurring initially people realized that this was going to be the effect of the program. I think we had a situation in Gunnison County, which is on the western slope, where the corps drew the wetlands map and I think most of the county, including most of the then-existing town fell within wetlands. It just flabbergasted people.

Mr. EDGAR. Thank you.

Mr. ROE. Mr. Stangeland.

Mr. STANGELAND. It just seems to me that we have to go to a different terminology. I agree with you, but if a State sets substantially higher standards and you find after best effort that you cannot meet those standards, then some reclassification, so long as the standards are equal to or higher than EPA's is needed. If you can find a new phraseology and give the States that flexibility, that is what I think you are asking for.

Mr. AUSTERMANN. Precisely, Congressman.

Mr. STANGELAND. And if that flexibility is not allowed, there are many States who are not going to set those high standards. They are only going to go equal to the Federal and then maybe never ever achieve really what we—what you have achieved in Colorado; is that not correct?

Mr. AUSTERMANN. That is my fear, Congressman, yes.

Mr. STANGELAND. Find a new terminology and we can get the job done.

Mr. AUSTERMANN. We are working hard at it.

Mr. ROE. The gentleman from Samoa, Mr. Sunia.

Mr. SUNIA. No questions.

Mr. ROE. We want to thank you very much, Mr. Austermann, for your testimony and we appreciate your being with us this morning.

Mr. AUSTERMANN. Thank you, Mr. Chairman.

Mr. ROE. Our next witness is Mr. Randolph Goulding, president of Jordan, Jones & Goulding, Atlanta, Ga., and president of the American Consulting Engineers Council.

Mr. Goulding, I want to welcome you again to our committee. The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF THE AMERICAN CONSULTING ENGINEERS COUNCIL

Mr. Chairman, Members of the Subcommittee on Water Resources. My name is Randolph Goulding, President of Jordan, Jones and Goulding in Atlanta, Georgia, and Chairman of the American Consulting Engineers Council's (ACEC) Environmental Committee. We are pleased to present this statement on reauthorization of the Clean Water Act and comments on certain provisions of P.L. 95-217.

ACEC is a national organization of 3,800 private engineering firms. More than 900 of our member firms are actively engaged in the study, design and engineering services during constructon on industrial and municipal wastewater treatment plants. ACEC members have provided engineering for more than 90 percent of the water pollution projects since the Clean Water Act was signed into law in 1972.

Based on that experience we have concluded that fundamental goals of the act are still sound. Considerable progress has been made in cleaning up the rivers streams and coastal waters of the United States. However the second decade of the effort must be directed to completion, refinement and more effective resource management and coordination, mostly at the state and local government level.

Many projects begun in the 70s must be completed in the 80s to achieve water quality goals. This requires that EPA and state regulations remain consistent and predictable, but not cast in stone if water quality and other community goals would be better served by some flexibility.

Refinement of water pollution control strategies will result from the substantial increase in understanding about the sources, fates and interaction of both toxic and conventional pollutants and their impacts on aquatic life. Not only has knowledge increased about these impacts but treatment plant operation and stream segment management has been refined.

Well-run plants are more and more the rule in most communities. The regulators in state environmental agencies are also more professional. But these states to maintain their professional competence must have a predictable source of resources especially as more formerly federal responsibilities are accepted by states. The states cannot do more for less.

Effective resource management and coordination is essential at all levels. To assure that plants continue to operate well requires professionally trained staff and adequate dedicated revenues. Many engineering firms whose practice was limited to design and construction management have now created operating divisons which run treatment plants for municipalities and industry under contract. But financial management is essential too. There is not, and should not be, any long-term federal funding assurance for operations or replacement. The utility-based concept for wastewater treatment must be routinely accepted by communities, as it is for water treatment, electric generation and telephone service.

Not only must O&M be supported by user revenues, but longer term replacement and expansion must be based on a combination of local capital development assistance and private investment, not federal grants. ACEC strongly supports alternative sources of revenue to federal grants. This is a consistent position with our support for the elimination of grants for planning and design in the 1981 amendments.

In November, 1982, ACEC together with 25 other technical professional, water infrastructure, public interest and industrial associations sponsored a National Water Symposium to look at current problems in financing water and wastewater systems, identify new technologies and develop strategies for long term solutions for the maintenance development and expansion of the National water infrastructure. More than 150 professionals participated in strategy workshops and heard from leaders from federal and state water management, the financial community and elected officials at the state and national level on the nation's water problems.

The symposium identified seven proposals which could assist to solve the water infrastructure problems. These proposals included several that impact the Clean Water Act and consideration of resources for achieving wastewater treatment results.

1. Establish and implement a capital budgeting process at all levels of government local, state, federal to provide the framework for a financing mechanism that transcends political timeframes.

2. Assess fees that are sufficient to finance cost of construction operation and maintenance and replacement of the water utility.

3. Reform federal and state laws and regulations to specify results, eliminating time consuming procedural requirements.

4. Designate a specific point in time by which the municipal wastewater treatment works construction grant program will be terminated.

A copy of the Executive Summary of the Symposium's Proceedings is appended to this statement.

In light of these observations and conclusions ACEC presents the following specific comments on issues related to proposed amendments to the Clean Water Act.

A. Authorizations

One of the roles that is best left central with the federal EPA is research. Despite increases in water knowledge over the last decade, refinement of water impacts especially as it relates to toxic chemicals is essential. ACEC strongly supports maintaining the research programs under Section 104 of the law and extension of the authorization at current levels through 1987.

Even more important is the maintenance of federal resources to the states during this period of increasing state acceptance of delegated responsibilities. Therefore ACEC supports the authorization of 106 for state grants at the current level of $75,000,000. The contention that Section 205(j) funds authorized in the 1981 amendments substitute for the proposed reduction of Section 106 in the FY 84 budget to $30 million is not only budgetary slight of hand but false economy.

ACEC also supports the reauthorization of Sections 112; 314c(2) and 517 through 1987.

B. Compliance Dates

ACEC supports the extension of the compliance dates. This is consistent with the necessity for predictable regulatory requirements for industry especially since the BAT regulations are only now being developed and promulgated. ACEC agrees that industry should be held to a three year limit to implement the performance specification once the regulation has been approved in final.

C. Ocean Waiver

ACEC believes that the current provisions of the law relating to special ocean discharge requirements are adequate to resolve this issue and that the requirement of a minimum of primary treatment will impact very few systems. However it is unclear what is meant by "other treatment to control pathogens" in some proposed amendments.

The real issue of ocean waiver is one which Congress created by opening up the eligibility of coastal communities to possible eligibility in the 1981 amendments. This possibility has given many applicants who were on a specific schedule to upgrade their systems an excuse or, at least, a dilemma of whether to proceed or not. The delay will increase the cost of these systems when most are eventually told they must meet secondary standards. It is an example of the kind of change which eliminates consistency and predictability in federal

requirements, except this time it was caused by Congressional action, not EPA or the states. ACEC, however, agrees with proposed language that limits special marine discharge requirements to deep offshore waters, not bays or estuaries.

D. Water Quality Standards

The proposed revision of the Water Quality Standards regulations by EPA has generated much controversy. ACEC has not taken a position on the revision but is looking at it closely. There is no doubt that the designation of uses by state politics and legislative fiat was often based more on a wish, than a reasonable and achievable environmental program. These early 70's use designations often resulted in technology effluent standards and permit limitations that not only were unrealistic but had little impact on total water quality when total discharge volumes were compared with total stream flows. Many states have since reconsidered these effluent limits in light of point source as compared with non-point total loading rates as part of their review of priority stream segments.

Better understanding of effluent limits and their contribution to water quality impacts have also led many states to consider more dynamic criteria for discharge permits, including seasonal variations, timed release and other use related limits. These environmentally sensitive and resource effective management policies allow states to administer priority stream segments based on real water quality considerations not theoretical models, the basis of standards in early federal

criteria. Water quality standards based on actual in-stream sampling is the way Congress intended the standards program to be managed.

Whatever impact the proposed regulatory revisions would have, the suggested amendments to Section 303(c) are not the way to deal with them. Freezing uses as of January 1, 1983, is not selective professional management based on careful state review and intensive water quality monitoring. It is a federal intrusion into the regulatory partnership which the act envisions.

Congressonal oversight of the proposed regulatory revisions is appropriate. But until such time as EPA has reviewed the more than 1,400 comments resulting from 11 public hearings and hundreds of pages of testimony, and has reissued revised regulations, Congressional action on limiting water quality standards flexibility is not appropriate. It is exactly the kind of inconsistency and unpredictability which has bedeviled the water quality improvement program since the law was based in 1972.

E. Pretreatment

ACEC supports and urges the Committee to include in any bill the amendments to the pretreatment sections of the law proposed by the large cities and states to permit a local program under specific conditions. The current program has not worked and has been exceeded in difficulty to promulgate only by the difficulty to implement. Categorical standards

will create standards too rigid in some cities and too lax in others. Many ACEC members have reported that the establishment of a workable effective pretreatment program is often the most frustrating component of designing a modern municipal wastewater treatment system. The proposed changes will allow the assurance of a program of national standards together with the flexibility to permit treatment systems with sufficient capability to adapt the program to local needs. The statement of the Administrator that a program of local flexibility will require EPA resources beyond current capability is an assertion that the agency should be required to justify in specifics.

F. Civil Penalties

No compelling case has been made that administrative penalties available to the administrator have been inadequate or in fact have been appropriately used against polluters, whether municipal or industrial. Since the penalty for deliberate or negligent polluters is currently $25,000/day in the law, it seems inequitable to have a maximum penalty of only $5,000 for permit violation, that is someone who has otherwise done all necessary to be in compliance but has not met the terms of the permit.

ACEC supports firmer enforcement. But better enforcement does not arise from higher penalties. It results from more aggressive environmental compliance policies, and the willingness to use them.

G. Partial NPDES Program Approval

ACEC has consistently supported maximum delegation of management of the Clean Water program to the states. Some states have refused to accept delegation because there are elements of the permit program they are unwilling to undertake. If the partial program will encourage delegation acceptance by more states, then the additional authority in the law to allow partial approval would be valuable and ACEC supports it.

H. Non-Point Sources

The impact of non-point sources on water quality is a fundamental issue to effluent criteria and water quality standards and also must be resolved. But because it is so much more diverse and geographically dispersed, it must be done with incentives rather than sanctions.

I. Common Law Remedies

Amendments proposed to date do not include a section on common law remedies. However, there has been sufficient discussion of such an amendment to warrant comment. Section 509 of the CWA gives adequate cause of action to any citizen for any decision by the Administrator or delegated authority acting for the Administrator. Industries and municipalities need some certainty that compliance with a permit is adequate protection against frivolous suits. The Clean Water Act sets up a system for controlling pollution and a series of interacting administrative authorities for resolving disputes. Bypassing that system by resort to a "federal common law" not

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only subverts the system established by P.L. 92-500 but also diverts resources from pollution control to defense of suits outside the system. ACEC urges the Committee to permit Illinois v. Milwaukee to rest as the Supreme Court decided it and not consider creation of any federal common law remedy.

J. Dredge and Fill Permits (Section 404)

The joint responsibility between EPA and the Army Corps of Engineers to administer permits for dredge and fill projects has caused more delays, cost overruns and inconsistent interpretation of environmental policy than any other section of the clean water act. ACEC supports efforts by the Corps of Engineers to reform the regulatory process for such permits and distinguish between projects of minimal environmental impact and local significance, and those which are of general or national concern. Just as the partnership between EPA, the Corps and the states has evolved, so should the regulatory partnership between the Corps, EPA and the states over such permits. Section 502(7), the definition of navigable waters, needs more specificity than "the waters of the United States".

Section 404, moreover, is not an effective way to protect wetlands. If Congress believes more authority to protect wetlands is needed, it should be done by separate statute.

K. Funding

Since the passage of the 1981 amendments to the CWA reauthorizing the Construction grants program through 1985, there has been much discussion about inadequacy of funding.

Yet the facts are that EPA has enjoyed three on-time appropriations in a row, with the result that obligations are behind past years.

This has been attributed to many factors -- the economy, state priority list revisions, inability to raise local matching funds. Nonetheless, ACEC believes that predictability and consistency are as important in funding as much as regulatory policy. Those that are on current priority lists and allocations schedules know they will receive funding. They also know that if the inflation remains low they will be able to build their system if the funding does not change.

Those that are not on the lists know they must seek other funding sources and our members tell us that many are doing just that. By changing the authorized level of Title II in advance of the expiration we change expectations. Even the hint of the possibility of raised authorizations may cause local elected officials to defer local financing options. Meanwhile, there is no parallel interest by appropriations committees or the Administration to raise the commitment of funds.

This program has experienced far too often the roller coaster funding effect. We urge this Subcommittee to focus on the refinements in Titles III and IV and leave Title II to next year after the completion of pending EPA, GAO and other ongoing studies of the success and future of the program.

We believe the positions are consistent with our criteria for the second decade of water pollution control -- completion, refinement and more effective resource management, particularly at the state and local levels. We appreciate the opportunity to present this statement and would be pleased to answer any questions.

Mr. ROE. Please proceed.

TESTIMONY OF RANDOLPH GOULDING, EXECUTIVE VICE PRESIDENT, JORDAN, JONES & GOULDING, ATLANTA, GA., AND CHAIRMAN, ENVIRONMENTAL COMMITTEE, AMERICAN CONSULTING ENGINEERS COUNCIL, ACCOMPANIED BY LAURENCE D. BORY, DIRECTOR, GOVERNMENTAL AFFAIRS, ACEC

Mr. GOULDING. Mr. Chairman, I do appreciate this opportunity to be with you, and I appreciate the promotion. I am really the executive vice president of the firm of Jordan, Jones & Goulding.

Mr. ROE. Well, we just made you president.

Mr. GOULDING. That is fine. My friend, Charlie Jones, probably would not appreciate that.

I have with me Laurence D. Bory. He is the director of governmental affairs with the American Consulting Engineers Council here in Washington, D.C.

We have filed with your secretary for the record our statement, and this morning I would basically like to highlight some points.

Mr. ROE. No objection, the statement will be included in full in the record.

Mr. GOULDING. The American Consulting Engineers Council is a national organization of some 3,800 private engineering firms. More than 900 of our member firms are actively engaged in the study, design, and engineering services during construction on the industrial and municipal waste water treatment plants.

Considerable progress has been made in cleaning up the rivers, streams, and coastal waters of the United States. However, the second decade of the effort must be directed to completion, refinement, and more effective resource management and coordination, mostly at the State and local government level.

Effective resource management and coordination is essential to all levels. To assure that plants continue to operate well requires professionally trained staff and adequate dedicated revenues. Many engineering firms whose practice was limited to design and construction management have now created operating divisions which run treatment plans for municipalities and industry under contract. But financial management is essential, too. There is not, and should not be, any long-term Federal funding assurance for operations or replacement. The utility-based concept for waste water treatment must be routinely accepted by communities, as it is for water treatment, electric generation, and telephone service.

ACEC strongly supports alternative sources of revenue to Federal grants. This is a consistent position with our support for the elimination of grants for planning and design in the 1981 amendments.

ACEC presents the following specific comments on issues related to proposed amendments to the Clean Water Act.

ACEC strongly supports maintaining the research programs under section 104 of the law and extension of the authorization at current levels through 1987.

ACEC supports the authorization of section 106 for State grants at the current level of $75 million.

ACEC supports the extension of the compliance dates. This is consistent with the necessity for predictable regulatory requirements for industry especially since the BAT regulations are only now being developed and promulgated. ACEC agrees that industry should be held to a 3-year limit to implement the performance specification once the regulation has been approved in final.

ACEC believes that the current provisions of the law relating to special ocean discharge requirements are adequate to resolve this issue.

The real issue of ocean waiver is one which Congress created by opening up the eligibility of coastal communities to possible eligibility in the 1981 amendments. This possibility has given many applicants who were on a specific schedule to upgrade their systems an excuse or, at least, a dilemma of whether to proceed or not. The delay will increase the cost of these systems when most are eventually told they must meet secondary standards. It is an example of the kind of change which eliminates consistency and predictability in Federal requirements, except this time it was caused by congressional action, not EPA or the States. ACEC, however, agrees with proposed language that limits special marine discharge requirements to deep offshore waters, not bays or estuaries.

Better understanding of effluent limits and their contribution to water quality impacts have also led many States to consider more dynamic criteria for discharge permits.

Water quality standards based on actual in-stream sampling is the way Congress intended the standards program to be managed.

Whatever impact the proposed regulatory revisions would have, the suggested amendments to section 303(c) are not the way to deal with them. Freezing uses as of January 1, 1983, is not selective professional management based on careful State review and intensive water quality monitoring. It is a Federal intrusion into the regulatory partnership which the act envisions.

Until such time as EPA has reviewed the more than 1,400 comments resulting from 11 public hearings and hundreds of pages of testimony, and had reissued revised regulations, congressional action on limiting water quality standards flexibility is not appropriate. In this case we understand that EPA and the appropriate congressional committees are nearing an agreement on this particular issue, I think as a result of some of these inputs.

Under the pretreatment section, ACEC supports and urges the committee to include in any bill the amendments to the pretreatment sections of the law proposed by the large cities and States to permit a local program under specific conditions. Categorical standards will create standards too rigid in some cities and too lax in others. The proposed changes will allow the assurance of a program of national standards together with the flexibility to permit treatment systems with sufficient capability to adapt the program to local needs.

On civil penalties, ACEC supports firmer enforcement. But better enforcement does not arise from higher penalties. It results from more aggressive environmental compliance policies, and the willingness to use them.

The impact of nonpoint sources on water quality is a fundamental issue to effluent criteria and water quality standards and also

must be resolved. But because it is so much more diverse and geographically dispersed, it must be done with incentives rather than sanctions.

Amendments proposed to date do not include a section on common law remedies. However, there has been sufficient discussion of such an amendment to warrant comment. The Clean Water Act sets up a system for controlling pollution and a series of interacting administrative authorities for resolving disputes. Bypassing that system by resort to a Federal common law not only subverts the system established by Public Law 92-500 but also diverts resources from pollution control to defense of suits outside the system. ACEC urges the committee to permit *Illinois* v. *Milwaukee* to rest as the Supreme Court decided it and not consider creation of any Federal common law remedy.

On dredge and fill permits, ACEC supports efforts by the Corps of Engineers to reform the regulatory process for such permits and distinguish between projects of minimal environmental impact and local significance, and those which are of general or national concern.

Section 404, moreover, is not an effective way to protect wetlands. If Congress believes more authority to protect wetlands is needed, it should be done by separate statute.

Since the passage of the 1981 amendments to the CWA reauthorizing the construction grants program through 1985, there has been much discussion about inadequacy of funding. Yet the facts are that EPA has enjoyed three on-time appropriations in a row, with the result that obligations are behind past years.

This has been attributed to many factors—the economy, State priority list revisions, inability to raise local matching funds. Nonetheless, ACEC believes that predictability and consistency are as important in funding as much as regulatory policy. Those that are on current priority lists and allocations schedules know they will receive funding. They also know that if the inflation remains low they will be able to build their system if the funding does not change.

Those that are not on the lists know they must seek other funding sources and our members tell us that many are doing just that. By changing the authorized level of title II in advance of the expiration, we change expectations. Even the hint of the possibility of raised authorizations may cause local elected officials to defer local financing options. Meanwhile, there is no parallel interest by Appropriations Committees or the administration to raise the commitment on funds.

This program has experienced far too often the roller coaster funding effect. We urge this subcommittee to focus on the refinements in titles III and IV and leave title II to next year after the completion of pending EPG, GAO, and other ongoing studies of the success and future of the program.

We believe these positions are consistent with our criteria for the second decade of water pollution control—completion, refinement and more effective resource management, particularly at the State and local levels. We appreciate the opportunity to present this statement and would be pleased to answer any questions.

Mr. ROE. We want to thank Mr. Goulding for your splendid testimony. Your organization testified before us before and we appreciated all your help over the years.

I have no questions personally.

The gentleman from Oregon.

Mr. SMITH. Thank you, Mr. Chairman.

Mr. Goulding, in your statement, you express the ACEC's position that industry should have 3 years from the date regulations are promulgated in final form to implement best available technology requirements.

Others have suggested that 3 years from the date of that permit has been issued is a more appropriate time period. Do you want to comment on that?

In other words, it is a question between the time the permit has been issued rather than the regulations are promulgated?

Mr. GOULDING. I think that in either case, you have to give industry the time to do the job. If you are going to tell them that they do not have to perform to BAT standards then it is necessary that they move on and satisfy those requirements. If they are in a situation where their permit is not going to allow them to discharge, it may be better to measure the time from the issuing of the permit.

Mr. SMITH. Obviously that would be a longer time.

Mr. GOULDING. That would be a longer time. This falls into some of our testimony that the States should have some opportunity to review their requirements.

Mr. SMITH. Would you like to respond to that in further order, we will be happy to hear that

Mr. GOULDING. All right.

Mr. BORY. Excuse me, Congressman. Our intention here was to indicate that, based upon the experience of our members working for industry, 3 years is more than an adequate amount of time to respond once a final decision has been made as to what the standards are. We did not distinguish between the regulation and the permit. Some of the proposed amendments talked about 1987 as a final date, and where we felt that the regulation had been issued earlier than 1984, that this should not be an additional amount of time for the industry to say, "Well, now we have till 1987 to comply." We believe they should proceed with all due speed and be required to finish within 3 years or whatever is the appropriate time at which they have the final standards.

Mr. SMITH. All right.

So your choice would be the time that the rules were promulgated in my question?

Mr. BORY. Like the former witness, I am afraid I am going to have to give a lawyer-like answer.

Mr. SMITH. Fine, I would be happy to hear from you, after you have thought about it.

Mr. BORY. We would be happy to submit an additional response, for the record, on that subject. We did not really address that specifically.

[Supplemental questions submitted by Representative Smith and responses received from Mr. Goulding follow:]

ACEC File #700.01
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american
consulting engineers
council

December 28, 1983

The Honorable Robert Roe
Chairman
Subcommittee on Water Resources
Committee on Public Works and Transportation
U.S. House of Representatives
2243 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Roe:

During the testimony of the American Consulting Engineers Council on November 1, 1983 on the reauthorization of the Clean Water Act, Mr. Smith asked us the following three questions.

1. Does ACEC's support of the extension of compliance deadlines for industrial Best Available Treatment (BAT) relate to completion of the EPA regulations or permits?

2. Can ACEC provide examples of states which established water quality use designations by statute or regulation?

3. Does ACEC support a loan program to replace the existing Construction Grants Program?

ACEC is pleased to respond to these questions and requests that this letter be made part of the hearing record.

1. Compliance Deadlines for BAT

In response to the consent decree in the NRDC case, EPA is currently developing final effluent guidelines for priority toxic pollutants by industry category. It is our understanding that virtually all industries support the three years after regulation compliance requirement. It has been ACEC's experience that planning, designing and constructing of industrial wastewater treatment process facilities can be accomplished far more quickly than municipal plants and within the three year compliance period. ACEC, therefore, supports the compliance schedule of three years after the issuance of final effluent discharge regulations.

2. State Water Quality Use Designations

ACEC was asked to provide additional detail to its statement concerning state legislative and administrative intent in establishing uses as a "wish". We have reviewed the statutes and regulations for states in various parts of the country. We have also conferred with the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). We have discovered that our intent and position on water quality uses was consistent with the position of the states but our choice of words was misleading.

In 1973, following passage of P.L. 92-500 the year before, the states were required to pass conforming legislation to permit them to participate in the funding under the Clean Water Act and to implement the enforcement requirements of law. The Council of State Governments developed a model statute (copy attached) to assist the states in complying with the federal requirements. Included within the General Powers section was a subsection (b):

> To administer and enforce the provisions of this Act and all rules, regulations, and orders effluent limitations water quality standards and permits promulgated, issued and effective hereunder.

In addition the section on Issuance of Permits included language "such discharge meets or will meet all applicable state and federal water quality standards and effluent limitations and all other requirements of this Act." The inclusion of "federal" meant that compliance was required with whichever standard or limitation was more stringent.

Many states passed laws very similar to the model statute. Soon after EPA developed national water quality standards, known often as the Red Book which were incorporated into state regulations in the absence of specific in-stream sampling data on which state standards could be based.

Enclosed is a copy of Florida's water quality standards and Georgia's water quality control regulations and standards. These are the two states which we mentioned in our original testimony. You will note that each state has listed specific stream segments by use of classifications which in turn determine effluent discharge criteria in those segments.

At a minimum these classifications were approximations when first issued. As the states and EPA have learned more about the interaction of pollutants and their impact on aquatic life and human uses, the criteria have been refined and adjusted. The states should have the authority as intended by Congress to make

such adjustments in stream segment classifications as they develop more in-stream studies and learn more about the actual impacts of non-point and point source discharges.

We reiterate our support for existing law and the water quality use regulations recently revised by EPA, to protect streams, while giving the states the flexibility to adjust standards.

3. ACEC position on a loan program to replace the existing grants program.

ACEC has supported reduced federal assistance for federal domestic programs. We supported the 1981 budget reductions; we supported the 1981 tax amendments, as an incentive to privatization. In 1981 we also supported reduction of the Construction Grants Program to $2.4 billion, elimination of federal funding for wastewater treatment, planning and design, and reduction of the federal share to 55 percent on such grants.

ACEC has, moreover, urged the House and Senate Public Works Committees to increase the local cost sharing for directly funded federal water projects.

The experience of our members has been that federal funding tends to increase the cost of projects, increase standards or design criteria, increase time of completion, increase non-construction requirements such as social objectives, auditing and selection, far beyond what occurs on similar projects that are non-federally funded. Stated succinctly, projects with federal dollars have many more federal strings. These strings have a high price--higher cost, delays, more regulations, more pollution entering the nation's waters.

From an economic point of view, ACEC and its members are also concerned that in a deficit economy additional public works federal expenditures increase the cost of local public and private borrowing for capital projects because of federal competition for borrowing in the capital market. In the last quarter of 1983, the U.S. government borrowed more than $65 billion to repay short term obligations as well as retire long-term bonds. This federal presence in the capital market does not encouarge local public works investment, since it tends to drive up interest rates on local bonds and other long-term investment.

The increased costs of grants, however, are not so high to discourage localities to refuse federal assistance. There are some which have done so, but they are relatively few. Without greater incentives, the difficulty, both economic and political, for local elected officials to choose to finance an investment as

great as a wastewater treatment system is insurmountable. Much of the reason, we believe, is access to capital at reasonable interest rates.

In November, the ACEC Governmental Affairs Committee reviewed the question of grants versus loans. Based on past positions, the Committee agreed that direct federal or federally guaranteed loans in replacment of grants are consistent with ACEC's goals of reduced project cost, delays and requirements. Any loan program, however, must be based on the following assumptions to get ACEC support.

1. A loan program would not increase total federal cost liability beyond current authorized levels.

2. Loans would encourage greater non-federal capital participation in projects.

3. Project costs, delays and federal requirements would be reduced and greater local initiative, responsibility and judgement would result.

4. Reliance on the private sector for technical, financial, and managerial services in the planning, design and construction and even perhaps operation of wastewater treatment plants would be increased.

5. A loan program would encourage continuity of current efforts under the authorized grant program and would expand predictability and consistency so that long-term local plans would continue. This means that a loan program if authorized would not take effect until after the current grant authorization ends in 1985.

Thank you for the opportunity to provide the Committee with this clarification and expansion of our testimony.

Sincerely yours,

Randolph Goulding

Randolph Goulding
Chairman
ACEC Environmental
Committee

RG/jr
Enclosure
cc: The Honorable Robert F. Smith

FLORIDA WATER QUALITY STANDARDS

(Florida Rules of the Department of Environmental Regulation, Chapter 17-3 — Water Quality Standards; Adopted October 28, 1970; Amended March 4, 1971; June 10, 1972; August 30, 1972; June 3, 1973; February 12, 1975; August 26, 1975; June 10, 1976; July 13, 1978; October 28, 1978; January 1, 1979; March 1, 1979; March 5, 1980; August 10, 1980; October 2, 1980; July 27, 1981)

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PART I. DECLARATION AND INTENT

17-3.011 FINDINGS, DECLARATION AND INTENT

(1) Article II, Section 7 of the Florida Constitution requires abatement of water pollution, and conservation and protection of Florida's natural resources and scenic beauty.

(2) Section 403.021, Florida Statutes, declares that the public policy of the state is to conserve the waters of the state and to protect, maintain, and improve the quality thereof for public water supplies, for the propagation of wildlife, fish and other aquatic life, and for domestic, agricultural, industrial, recreational, and other beneficial uses. It also prohibits the discharge of wastes into Florida waters without treatment necessary to protect those beneficial uses of the waters.

(3) Congress, in Section 101(a)(2) of the Federal Water Pollution Control Act, as amended, declares that achievement by July 1, 1983, of water quality sufficient for the protection and propagation of fish, shellfish, and wildlife, as well as for recreation in and on the water, is an interim goal to be sought wherever attainable. Congress further states, in Section 101(a)(3), that it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited.

(4) The present and future most beneficial uses of all waters of the State have been designated by the Department by means of the classification system set forth in this Chapter pursuant to 403.061(12), F.S. Water quality standards are established by the Department to protect these designated uses.

(5) Pollution which causes or contributes to new violations of water quality standards or to continuation of existing violations is harmful to the waters of this state and shall not be allowed.

(6) The quality of water which exceeds the minimum quality necessary to support the designated use of those waters shall be protected and enhanced.

(7) The quality of waters which is lower than that necessary to support the designated use of those waters shall be protected and enhanced provided, however, the Department shall not strive to abate natural conditions.

(8) The highest protection shall be afforded to Outstanding Florida Waters.

(9) Because activities outside the State sometimes cause pollution of Florida's waters, the Department will make every reasonable effort to have such pollution abated.

(10) Water quality standards apply equally to and shall be uniformly enforced in both the public and private sector.

(11) The Department finds that excessive nutrients (total nitrogen and total phosphorus) constitute one of the most severe water quality problems facing the state. It shall be the Department policy to limit the introduction of man-induced nutrients into waters of the State. Particular consideration shall be given to the protection from further nutrient enrichment of waters which are presently high in nutrient concentrations and sensitive to further nutrient loadings. Also, particular consideration shall be given to the protection from nutrient enrichment of those waters presently containing very low nutrient concentrations less than 0.3 milligrams per litre (mg/l) total nitrogen or less than 0.04 milligrams per litre (mg/l) total phosphorus.

(12) Public interest shall not be construed to mean only those activities conducted solely to provide facilities or benefits to the general public. Private activities conducted for private purposes may also be in the public interest.

(13) The Commission, recognizing the complexity of water quality management and the necessity to temper regulatory actions with the realities of technological progress and the social and economic wellbeing of peoples, urges, however, that there be no compromise where pollutional discharges constitute a valid hazard to human health.

(14) The Commission requests that the Secretary seek and use the best environmental information available when making decisions on the effects of chronically and acutely toxic substances and carcinogenic, mutagenic, and teratogenic substances. Additionally, the Secretary is requested to seek and encourage innovative research and developments in waste treatment alternatives that might better preserve environmental quality and/or at the same time reduce the energy and dollar costs of operation.

(15) The present and future most beneficial uses of groundwaters of the State shall be protected to insure the availability and utility of this invaluable resource. To achieve such protection, the groundwaters of the State are classified for the first time and appropriate specific water quality criteria for those classes are set forth in this Chapter.

(16) The criteria set forth in this Chapter are minimum levels which are necessary to protect the designated uses of a water body. It is the intent of this Commission that permit applicants should not be penalized due to a low detection limit associated with any specific criteria.

(17) In adoption of the Outstanding Florida Waters designated on July 13, 1978, the Commission has been assured by the Secretary that adequate public notice has been given that these waters were being considered for this designation and that public comment was solicited and considered in determining their designation.

(18) (a) The revisions made to Chapters 17-3 and 17-4 and the adoption of Chapter 17-6, F.A.C., are designed to protect the public health or welfare and to enhance the quality of waters of the State. They have been established taking into consideration the use and value of waters of the State for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation.

(b) Under the approach taken in the formulation of the rules adopted in this proceeding:

1. These revisions to Chapters 17-3, 17-4 and adoption of Chapter 17-6, F.A.C., are based upon the best scientific knowledge related to the protection of the various designated uses of waters of the state; and,

2. The mixing zone, zone of discharge, exception, exemption, and equitable allocation provisions are designed to provide an opportunity for the future consideration of factors relating to localized situations which could not adequately be addressed in this proceeding, including economic and social consequences, attainability, irretrievable conditions, natural background, and detectability.

(c) This is an even-handed and balanced approach to attainment of water quality objectives. The Commission has specifically recognized that the social, economic and environmental costs may, under certain special circumstances, outweigh the social, economic and environmental benefits if the numerical criteria are enforced statewide. It is for that reason that the Commission has provided for mixing zones, zones of discharge, exceptions, exemptions and other provisions in Chapters 17-3, 17-4, and 17-6. Furthermore, the continued availability of the moderating provisions is a vital factor providing a basis for the Commission's determination that water quality standards applicable to water classes in the rule are attainable taking into consideration environmental, technological, social, economic and institutional factors. The companion provisions of Chapters 17-4 and 17-6 approved simultaneously with these Water Quality Standards are incorporated herein by reference as a substantive part of the State's comprehensive program for the control, abatement and prevention of water pollution.

(d) Without the moderating provisions described in (b)2 above, the Commission would not have adopted the revisions described in (b)1 above nor determined that they are attainable as generally applicable water quality standards.

PART II DEFINITIONS

17-3.021 DEFINITIONS

(1) "Acute Toxicity" shall mean the presence of one or more substances or characteristics or components of substances in amounts which:

(a) are greater than one-third (1/3) of the amount lethal to 50% of the test organisms in 96 hours (96 hr LC_{50}) where the 96 hr LC_{50} is the lowest value which has been determined for a species significant to the indigenous aquatic community; or

(b) may reasonably be expected, based upon evaluation by generally accepted scientific methods, to produce effects equal to those of the concentration of the substance specified in (a) above.

(2) "Background" shall mean the condition of waters in the absence of the activity or discharge under consideration, based on the best scientific information available to the Department.

(3) "Chronic Toxicity" shall mean the presence of one or more substances or characteristics or components of substances in amounts which:

(a) are greater than one-twentieth (1/20) of the amount lethal to 50% of the test organisms in 96 hours (96 hr LC_{50}) where the 96 hr LC_{50} is the lowest value which has been determined for a species significant to the indigenous aquatic community; or

(b) may reasonably be expected, based upon evaluation by generally accepted scientific methods, to produce effects equal to those of the concentration of the substance specified in (a) above.

(4) "Commission" shall mean the Environmental Regulation Commission.

(5) "Compensation Point for Photosynthetic Activity" shall mean the depth at which one percent of the light intensity at the surface remains unabsorbed. This depth shall be computed as two divided by the extinction coefficient.

(6) "Department" shall mean the Department of Environmental Regulation.

(7) "Designated Use" shall mean the present and future most beneficial use of a body of water as designated by the Environmental Regulation Commission by means of the classification system contained in this Chapter.

(8) "Dominance" shall mean the presence of species or communities in greater numbers, biomass, or areal extent than competing species or communities, or a scientifically accepted tendency of species or communities to achieve such a status under existing or reasonably anticipated conditions.

(9) "Effluent Limitation" shall mean any restriction established by the Department on quantities, rates or concentrations of chemical, physical, biological or other constituents which are discharged from sources into waters of the state.

(10) "Exceptional Ecological Significance" shall mean that a water body is a part of an ecosystem of unusual value. The exceptional significance may be in unusual species, productivity, diversity, ecological relationships, ambient water quality, scientific or educational interest, or in other aspects of the ecosystem's setting or processes.

(11) "Exceptional Recreational Significance" shall mean unusual value as a resource for outdoor recreation activities. Outdoor recreation activities include, but are not limited to, fishing, boating, canoeing, water skiing, swimming, scuba diving, and nature observation. The exceptional significance may be in the intensity of present recreational usage, an unusual quality of recreational experience, or possessing a potential for unusual future recreational use or experience.

(12) "Extinction Coefficient" shall mean: $(1/D) \log 10 (S_0/S_D)$ where D is the length of the light path, S_0 is the light intensity at the surface or the transmission value of light through a distilled or deionized water sample of thickness D, and S_D is the light intensity at depth D or the transmission value of light through a sample of the water tested of thickness D. Light intensities or transmission values shall be measured using a cadmium sulfide photoreceptor or other device having a comparable spectral response.

(13) "Groundwater" means water beneath the surface of the ground, whether or not flowing through known and definite channels.

(14) "Natural Background" shall mean the condition of waters in the absence of man-induced alterations based on the best scientific information available to the Department.

(15) "Nuisance Species" shall mean species of flora or fauna whose presence in sufficient number, biomass, or areal extent may reasonably be expected to prevent, or unreasonably interfere with, a designated use of those waters.

(16) "Nursery Area of Indigenous Aquatic Life" shall mean any bed of the following aquatic plants, either in monoculture or mixed: Haloduie spp., Halephila Engelmannii, Potamogeton spp., (pondweed), Ruppia maritima, (widgeon-grass), Sagittaria spp. (arrowhead), Syringodium filiforme, (manatee-grass), Thallasia testudinum (turtle grass), or Vallisneria spp., (eel-grass), or any area used by the early-life stages, larvae and post-larvae, of aquatic life during the period of rapid growth and development into the juvenile stages.

(17) "Pollution" shall mean the presence in the outdoor atmosphere or waters of the state of any substances, contaminants, noise, or man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of air or water in quantities or levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property, including outdoor recreation.

(18) "Predominantly Fresh Waters" shall mean those surface waters in which the specific conductance of the water at the surface is less than 5,000 micromhos per centimeter.

(19) "Predominantly Marine Waters" shall mean those surface waters in which the specific conductance of the water at the surface is greater than or equal to 5,000 micromhos per centimeter.

(20) "Propagation" shall mean reproduction sufficient to maintain the species' role in its respective ecological community.

(21) "Secondary and Tertiary Canals" shall mean any wholly artificial canal or ditch which is behind a control structure and which is part of a water control system that is connected to the works (set forth in Section 373.086, F.S.) of a water management district created under Section 373.069, F.S., and that is permitted by such water management district pursuant to Section 373.103, Section 373.412, or Section 373.416, F.S.

(22) "Secretary" shall mean the Secretary of the Department of Environmental Regulation.

(23) "Shannon-Weaver Diversity Index" shall mean: negative summation (i-1 to S) of $(n/N) \log (N/N)$ where S is the number of species in a sample, N is the total number of individuals in species i.

(24) "Special Waters" shall mean water bodies designated in accordance with 17-3.041 by the Environmental Regulation Commission for inclusion in the Special Waters Category of Outstanding Florida Waters, as contained in Section 17-3.041, Florida Administrative Code. A Special Water may include all or part of any water body.

(25) "Surface Water" means water upon the surface of the earth, whether contained in bounds created naturally or artificially or diffused. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth's surface.

(26) "Waters" shall be as defined in Section 403.031(3), Florida Statutes.

(27) "Zone of Discharge" shall mean a volume underlying or surrounding the point of discharge within which an opportunity for the treatment, mixture or dispersion of wastes into receiving groundwaters has been afforded.

(28) "Zone of Mixing" shall mean a volume of surface water containing the point or area of discharge and within which an opportunity for the mixture of wastes with receiving surface waters has been afforded.

PART III WATER QUALITY CRITERIA

17-3.031 EXCEPTIONS FROM CRITERIA

(1) Upon petition of an affected person, permit or upon the initiation of the Department, applicant, after public notice and public hearing, and upon affirmative demonstration that, due to man-induced causes which cannot be controlled or abated with technology or management practices including zero discharge, or due

to natural causes, certain delineated portions of waters of the State do not meet particular water quality criteria contained in this Chapter, the Secretary may issue an order specifying an alternative ambient water quality criterion for each parameter and the portion of the waters for which such demonstration has been made.

(2) The petitioner shall affirmatively demonstrate those standards which the petitioner believes more appropriately apply to the waters for which the exception is sought, based upon relevant factors which include, but are not limited to, the designated use of the waters, the extent to which biota have adapted to the background, evidence regarding ecological stress, and adverse impacts on adjoining waters.

(3) The Secretary shall specify, by order, only those criteria which the Secretary determines to have been demonstrated by the preponderance of competent substantial evidence to be more appropriate.

(4) The Department shall modify permits of existing sources affected by the exception in a manner consistent with the Secretary's Order.

(5) Additional relief from criteria established by this Chapter may be provided through exemption pursuant to Section 17-4.243, Florida Administrative Code, or variances as provided for by Section 17-1.57, Florida Administrative Code.

17-3.041 SPECIAL PROTECTION, OUTSTANDING FLORIDA WATERS

(1) It shall be the Department policy to afford the highest protection to Outstanding Florida Waters (a complete listing of which is provided in subsection (3)) which generally include the following surface waters:

(a) waters in National Parks, Wildlife Refuges, and Wilderness Areas; and

(b) waters in the State Park System and Wilderness Areas; and

(c) waters in Environmentally Endangered Lands which have been acquired under Chapter 259, Florida Statutes; and

(d) rivers designated under the Florida Scenic and Wild Rivers Program or the National Wild and Scenic Rivers Act; and

(e) waters within National Seashores, National Marine Sanctuaries, National Estuarine Sanctuaries, and certain National Monuments; and

(f) waters in Aquatic Preserves, created under the provisions of Chapter 258, Florida Statutes; and

(g) waters within the Big Cypress National Freshwater preserve; and

(h) Special Waters as listed in 17-3.041(3)(g).

(2) Each water body demonstrated to be of exceptional recreational or ecological significance may be designated as a Special Water. The following procedure shall be used in designating a Special Water after the adoption of this rule:

(a) Rulemaking procedures pursuant to Chapter 120, F.S., and Chapter 17-1 shall be followed;

(b) At least one fact-finding workshop shall be held in the affected area;

(c) All local county or municipal governments and state legislators whose districts or jurisdictions include all or part of a special water shall be notified at least 60 days prior to the workshop in writing by the Secretary;

(d) A prominent public notice shall be placed in a newspaper of general circulation in the area of the proposed Special Water at least 60 days prior to the workshop;

(e) An economic impact analysis, consistent with Chapter 120, shall be prepared which provides a general analysis of the impact on growth and development including such factors as impacts on planned or potential industrial, agricultural, or other development or expansion; and

(f) The Commission may designate a water of the State as a Special Water after making a finding that the waters are of exceptional recreational or ecological significance and a finding that the environmental, social, and economic benefits of the action outweigh the environmental, social, and economic costs.

(3) The policy of this section shall be implemented through the permitting process pursuant to Section 17-4.242.

(4) Outstanding Florida Waters:

(a) Waters within National Parks

National Park — County

Everglades — Monroe/Dade/Collier

(b) Waters within Wildlife Refuges

Wildlife Refuge — County

Loxahatchee — Palm Beach
Pig Island — Gulf
St. Vicent — Franklin
Chassahowitzka — Citrus/Hernando
Anclote — Pasco
Pinellas — Pinellas
Okeefenokee (Florida Portion) — Baker
Anclote Island — Indian River
Pelican Island — Indian River
Hobe Sound — Martin
Passage Key — Manatee
Caloosahatchee — Lee
Lake Woodruff — Volusia
St. Mark's — Jefferson/Wakulla
National Key Deer — Monroe
Great White Heron — Monroe
Key West — Monroe
Pine Island — Lee
Matlacha Pass — Lee
J. N. "Ding" Darling — Lee
Island Bay — Charlotte
Cedar Keys — Levy
Chinsegut — Hernando
Merritt Island — Volusia/Brevard
Egmont Key — Pinellas
St. John's — Brevard

(c) Waters within State Parks or Recreation Areas

State Park or Recreation Area — County

Alfred B. Maclay State Ornamental Garden — Leon
Anastasia State Recreation Area — St. John's

State Park or Recreation Area — County

Bahia Honda State Recreation Area — Monroe
Basin Bayou State Recreation Area — Walton
Bill Baggs Cape Florida State Recreation Area — Dade
Blackwater River State Park — Santa Rosa
Blue Springs State Recreation Area — Volusia
Caladesi Island State Park — Pinellas
Chekika State Recreation Area — Dade
Collier-Seminole State Park — Collier
Dead Lakes State Recreation Area — Gulf
Eden State Ornamental Garden — Walton
Falling Waters State Recreation Area — Washington
Faver-Dykes State Park — St. John's
Flagler Beach State Recreation Area — Flagler
Florida Caverns State Park — Jackson
Fort Clinch State Park — Nassau
Fort Pickens State Park — Escambia
Fred Gannon Rocky Bayou State Recreation Area — Okaloosa
Grayton Beach State Recreation Area — Walton
Highlands Hammock State Park — Highlands/Hardee
Hillsborough River State Park — Hillsborough
Hontoon Island State Park — Volusia/Lake
Hugh Taylor Birch State Recreation Area — Broward
Ichetucknee Springs State Park — Columbia/Swuannees
John Pennekamp Coral Reef State Park — Monroe
John U. Lloyd Beach State Recreation Area — Broward
Jonathan Dickinson State Park — Martin
Lake Griffin State Recreation Area — Lake
Lake Kissimmee — Polk
Little Talbot Island State Park — Duval
Long Key State Recreation Area — Monroe
Manatee Springs State Park — Levy
Mike Roess Gold Head Branch State Park — Clay
Myakka River State Park — Manatee/Sarasota
Ochlockonee River State Park — Wakulla
O'Leno State Park — Alachua/Columbia
Oscar Scherer Recreation Area — Sarasota
Pahokee State Recreation Area — Palm Beach
Pepper Park State Recreation Area — St. Lucie
Ponce de Leon Springs State Recreation Area — Holmes/Walton
Ravine State Ornamental Garden — Putnam
St. Andrews State Recreation Area — Bay
Sebastian Inlet State Recreation Area — Hamilton/Madison/Swuannee
Three Rivers State Recreation Area — Jackson
T.H. Stone Memorial St. Joseph Peninsula State Park — Gulf
Tomoka State Park — Volusia
Torreya State Park — Liberty
Washington Oaks State Ornamental Garden — Flagler
Wekiva Springs State Park — Orange/Seminole

(d) Waters within Environmentally Endangered Lands which have been Purchased by the State

Environmentally Endangered Lands — County

Weedon Island — Pinellas
Fakahatchee Strand/Big Cypress Bend — Collier
Volusia Recharge Area — Volusia
River Rise (McLeod Ranch) — Osceola

Environmentally Endangered Lands — County

San Felasco Hammock — Alachua
Three Lakes Ranch — Osceola
Lower Apalachiocola River Tracts — Franklin/Gulf
Palm Beach County Everglades Tract — Palm Beach
Paynes Prairie State Preserve Addition — Alachua
Lower Wekiva River Corridor — Lake/Seminole
Cayo Costa North Captiva Islands — Lee
Charlotte Harbor — Charlotte
Big Cypress National Preserve — Collier/Dade/Monroe
Tosahatchee State Preserve — Orange

(e) Waters Within National Seashores

National Seashores — County

Gulf Islands — Escambia/Santa Rosa
Canaveral — Brevard/Volusia

(f) Water Within State Aquatic Preserves

Aquatic Preserves — County

Cape Romano — Ten Thousand Islands — Collier
Nassau River — St. Johns River Marshes — Nassau/Duval
St. Joseph Bay — Gulf
Apalachicola Bay — Franklin
North Fork, St. Lucie — St. Lucie/Martin
Intracoastal Waters-Jensen Beach to Jupiter Inlet — Martin/Palm Beach
Loxahatchee River — Lake Worth Creek — Martin/Palm Beach
Fort Clinch State Park — Nassau
Cockroach Bay — Hillsborough
Boca Ciega Bay — Pinellas
Caladesi Island — Pinellas
St. Martin's Marsh — Citrus
Alligator Harbor — Franklin
Biscayne Bay — Dade/Monroe
Estero Bay — Lee
Pellicer Creek — St. John's/Flagler
Tomoka Marsh — Volusia/Flagler
Compon Bight — Monroe
Lignumvitae Key — Monroe
Cape Haze — Gasparilla Sound — Charlotte/Lee
Pine Island Sound — Lee
Matlacha Pass — Lee
Yellow River Marsh — Santa Rosa
Fort Pickens State Park — Escambia
Lake Jackson — Leon
St. Andrew's State Park — Bay
Rocky Bayou State Park — Okaloosa
Mosquito Lagoon — Volusia/Brevard
Banana River — Brevard
Indian River Malabar to Sebastian — Brehard/Indian River
Indian River Vero Beach to Ft. Pierce — Indian River/St. Lucie
Pinellas County — Pinellas

(g) Special Waters

Special Water

Ochlockonee River
Wakulla River

St. Mark's River — except that part between Rattlesnake Branch and the confluence of the St. Mark's and Wakulla Rivers.
Wacissa River
Aucilla River
Apalachicola River south of northern Gulf County Line
Chipola River
Shoal River
Choctawhatchee River
Blackwater River
Perdido River
Suwannee River

(h) Waters Within National Monuments

National Monuments — County

Biscayne — Dade

(i) Waters Within National Marine Sanctuaries

Marine Sanctuaries — County

Key Largo Coral Reef — Dade

(j) Waters Within National Estuarine Sanctuaries

National Estuarine Sanctuaries — County

Rookery Bay — Collier County

17-3.05 THERMAL SURFACE WATER CRITERIA

(1) All discharges or proposed discharges of heated water into receiving bodies of water (RBW) which are controlled by the state shall be subjected to a thorough study to assess the consequences of the discharge upon the environment. The state shall be divided into two general climatological zones: Peninsular Florida, which varies from tropical in nature to temperate but is modified by the peninsular configuration and is the area south of latitude 30 degrees N (excluding Gulf and Franklin Counties); and Northern Florida which is temperate and continental and is the area above latitude 30 degrees N plus the portions of Guld and Franklin Counties which lie below 30 degrees N.

(a) Heated water discharges existing on July 1, 1972:

1. Shall not increase the temperature of the RBW so as to cause substantial damage or harm to the aquatic life or vegetation therein or interfere with beneficial uses assigned to the RBW.

2. Shall be monitored by the discharge to ensure compliance with this rule, and

3. If the Department, pursuant to notice and opportunity for hearing, finds by preponderant evidence that a discharge has caused substantial damage, it may require conversion of such discharge to offstream cooling or approved alternate methods. In making determinations regarding such conversions, the Department may consider:

a. The nature and extent of the existing damage;

b. The projected lifetime of the existing discharge;

c. Any adverse economic and environmental (including non-water quality) impacts which would result from such conversion, and

d. Such other factors as may be appropriate.

(b) Heated water sources proposed for future discharges into RBW controlled by the state shall not increase the water temperature by more than the monthly temperature limits prescribed for the particular type and location of the RBW. New sources shall include all expansions, modifications, alterations, replacements, or repairs which result in an increased output of ten percent (10%) or more of the level of energy production which existed on the date this rule became effective. Water temperatures shall be measured by procedures approved by the Florida Department of Pollution Control (DPC). In all cases where a temperature rise above ambient is allowed and a maximum RBW temperature is also prescribed, the lower of the two limitations shall be the control temperature.

(c) Definitions.

(i) Ambient (natural) temperature of a RBW is the existing temperature of the receiving water at a location which is unaffected by manmade thermal discharges and a location which is also of a depth and exposure to winds and currents which typify the most environmentally stable portions of the RBW.

(ii) Coastal waters shall be all waters in the state which are not classified as fresh waters or as open waters.

(iii) A cooling pond is a body of water enclosed by natural or constructed restraints which has been approved by the Florida DPC for purposes of controlling heat dissipation from thermal discharges.

(iv) An existing heat source is any thermal discharge (a) which is presently taking place, or (b) which is under construction or for which a construction or operating permit has been issued prior to the effective date of this rule.

(v) Fresh waters shall be all waters of the state which are contained in lakes and ponds, or are in flowing streams above the zone in which tidal actions influence the salinity of the water and where the concentration of chloride ions is normally less than 1500 mg/l.

(vi) Open waters shall be waters in the state extending seaward from the most seaward 18-foot depth contour line (three-fathom bottom depth contour) which is offshore from any island; exposed or submerged bar or reef, or mouth of any embayment or estuary which is narrowed by headlands. Contour lines shall be determined from Coast and Geodetic Survey Charts.

(vii) The point of discharge (POD) for a heated water dicharge shall be primarily that point at which the effluent physically leaves its carrying conduit (open or closed), and discharges into the waters of the state, or, in the event it is not practicable to measure temperature at the end of the discharge conduit, a specific point designated by the Florida Department of Pollution Control for that particular thermal discharge.

(viii) Heated water discharges are the effluents from commercial or industrial activities or processes in which water is used for the purpose of transporting waste heat, and which constitute heat sources of one million British Thermal Units per hour (1,000,000 BTU/HR.), or greater.

(ix) Blowdown shall mean the minimum discharge of recirculating cooling water for the purpose of discharging materials contained in the water, the further buildup of

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which would cause concentrations in amounts exceeding limits established by best engineering practice.

(x) Recirculating cooling water shall mean water which is used for the purpose of removing waste heat and then passed through a cooling system for the purpose of removing such heat from the water and then, except for blowdown, is used again to remove waste heat.

(d) Monthly and Maximum Temperature Limits

(i) Fresh Waters — Heated water with a temperature at the POD more than 5 degrees F higher than the ambient (natural) temperature of any stream shall not be discharged into such stream. At all times under all conditions of stream flow the discharge temperature shall be controlled so that at least two-thirds (2/3) of the width of the stream's surface remains at ambient (natural) temperature. Further, no more than one-fourth (1/4) of the cross-section of the stream at a traverse perpendicular to the flow shall be heated by the discharge. Heated water with a temperature at the POD more than 3 degrees F higher than the ambient (natural) temperature of any lake or reservior shall not be discharged into such lake or reservoir. Further, no heated water with a temperature above 90 degrees F shall be discharged into any fresh waters in Northern Florida regardless of the ambient temperature of the RBW. In Peninsular Florida, heated waters above 92 degrees F shall not be discharged into fresh waters.

(ii) Coastal Waters — Heated water with a temperature at the POD more than 2 degrees F higher than the ambient (natural) temperature of the RBW shall not be discharged into coastal waters in any zone during the months of June, July, August, and September. During the remainder of the year, heated water with a temperature at the POD more than 4 degrees F higher than the ambient (natural) temperature of the RBW shall not be discharged into coastal waters in any zone. In addition, during June, July, August, and September, no heated water with a temperature above 92 degrees F shall be discharged into coastal waters. Further, no heated water with a temperature above 90 degrees F shall be discharged into coastal waters during the period October thru May.

(iii) Open Waters — Heated water with a temperature at the POD up to 17 degrees F above ambient (natural) temperature of the RBW may be discharged from an open or closed conduit into open waters under the following restraints: The surface temperature of the RBW shall not be raised to more than 97 degrees F and the POD must be sufficient distance offshore to ensure that the adjacent coastal waters are not heated beyond the temperatures permitted in such waters.

(iv) Cooling Ponds — The temperature for heated water discharged from a cooling pond shall be measured at the POD from the pond, and the temperature limitation shall be that specified for the RBW.

(e) General.

(i) Daily seasonal temperature variations that were normal to the RBW before the addition of heat from other than natural causes shall be maintained.

(ii) Recapitulation of temperature limitations prescribed above:

ZONE	STREAMS	LAKES	COASTAL		OPEN
			SUMMER	REMAINDER	
NORTH.	90°F Max. AM +5°F	90°F Max. AM +3°F	92°F. Max. AM +2°F	90°F Max. AM +4°F	97°F Max. AM +17°
PENIN.	92°F Max AM +5°F	92°F Max. AM +3°F	92°F Max. AM +2°F	90°F Max. AM +4°F.	97°F Max. AM +17°F

(f) Upon application on a case by case basis, the Department may establish a zone of mixing beyond the POD to afford a reasonable opportunity for dilution and mixture of heated water discharges with the RBW, in the following manner:

(i) Zones of mixing for thermal discharges from non-recirculated cooling water systems and process water systems of new sources shall be allowed if supported by a demonstration, as provided in section 316(a), Public Law 92-500 and regulations promulgated thereunder, including 40 C.F.R. Part 122, by an applicant that the proposed mixing zone will assure the protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife in and on the body of water into which the discharge is to be made and such demonstration has not been rebutted. It is the intent of the board that to the extent practicable, proceedings under this provision should be conducted jointly with proceedings before the federal government under section 316(a), Public Law 92-500.

(ii) Zones of mixing for blowdown discharges from recirculated cooling water systems, and for discharges from non-recirculated cooling water systems of existing sources, shall be established on the basis of the physical and biological characteristics of the RBW.

(iii) When a zone of mixing is established pursuant to this subsection 17-3.05(1)(f), Florida Administrative Code, any otherwise applicable temperature limitations contained in section 17-3.05(1), Florida Administrative Code, shall be met at its boundary; however, the Department may also establish maximum numerical temperature limits to be measured at the POD and to be used in lieu of the general temperature limits in section 17-3.05(1), Florida Administrative Code, to determine compliance by the discharge with the established mixing zone and the temperature limits in section 17-3.05(1), Florida Administrative Code.

17-3.051 MINIMUM CRITERIA FOR ALL WATERS AT ALL TIMES AND ALL PLACES

All waters of the State shall at all places and at all times be free from:

(1) Domestic, industrial, agricultural, or other man-induced non-thermal components of discharges which,

alone or in combination with other substances or in combination with other components of discharges (whether thermal or non-thermal):

(a) Settle to form putrescent deposits or otherwise create a nuisance; or

(b) Float as debris, scum, oil, or other matter in such amounts as to form nuisances; or

(c) Produce color, odor, taste, turbidity, or other conditions in such degree as to create a nuisance; or

(d) Are acutely toxic; or

(e) Are present in concentrations which are carcinogenic, mutagenic, or teratogenic to human beings or to significant, locally occurring, wildlife or aquatic species; or

(f) Pose a serious danger to the public health, safety, or welfare.

(2) Thermal components of discharges which, alone, or in combination with other discharges or components of discharges (whether thermal or non-thermal):

(a) Produce conditions so as to create a nuisance; or

(b) Do not comply with applicable provisions of Subsection 17-3.05(1), F.A.C.

17-3.061 SURFACE WATERS: GENERAL CRITERIA

(1) The criteria of surface water quality hereinafter provided shall be applied to all surface waters except within zones of mixing.

(2) A violation of any of the following surface water quality criteria constitutes pollution. Additional, more stringent or alternative criteria than indicated in this paragraph may, however, be specified for individual classes of water under Sections 17-3.091, 17-3.111, 17-3.121, 17-3.131, and 17-3.141 of this Chapter.

(a) Arsenic — shall not exceed 0.05 milligrams per liter (mg/l).

(b) BOD — shall not be increased to exceed values which would cause dissolved oxygen to be depressed below the limit established for each class and, in no case shall it be great enough to produce nuisance conditions.

(c) Chlorides — in predominantly marine waters, the chloride content shall not be increased more than ten percent (10%) above normal background chloride content. Normal daily and seasonal fluctuations in chloride levels shall be maintained.

(d) Chromium — shall not exceed 0.50 milligrams (mg)/l hexavalent or 1.0 milligrams (mg)/l total chromium in effluent discharge and shall not exceed 0.05 milligrams (mg)/l total chromium after reasonable mixing in the receiving water.

(e) Copper — shall not exceed 0.5 milligrams (mg)/l.

(f) Detergents — shall not exceed 0.5 milligrams (mg)/l.

(g) Fluorides — shall not exceed 10.0 milligrams (mg)/l as fluoride ion.

(h) Lead — shall not exceed 0.05 milligrams (mg)/l.

(i) Nutrients — The discharge of nutrients shall continue to be limited as needed to prevent violations of other standards contained in this Chapter. Man-induced nutrient enrichment (total nitrogen or total phosphorus) shall be considered degradation in relation to the provisions of Section 3.041 of this Chapter and Section 17-4.242.

(j) Oils and Greases:

1. Dissolved or emulsified oils and greases shall not exceed 5.0 milligrams (mg)/l.

2. No undissolved oil, or visible oil defined as iridescence, shall be present to cause taste or odor, or otherwise interfere with the beneficial uses of waters.

(k) pH — pH of receiving waters shall not be caused to vary more than one (1.0) unit above or below natural background pH of the water; the lower value shall not be less than six (6.0) and the upper value shall not be more than eight and one half (8.5).

(l) Phenolic compounds as listed — Chlorinated phenols including trichlorophenols; chlorinated creosols, 2-chlorophenol; 2, 4 - dichlorophenol and pentachlorophenol; 2, 4 - dinitrophenol; phenol — shall not exceed 1.0 micrograms per litre (ug/l) unless higher values are shown not to be chronically toxic. Such higher values shall be approved in writing by the Secretary. Phenolic compounds other than those produced by the natural decay of plant material, named or unnamed, shall not taint the flesh of edible fish or shellfish or produce objectionable taste or odor in a drinking water supply.

(m) Radioactive Substances:

1. Combined radium 226 and 228 — shall not exceed five picocuries per liter.

2. Gross alpha particle activity including radium 226, but excluding radon and uranium — shall not exceed fifteen picocuries per liter.

(n) Specific Conductance — shall not be increased more than 100% above background levels or to a maximum level of 500 micromhos per centimeter in those surface waters in which the specific conductance of the water at the surface is less than 500 micromhos per centimeter; and shall not be increased more than 50% above background level or to a maximum level of 5,000 micromhos per centimeter for predominantly freshwaters as defined in Section 17-3.021 in which the specific conductance of the water at the surface is equal to or greater than 500 micromhos per centimeter.

(o) Substances in concentrations which injure, are chronically toxic to, or produce adverse physiological or behavioral response in humans, animals, or plants — none shall be present.

(p) Substances in concentrations which result in the dominance of nuisance species — none shall be present.

(q) Turbidity — shall not exceed fifty (50) Jackson Units above natural background as related to a standard candle turbidimeter.

(r) Zinc — shall not exceed 1.0 milligrams (mg)/l.

(3) Dissolved Oxygen: Notwithstanding the specific numerical criteria for individual classes of water under Subsections 17-3.091(13), 17-3.111(11), 17-3.121(14), 17-3.131(6), and 17-3.141(2), Florida Adminsitrative Code, the Department recognizes that, in certain bodies of water or segments of water bodies, the dissolved oxygen may be below the applicable criteria at certain times due to man-induced causes which cannot be controlled or abated with technology or management practices including zero discharge, or due to natural background conditions. Under such conditions, the background levels

shall be the criteria; however, daily and seasonal fluctuations shall be maintained. This level may be determined only after public notice and opportunity for public hearing, and consideration of the factors listed in Subsection 17-3.031(2), Florida Administrative Code, and specified in a Department permit; or the level may be determined in accordance with 17-3.031, Florida Administrative Code.

17-3.071 GROUNDWATERS—GENERAL CRITERIA

(1) The groundwater quality standards in this Chapter contain water quality criteria which are applicable to each classification of receiving groundwater outside of a zone of discharge established pursuant to Section 17-4.245.

(2) In addition to any technology-based groundwater effluent limitations required by Department rule, the Department may also specify water quality-based effluent limitations to assure that water quality criteria will be met.

(3) The groundwater quality criteria specified in Sections 17-3.101 or 17-3.151 shall be applied to all groundwaters except within zones of discharge.

(4) A violation of any groundwater criterion contained in Sections 17-3.101 or 17-3.151 constitutes pollution.

(5) These groundwater criteria and other provisions relating to groundwater are an initial but necessary step by the Department in a field in which there exists limited knowledge. In an effort to further refine the state's groundwater quality policy, there is hereby created a Groundwater Quality Task Force which shall meet regularly and report findings and suggestions regarding these groundwater quality standards and associated rule provisions. Said Task Force shall be composed of sixteen persons, with one representative from each of the five water management districts, five representatives from affected industry, five from environmental groups or other groups the Chairman of the Commission shall elect to invite to participate, and one representative from the Department who shall act as Chairman of that Task Force. In developing the proposed revisions, the Task Force shall consider the various geologic and hydrologic provinces of the state; the most beneficial uses of the groundwaters of the state; criteria necessary to protect those uses; and the integration of groundwater quality and quantity management. Said Task Force shall provide written status reports to the Commission quarterly and a final report no later than September 1, 1979. No later than January 31, 1980 the Commission shall consider at a public hearing any proposed revisions.

(6) The Department must attempt to protect the most beneficial uses of the groundwaters of the state to assure continued availability of this invaluable resource. To achieve the necessary protection, specific standards reflecting these beneficial uses are set forth in these Chapters. However, recognizing the complexities and concerns of implementing groundwater standards, the Commission shall review the groundwater standards contained herein, together with the report of the Task Force established pursuant to (5) above at a public hearing no later than January 31, 1980. Unless the Commission affirmatively determines that the groundwater standards remain appropriate, or amends them as it deems necessary, all such groundwater standards shall be repealed effective January 31, 1980. In the event of repeal of groundwater standards pursuant to this subsection, any regulations applicable to groundwaters at the date of the adoption of this section shall apply. Permits issued prior to January 31, 1980 in accordance with such groundwater standards shall remain in full force and effect until such permits expire, are modified, or revoked in accordance with applicable rules and statutes.

17-3.081 CLASSIFICATION OF WATERS, USAGE, RECLASSIFICATION

(1) All waters of the State have been classified according to designated uses as follows:

CLASS I-A — Potable Water Supplies — Surface waters

CLASS I-B — Potable and Agricultural Water Supplies and Storage — Groundwaters

CLASS II — Shellfish Propagation or Harvesting — Surface waters

CLASS III — Recreation, Propagation and Management of Fish and Wildlife — Surface waters

CLASS IV — Agricultural Water Supplies — Surface waters

CLASS V-A — Navigation, Utility and Industrial Use — Surface waters

CLASS V-B — Freshwater Storage, Utility and Industrial Use — Groundwaters

(2) Classification of a water body according to a particular designated use or uses does not preclude utilization of the water for other purposes.

(3) The specific water quality criteria corresponding to each water classification are listed in Sections 17-3.091 to 17-3.151, inclusive.

(4) Water quality classifications are arranged in order of the degree of protection required, with Class I water having generally the most stringent water quality criteria and Class V the least.

(5) Criteria applicable to a classification are designed to maintain the minimum conditions necessary to assure the suitability of water for the designated use of the classification. In addition, applicable criteria are generally adequate to maintain minimum conditions required for the designated uses of less stringently regulated classifications. Therefore, unless clearly inconsistent with the criteria applicable, the designated uses of less stringently regulated classifications shall be deemed to be included within the designated uses of more stringently regulated classifications.

(6) Any person regulated by the Department or having a substantial interest in this Chapter may seek reclassification of waters of the State by filing a petition with the Secretary in the form required by Section 17-1.24, F.A.C.

(7) A petition for reclassification shall reference and be accompanied by the information necessary to support the affirmative finding required in this section to support the proposed reclassification.

(8) All reclassifications of waters of the State shall be adopted, after public notice and public hearing, only upon an affirmative finding by the Environmental Regulation Commission that:

(a) The proposed reclassification will establish the present and future most beneficial use of the waters; and

(b) Such a reclassification is clearly in the public interest.

(9) Reclassification of waters of the State which establishes more stringent criteria than presently established by this Chapter shall be adopted, only upon additional affirmative finding by the Environmental Regulation Commission that the proposed designated use is attainable, upon consideration of environmental, technological, social, economic, and institutional factors.

17-3.091 CRITERIA: CLASS I-A WATERS — POTABLE WATER SUPPLIES — SURFACE WATERS

The criteria listed below are for surface waters designated for use as a potable supply. The standards contained in Sections 17-3.051 and 17-3.061 shall apply to all waters of this class, unless more stringent levels are specified below. The following criteria are to be applied except within zones of mixing:

(1) Alkalinity — shall not be depressed below 20 milligrams per litre ((mg)/l) as $CaCO_3$.

(2) Ammonia (un-ionized) — shall not exceed 0.02 milligrams (mg)/l.

(3) Bacteriological Quality — Coliform group not to exceed 1,000 per 100 milliliters as a monthly average, using either most probable number (MPN) or membrane filter (MF) counts; nor to exceed 1,000 per 100 milliliters in more than 20% of the samples examined during any month; nor exceed 2,400 per 100 milliliters (MPN or MF count) at any time. Based on a minimum of five samples taken over a 30-day period, the fecal coliform bacterial level shall not exceed 200 per 100 milliliters as computed by the log mean, nor shall more than 10% of the total samples taken during any 30-day period exceed 400 per 100 milliliters.

(4) Barium — shall not exceed 1 milligrams (mg)/l.

(5) Beryllium — shall not exceed 0.11 milligrams (mg)/l in waters with a hardness equal to or less than 150 (in milligrams (mg)/l of $CaCO_3$), and shall not exceed 1.10 milligrams (mg)/l in harder waters.

(6) Biological Integrity — the Shannon-Weaver diversity index of benthic macroinvertebrates shall not be reduced to less than 75% of background levels as measured using organisms retained by a U.S. Standard No. 30 sieve and collected and composited from a minimum of three Hester-Dendy type artificial substrate samplers of 0.10 to 0.15 square meters area, each incubated for a period of four weeks.

(7) Cadmium — shall not exceed 0.8 micrograms per litre (μg)/l) in a water with a hardness (in milligrams (mg)/l of $CaCO_3$) equal to or less than 150, and shall not exceed 1.2 micrograms (μg)/l in harder waters.

(8) Chlorides — shall not exceed two hundred fifty (250) milligrams (mg)/l.

(9) Chlorine (total residual) — shall not exceed 0.01 milligrams (mg)/l.

(10) Copper — shall not exceed 30 micrograms (μg)/l.

(11) Cyanide — shall not exceed 5.0 micrograms (μg)/l.

(12) Dissolved Gases — shall not exceed 110% of the saturation value for gases at the existing atmospheric and hydrostatic pressure.

(13) Dissolved Oxygen — shall not be less than 5 milligrams (mg)/l. Normal daily and seasonal fluctations above this level shall be maintained.

(14) Dissolved Solids — not to exceed five hundred (500) milligrams (mg)/l as a monthly average or exceed one thousand (1,000) milligrams (mg)/l at any time.

(15) Fluorides — shall not exceed 1.5 milligrams (mg)/l.

(16) Iron — shall not exceed 0.3 milligrams (mg)/l.

(17) Lead — shall not exceed .03 milligrams (mg)/l.

(18) Mercury — shall not exceed 0.2 micrograms (μg)/l.

(19) Nickel — shall not exceed 0.1 milligrams (mg)/l.

(20) Nitrate — shall not exceed 10 milligrams (mg)/l as N or that concentration determined in (21) below.

(21) Nutrients — In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora and fauna.

(22) Pesticides and Herbicides.

(a) Aldrin plus Dieldrin — shall not exceed 0.003 micrograms (μg)/l.

(b) Chlordane — shall not exceed 0.01 micrograms (μg)/l.

(c) 2-4-D — shall not exceed 100 micrograms (μg)/l.

(d) 2,4,5-TP — shall not exceed 10 micrograms (μg)/l.

(e) DDT — shall not exceed 0.001 micrograms (μg)/l.

(f) Demeton — shall not exceed 0.1 micrograms (μg)/l.

(g) Endosulfan — shall not exceed 0.003 micrograms (μg)/l.

(h) Endrin — shall not exceed 0.004 micrograms (μg)/l.

(i) Guthion — shall not exceed 0.01 micrograms (μg)/l.

(j) Heptachlor — shall not exceed 0.001 micrograms (μg)/l.

(k) Lindane — shall not exceed 0.01 micrograms (μg)/l.

(l) Malathion — shall not exceed 0.1 micrograms (μg)/l.

(m) Methoxychlor — shall not exceed 0.03 micrograms (μg)/l.

(n) Mirex — shall not exceed 0.001 micrograms (μg)/l.

(o) Parathion — shall not exceed 0.04 micrograms (μg)/l.

(p) Toxaphene — shall not exceed 0.005 micrograms (μg)/l.

(23) Phthalate Esters — shall not exceed 3.0 micrograms (μg)/l.

(24) Polychlorinated Biphenyls — shall not exceed 0.001 micrograms (μg)/l.

(25) Selenium — shall not exceed 0.01 milligrams (mg)/l.

(26) Silver — shall not exceed 0.07 micrograms (μg)/l.

(27) Transparency — the depth of the compensation point for photosynthetic activity shall not be reduced by more than 10% as compared to the natural background value.

(28) Zinc — shall not exceed 0.03 milligrams (mg)/l.

17-3.101 CRITERIA: CLASS I-B WATERS — POTABLE AND AGRICULTURAL WATER SUPPLIES AND STORAGE — GROUNDWATERS

As stated in Section 17-3.161, all groundwaters with total dissolved solids levels of less than 10,000 milligrams per litre ((mg)/l) are classified as Class I-B. The criteria contained in Section 17-3.071 apply to all waters in this classification unless more stringent levels are specified below. The criteria contained in Section 17-3.051(1) and the following criteria are to be applied except within zones of discharge:

(1) Arsenic — shall not exceed 0.05 milligrams (mg)/l.

(2) Barium — shall not exceed 1.0 milligrams (mg)/l.

(3) Cadmium — shall not exceed 0.01 milligrams (mg)/l.

(4) Chromium — shall not exceed 0.05 milligrams (mg)/l.

(5) Endrin — shall not exceed 0.2 micrograms per litre (μg)/l.

(6) Fluorides — shall not exceed 1.5 milligrams (mg)/l unless background information indicates prior existence of higher levels than 1.5 milligrams (mg)/l, in which case those higher levels are not to be exceeded.

(7) Lindane — shall not exceed 0.004 milligrams (mg)/l.

(8) Lead — shall not exceed 0.05 milligrams (mg)/l.

(9) Mercury — shall not exceed 0.002 milligrams (mg)/l.

(10) Methoxychlor — shall not exceed 0.1 milligrams (mg)/l.

(11) Nitrate — shall not exceed 10.0 milligrams (mg)/l as N.

(12) Radioactive Substances:

(a) Combined radium 226 and 288 — shall not exceed five picocuries per liter.

(b) Gross alpha particle activity including radium 226, but excluding radon and uranium — shall not exceed fifteen picocuries per liter.

(13) Selenium — shall not exceed 0.01 milligrams (mg)/l.

(14) Silver — shall not exceed 0.05 milligrams (mg)/l.

(15) Substances shall not be present in concentrations which injure, are chronically toxic to, or produce significant adverse physiological or behavioral responses in humans, animals, or plants.

(16) 2,4-D — shall not exceed 0.1 milligrams (mg)/l.

(17) 2,4,5-TP — shall not exceed 0.01 milligrams (mg)/l.

(18) Toxaphene — shall not exceed 0.005 milligrams (μg)/l.

17-3.111 CRITERIA: CLASS II WATERS — SHELLFISH PROPAGATION OR HARVESTING — SURFACE WATERS

The criteria listed below are for surface waters classified as Class II. The standards contained in Section 17-3.051 and 17-3.061 also shall apply to all waters of this class, unless additional or more stringent levels are specified below. The following criteria are to be applied except within zones of mixing:

(1) Aluminum — shall not exceed 1.5 milligrams ((mg)/l).

(2) Antimony — shall not exceed 0.2 milligrams (mg)/l.

(3) Bacteriological Quality — the median coliform MPN (Most Probable Number) of water shall not exceed seventy (70) per hundred (100) milliliters, and not more than ten percent (10%) of the samples shall exceed a MPN of two hundred and thirty (230) per one hundred (100) milliliters. The fecal coliform bacterial level shall not exceed a median value of 14 MPN per 100 milliliters with not more than ten percent (10%) of the samples exceeding 43 MPN per 100 milliliters.

(4) Biological Integrity — the Shannon-Weaver diversity index of benthic macroinvertebrates shall not be reduced to less than 75% of established background levels as measured using organisms retained by a U.S. Standard No. 30 sieve and collected and composited from a minimum of three natural substrate samples, taken with Ponar type samplers with minimum sampling areas of 225 square centimeters.

(5) Bromine and Bromates — free (molecular) bromine shall not exceed 0.1 milligrams (mg)/l, and bromates shall not exceed 100 milligrams (mg)/l.

(6) Cadmium — shall not exceed 3.0 micrograms (μg)/l.

(7) Chlorine (total residual) — shall not exceed 0.01 milligrams (mg)/l.

(8) Copper — shall not exceed 0.015 milligrams (mg)/l.

(9) Cyanide — shall not exceed 5.0 micrograms (μg)/l.

(10) Dissolved Gases — shall not exceed 110% of the saturation value for gases at the existing atmospheric and hydrostatic pressures.

(11) Dissolved Oxygen — the concentration in all waters shall not average less than 5 milligrams (mg)/l in a 24-hour period and shall never be less than 4 milligrams (mg)/l. Normal daily and seasonal fluctuations above these levels shall be maintained.

(12) Fluorides — shall not exceed 1.5 milligrams (mg)/l.

(13) Iron — shall not exceed 0.3 milligrams (mg)/l.

(14) Manganese — shall not exceed 0.1 milligrams (mg)/l.

(15) Mercury — shall not exceed 0.1 micrograms (μg)/l.

(16) Nickel — shall not exceed 0.1 milligrams (mg)/l.

(17) Nutrients — In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora and fauna.

(18) Odor — threshold odor number not to exceed 24 at 60 degrees C as a daily average.

(19) Pesticides and Herbicides:

(a) Aldrin plus Dieldrin — shall not exceed 0.003 micrograms (μg)/l.

(b) Chlordane — shall not exceed 0.004 micrograms (μg)/l.

(c) DDT — shall not exceed 0.001 micrograms (μg)/l.

(d) Demeton — shall not exceed 0.1 micrograms (μg)/l.

(e) Endosulfan — shall not exceed 0.001 micrograms (μg)/l.

(f) Endrin — shall not exceed 0.004 micrograms (μg)/l.

(g) Guthion — shall not exceed 0.01 micrograms (μg)/l.

(h) Heptachlor — shall not exceed 0.001 micrograms (μg)/l.

(i) Lindane — shall not exceed 0.004 micrograms (μg)/l.

(j) Malathion shall not exceed 0.1 micrograms (μg)/l.

(k) Methoxychlor — shall not exceed 0.03 micrograms (μg)/l.

(l) Mirex — shall not exceed 0.001 micrograms (μg)/l.

(m) Parathion — shall not exceed 0.04 micrograms (μg)/l.

(n) Toxaphene — shall not exceed 0.005 micrograms (μg)/l.

(20) pH — pH shall not be caused to vary more than one (1.0) unit above or below normal pH of coastal waters as defined in Section 17-3.021 and not more than two-tenths (0.2) unit above or below normal pH of open waters as defined in Section 17-3.021 and lower value shall not be less than six and one-half (6.5) and the upper value not more than eight and one-half (8.5).

(21) Phosphorus (elemental) — shall not exceed 0.1 micrograms (μg)/l.

(22) Polychlorinated Biphenyls — shall not exceed 0.001 micrograms (μg)/l.

(23) Selenium — shall not exceed 0.025 milligrams (mg)/l.

(24) Silver — shall not exceed 0.05 micrograms (μg)/l.

(25) Transparency — the depth of the compensation point for photosynthetic activity shall not be reduced by more than 10% as compared to the natural background value.

17-3.121 CRITERIA: CLASS III WATERS — RECREATION — PROPAGATION AND MANAGEMENT OF FISH AND WILDLIFE — SURFACE WATERS

The criteria listed below are for surface waters classified as Class III. The standards contained in Sections 17-3.051 and 17-3.061 also apply to all waters of this classification, unless additional or more stringent criteria are specified below. The following criteria are to be applied except within zones of mixing.

(1) Alkalinity — shall not be depressed below 20 milligrams per litre ((mg)/l) as $CaCO_3$ in predominantly fresh waters.

(2) Aluminum — shall not exceed 1.5 milligrams (mg)/l in predominantly marine waters.

(3) Ammonia (un-ionized) — shall not exceed 0.02 milligrams (mg)/l in predominantly fresh waters.

(4) Antimony — shall not exceed 0.2 milligrams (mg)/l in predominantly marine waters.

(5) Bacteriological Quality — fecal coliform bacteria shall not exceed a monthly average of 200 per 100 ml of sample, nor exceed 400 per 100 ml of sample in 10 percent of the samples, nor exceed 800 per 100 ml on any one day, nor exceed a total coliform bacteria count of 1,000 per 100 ml as a monthly average, nor exceed 1,000 per 100 ml in more than 20 percent of the samples examined during any month, nor exceed 2,400 per 100 ml at any time. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30-day period. Either MPN or MF counts may be utilized.

(6) Beryllium — in predominantly fresh waters shall not exceed 0.011 milligrams (mg)/l in waters with a hardness equal to or less than 150 (in milligrams (mg)/l of $CaCO_3$) and shall not exceed 1.10 milligrams (mg)/l in harder waters.

(7) Biological Integrity — the Shannon-Weaver diversity index of benthic macroinvertebrates shall not be reduced to less than 75 percent of established background levels as measured using organisms retained by a U.S. Standard No. 30 sieve and, in predominantly fresh waters, collected and composited from a minimum of three Hester-Dendy type artificial substrate samplers of 0.10 to 0.15 m^2 area each incubated for a period of four weeks, and in predominantly marine waters, collected and composited from a minimum of three natural substrate samples, taken with Ponar type samplers with minimum sampling area of 225 square centimeters.

(8) Bromine and Bromates — free (molecular) bromine shall not exceed 0.1 milligrams (mg)/l in predominantly marine waters, and bromates shall not exceed 100 milligrams (mg)/l in predominantly marine waters.

(9) Cadmium — shall not exceed 5.0 micrograms per litre (μg)/l in predominantly marine waters, shall not exceed 0.8 micrograms (μg)/l in predominantly fresh waters in water with a hardness (in milligrams (mg)/l of $CaCO_3$) of less than 150, and shall not exceed 1.2 micrograms (μg)/l in harder waters.

(10) Chlorine (total residual) — shall not exceed 0.01 milligrams (mg)/l.

(11) Copper — shall not exceed .015 milligrams (mg)/l in predominantly marine waters, shall not exceed .03 milligrams (mg)/l in predominantly fresh waters.

(12) Cyanide — shall not exceed 5.0 micrograms (μg)/l.

(13) Dissolved Gases — shall not exceed 110% of the saturation value for gases at the existing atmospheric and hydrostatic pressures.

(14) Dissolved Oxygen — in predominantly fresh waters, the concentration shall not be less than 5 milligrams (mg)/l. In predominantly marine waters, the concentration shall not average less than 5 milligrams (mg)/l in a 24-hour period and never less than 4

milligrams (mg)/l. Normal daily and seasonal fluctuations above these levels shall be maintained in both predominantly fresh waters and predominantly marine waters.

(15) Fluorides — shall not exceed 5.0 milligrams (mg)/l in predominantly marine waters.

(16) Iron — shall not exceed 1.0 milligrams (mg)/l in predominantly fresh waters; 0.3 milligrams (mg)/l in predominantly marine waters.

(17) Lead — shall not exceed .03 milligrams (mg)/l in predominantly fresh waters.

(18) Mercury — shall not exceed 0.1 micrograms (μg)/l in predominantly marine waters; shall not exceed 0.2 micrograms (μg)/l in predominantly fresh waters.

(19) Nickel — shall not exceed 0.1 milligrams (mg)/l.

(20) Nutrients — In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna.

(21) Pesticides and Herbicides:

(a) Aldrin plus Dieldrin — shall not exceed 0.003 micrograms (μg)/l.

(b) Chlordane — shall not exceed 0.01 micrograms (μg)/l in predominantly fresh waters and 0.004 micrograms (μg)/l in predominantly marine waters.

(c) DDT — shall not exceed 0.001 micrograms (μg)/l.

(d) Demeton — shall not exceed 0.1 micrograms (μg)/l.

(e) Endosulfan — shall not exceed 0.003 micrograms (μg)/l in predominantly fresh waters and 0.001 micrograms (μg)/l in predominantly marine waters.

(f) Endrin — shall not exceed 0.004 micrograms (μg/l.

(g) Guthion — shall not exceed 0.01 micrograms (μg)/l

(h) Heptachlor — shall not exceed 0.001 micrograms (μg)/l.

(i) Lindane — shall not exceed 0.01 micrograms (μg)/l in predominantly fresh waters and 0.004 micrograms (μg)/l in predominantly marine waters.

(j) Malathion -- shall not exceed 0.1 micrograms (μg)/l.

(k) Methoxychlor — shall not exceed 0.03 micrograms (μg)/l.

(l) Mirex — shall not exceed 0.001 micrograms (μg)/l.

(m) Parathion — shall not exceed 0.04 micrograms (μg)/l.

(n) Toxaphene — shall not exceed 0.005 micrograms (μg)/l.

(22) pH — pH of receiving waters shall not be caused to vary more than one (1.0) unit above or below normal pH of predominantly fresh waters and coastal waters as defined in Section 17-3.021; and not more than two tenths (0.2) units above or below normal pH of open waters as defined in Section 17-3.021; the lower value shall not be less six (6.0) in predominantly fresh waters or less than six and one-half (6.5) in predominantly marine waters; and the upper value not more than eight and one-half (8.5).

(23) Phosphorus (elemental) — shall not exceed 0.1 micrograms (μg/l in predominantly marine waters.

(24) Phthalate Esters shall not exceed 3.0 micrograms (μg/l in predominantly fresh waters.

(25) Polychlorinated Biphenyls — shall not exceed 0.001 micrograms (μg)/l.

(26) Selenium — shall not exceed 0.025 milligrams (mg)/l.

(27) Silver — shall not exceed 0.07 micrograms (μg)/l in predominantly fresh waters and 0.05 micrograms (μg)/l in predominantly marine waters.

(28) Transparency — the depth of the compensation point for photosynthetic activity shall not be reduced by more than 10 percent compared to the natural background value.

(29) Zinc — shall not exceed .03 milligrams (mg)/l in predominantly fresh waters.

17-3.131 CRITERIA: CLASS IV WATERS — AGRICULTURAL SUPPLIES — SURFACE WATERS

The criteria listed below are for surface waters classified as Class IV. The standards established in Sections 17-3.051 and 17-3.061 also apply to all waters of this classification, unless additional or more stringent criteria are specified below. The following criteria are to be applied except within zones of mixing.

(1) Alkalinity — shall not exceed 600 milligrams (mg)/l as $CaCO_3$.

(2) Beryllium — shall not exceed 0.1 milligrams (mg)/l in waters with a hardness in milligrams (mg)/l of $CaCO_3$ of less than 150 and shall not exceed 0.5 milligrams (mg)/l in harder waters.

(3) Boron — shall not exceed 0.75 milligrams (mg)/l.

(4) Color, odor, and taste producing substances and other deleterious substances, including other chemical compounds, attributable to domestic wastes, industrial wastes, and other wastes — only such amounts as will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, industrial process water supply purposes or fish survival.

(5) Cyanide — shall not exceed 5.0 micrograms (μg)/l.

(6) Dissolved Oxygen — shall not average less than 4.0 milligrams (mg)/l in a 24-hour period and shall never be depressed below 3.0 milligrams (mg)/l.

(7) Iron — shall not exceed 1.0 milligrams (mg)/l.

(8) Mercury — shall not exceed 0.2 micrograms (μg/l.

(9) Nickel — shall not exceed 0.1 milligrams (mg)/l.

(10) pH — not more than (1.0) unit from the normal or not less than six (6.0) nor greater than 8.5.

17-3.141 CRITERIA: CLASS V-A WATERS — NAVIGATION, UTILITY AND INDUSTRIAL USE — SURFACE WATERS.

The criteria listed below are for surface waters classified as Class V-A. The standards contained in Sections 17-3.051 and 17-3.061 also apply to all waters of this classification unless additional, alternative or more stringent criteria are specified below. The following criteria are to be applied except within zones of mixing:

(1) Cyanide — shall not exceed 5.0 micrograms per litre (μg)/l).

(2) Dissolved Oxygen — not to be depressed below 2.0 milligrams per litre ((mg)/1).

(3) Mercury — shall not exceed 0.2 micrograms (μg)/l.

(4) Odor producing substances — only in such amounts as will not unreasonably interfere with the use of the water for the designated purpose of this classification.

(5) pH — not lower than 5.0 nor greater than 9.5 except certain swamp waters which may be as low as 4.5.

17-3.151 CRITERIA: CLASS V—B WATERS — FRESHWATER STORAGE AND UTILITY AND INDUSTRIAL SUPPLY — GROUNDWATERS

As state in Section 17-3.161, all groundwaters with total dissolved solids equal to or greater than 10,000 milligrans per litre (mg)/l) are classified as Class V-B. Except within zones of discharge.

(1) The standards contained in 17-3.051(1) and 17-3.071 apply to all waters of this classification, and

(2) The standards contained in 17-3.101 apply to waters of this classification that are used for or can reasonably be expected to be used for a potable supply.

17-3.161 CLASSIFIED WATERS

(1) The surface waters of the State of Florida are classified by river basins or sub-basins as Class III — Recreation — Propagation and Management of Fish and Wildlife, with only the individual exceptions to Class III listed within each basin as delineated on USGS Map, "Drainage Basins in Florida", Map Series No. 28, October 1967. Outstanding Florida Waters are listed in Section 17-3.041. All secondary and tertiary canals wholly within agricultural areas are hereby classified as Class IV, and are not listed below. Agricultural areas shall generally include lands actively used solely for the production of food and fiber which are zoned for agricultural use where county zoning is in effect. Agricultural areas exclude lands which are platted and subdivided or in a transition phase to residential use.

(2) The groundwaters of the State of Florida are classified on the basis of total dissolved solids content. Groundwaters with levels of total dissolved solids less than 10,000 mg/l are classified as Class I-B, and groundwaters with naturally-occurring levels of total dissolved solids equal to or greater than 10,000 mg/l are classified as Class V-B. These waters are not listed below.

(3) Florida Water Classifications

(a) Nassau — St. Mary's Basin (No. 19)

This basin consists of U.S. Geological Survey Basins 09J — St. Mary's River Basin and coastal area and 09D — Coastal area between St. Mary's River and St. John's River and lists wholly or partially in the following counties: Nassau, Baker, Columbia, Union and Duval (consolidated city of Jacksonville). The following individual waters are exceptions to Class III:

1. Nassau County. South Amelia River — Nassau River north Harrison Creek — Class II. Alligator Creek — Class II.

2. Nassau County and Duval County. Nassau River and Creek — Nassau Sound to Seymore Point — Class II.

3. Duval County (Consolidated City of Jacksonville). Pumpkinhill Creek — Class II. Intracoastal Waterway and tributaries — confluence of Nassau and Amelia Rivers south to Flashing Marker "72", thence eastward along Ft. George River to Ft. George Inlet and includes Garden Creek and both prongs of Simpson Creek — Class II.

(b) St. John's Basin (No. 20). This basin consists of U.S. Geological Survey Basin 09E — St. John's River basin and Sub-basins 09E1 — St. John's River above Oklawaha River, 09E2 — Oklawaha River, and 09E3 — St. John's River below Oklawaha River, and lies wholly or partially in the following counties: Duval (Consolidated City of Jacksonville), St. John's, Clay, Bradford, Alachua, Putnam, Flagler, Volusia, Marion, Levy, Lake, Sumter, Seminole, Orange, Brevard, Osceola, Polk, Indian River, Okeechobee and St. Lucie. The following individual waters are exceptions to Class III:

1. Brevard County and Indian River County. St. John's River and Tributaries — Lake Washington Dam south through and including Sawgrass Lake, Lake Hellen Blazes, and Blue Cypress Lake to SR 60 in Indian River County — Class I-A.

2. Duval County. Ft. George River — Ft. George Inlet north to Nassau — St. Mary's/St. John's Basin Boundary. Class II.

(c) Suwannee Basin (No. 21). This basin consists of U.S. Geological Survey Basin 09J — Suwannee River Basin and Sub-basins, 09J1 — Suwannee River above Withlacoochee River, 09J2 — Alapaha River, 09J3 — Withlacoochee River, 09J5 — Suwannee River below Withlacoochee River, and 09J6 — Santa Fe River and lies wholly or partially in the following counties: Madison, Hamilton, Columbia, Baker, Union, Bradford, Clay, Alachua, Gilchrist, Suwannee, Lafayette, Dixie, Taylor and Levy. The following individual waters are exceptions to Class III:

1. Dixie County. Tidal Creeks within USGS Sub-basin 09J5 north of, but excluding the mouth of, the Suwannee River from Suwannee River or Gulf of Mexico to source — Class II.

2. Levy County. Tidal Creeks within USGS Sub-basin 09J5 south of, but excluding the mouth of, the Suwannee River from Suwannee River or Gulf of Mexico to source — Class II.

3. Hamilton County. Jumping Gully Creek — Unclassified.

(d) Aucilla — Ochlockonee — St. Mark's Basin (No. 22). This basin consists of U.S. Geological Survey Basins 09K — Aucilla River Basin, 11B — Coastal area between Aucilla River and Ochlockonee River, 11C — Ochlockonee River basin and coastal areas, and 11D — Coastal area between Ochlockonee River and Apalachicola River and lies wholly or partially in the following counties: Gadsden, Leon, Jefferson, Madison, Liberty, Franklin, Wakulla, Taylor, Lafayette, and Dixie. The following individual waters are exceptions to Class III.

1. Gadsden County. Quincy Creek — SR 65 to source — Class I-A Holman Branch — SR 270-A to source — Class I-A.

2. Franklin County. Ochlockonee Bay — Confluence of Sopchoppy and Ochlockonee Rivers to Gulf of Mexico — Class II. Alligator Harbor — East from a line from Peninsula Point north to St. James Island to mean high water — Class II. Gulf of Mexico — North of a line from

Peninsula Point on Alligator Point to the northeastern tip of Dog Island and bounded on the east by Alligator Harbor and on the west by St. George Sound — Class II. St. George Sound (Portion in USGS Basin 11D) — Gulf of Mexico westerly to Apalachicola Bay — Class II. East Bay and Tributaries (Portion in USGS Basin 11D) — Apalachicola Bay to source — Class II.

3. Wakulla County. Oyster Bay, Apalachee Bay, and Tributaries — west of a line from western tip of Shell Point south to FL. 4 sec. marker and southerly to Ochlockonee Point, with the exception of Spring Creek and portion of King Bay west and north of a line from western-most tip of Porter Island south to Hungry Point — Class II.

4. Jefferson County and Wakulla County. Coastal waters — Mouth of Aucilla River west to Live Oak Point excluding mouths of drainage areas — Class II.

5. Taylor County. Fenholloway River — Class V-A.

6. Dixie County. Tidal Creeks and coastal waters — Horseshoe Point south to basin boundary of USGS Basin 09K — Class II.

(e) Withlacoochee Basin (No. 23). This basin consists of U.S. Geological Survey basins 09H — Coastal area between the Withlacoochee River Basin and Suwannee River and lies wholly or partially in the following counties: Gilchrist, Levy, Alachua, Marion, Citrus, Sumter, Hernando, Pasco, Lake and Polk. The following individual waters are exceptions to Class III:

1. Levy County. Tidal Creeks and coastal waters — South from USGS Basin boundary line 09H separating the Suwanee Basin from the Withlacoochee Basin to the Withlacoochee River excluding the Cedar Key area and the mouth of the Withlacoochee River — Class II.

(f) Tampa Bay Area Basin (No. 24). This basin consists of U.S. Geological Survey Basins 10J — Coastal area between Withlacoochee River and Hillsborough River, 10H — Hillsborough River Basin and coastal area north of Alafia River, 10G — Alafia River Basin and 10F — Coastal area between Alafia River and Myakka River and lies wholly or partially in the following counties: Citrus, Hernando, Pasco, Pinellas, Hillsborough, Polk, Manatee, Sarasota, Charlotte, and Lee. The following individual waters are exceptions to Class III:

1. Citrus County. Tidal Creeks and coastal waters — Latitude 28 degrees 54 minutes N., south to Hernando County Line with the exception of waters which are bounded by and including the Crystal River on the north, St. Martin's River on the south, barrier islands on the west, and the mainland on the east — Class II.

2. Pinellas County. Mullet Key Area — Class II. Tampa Bay — South Pinellas County Line to Gandy Causeway — Class II. Old Tampa Bay — Gandy Causeway to Safety Harbor — Class II. Safety Harbor — To Old Tampa Bay — Class II. Mobbly Bay — Portion in Pinellas County — Class II.

3. Hillsborough County. Old Tampa Bay and Mobbly Bay — Beginning at the intersection of the north shore of SR 60 (Courtney Campbell Parkway) and Longitude 83 degrees 35 minutes 45 seconds west, thence due north to the line of mean high water, thence westward along the line of mean high water, including Rocky and Double Branch Creeks to SR 580 and up the upper Tampa Bay watershed canal to a line connecting the lines of mean high water on the outer sides of the canal banks, to the county line, thence southerly along the county line to SR 60, thence along the north shore of SR 60 to the point of beginning — Class II. Old Tampa Bay — All waters within Hillsborough County bounded on the north by SR 60 (Courtney Campbell Parkway), the south by Interstate 4 (Howard Franklin Bridge), the west by the county line, and the east by the line of mean high water — Class II. Tampa Bay — Beginning at Gadsden Point, thence along a line connecting Gadsden Point and the intersection of Gadsden Point Cut and Cut "A" to a point one-half nautical mile inside said intersection, thence westward along a line one-half nautical mile inside and parallel to Gadsden Point Cut, Cut "G," Cut "J," Cut "J2," and Cut "K," to the line of mean high water, thence along the line of mean high water to the point of beginning — Class II. Tampa Bay — Beginning at the intersection of the Hillsborough County Line and the line of mean high water, thence to the rear range marker of Cut "D," thence northerly along the line of Cut "D" range to a point one-half nautical mile inside the southern boundary of Cut "C", thence along a line one-half mile inside and parallel to Cut "C", Cut "D", and Cut "E" to a point with Latidude 27 degrees 45 minutes 40 seconds N. and Longitude 82 degrees 30 minutes 40 seconds west, thence to a point Latitude 27 degrees 45 minutes north and Longitude 82 degrees 27 minutes west, thence on a true bearing of 140 degrees to the line of mean high water, thence along the line of mean high water to the western tip of Mangrove Point, thence to the northwestern tip of Tropical Island, thence eastward along the line of mean high water to the eastern tip of Goat Island, thence due south to the line of mean high water, thence along the line of mean high water to the point of beginning — Class II. Tampa Bay — Hillsborough County portion west of the Sunshine Skyway and from the three fathom depth contour up to the line of mean high water — Class II. Hillsborough River — City of Tampa Water Treatment Plant Dam to Flint Creek — Class I-A. Cow House Creek — Hillsborough River to source — Class I-A.

4. Manatee County — Terra Cela Bay — To Terra Cela Point — Class II. Palma Sola Bay — Class II. Passage Key Area — Egmont Key to Anna Maria Island — Class II. Sarasota Bay — East-west line through marker "48" on Intracoastal Waterway south to Manatee County Line — Class II. Manatee River — Rye Bridge Road to the sources thereof, including but not limited to the the following tributaries: the East Fork of the Manatee River, the North Fork of the Manatee River, Boggy Creek, Gilley Creek, Poley Branch, Corbit Branch, Little Deep Branch, Fisher Branch, Ft. Crawford Creek, Webb Branch, Clearwater Branch, Craig Branch, and Guthrey Branch — Class I-A. Ward Lake — SR 70 to source (SR 675) — Class I-A.

5. Sarasota County. Sarasota Bay — West of Center (Intracoastal Waterway) — Class II. Lemon Bay — Forked Creek south to Charlotte County Line — Class II.

6. Charlotte County. Lemon Bay and Tributaries — N. Charlotte County Line south to Placida Harbor and bounded on the east by SR 775. Class II. Placida Harbor

— to mean high water — Class II. Gasparilla Sound — Placida Harbor to Charlotte County Line — Class II. Bull Bay — mean high water to Charlotte County Line — Class II. Turtle Bay — mean high water to Charlotte County Line — Class II. Charlotte Harbor — Portion in USGS Basin 10F south to Charlotte County Line — Class II.

7. Lee County. Charlotte Harbor — Portion in USGS Basin 10F south from N. Lee County Line — Class II.

(g) Peace Basin (No. 25). This basin consists of U.S. Geological Survey Basins 10E (Myakka River Basin) 10D (Peace River Basin) and 10C (Coastal area between Peace River and Caloosahatchee River) and lies wholly or partially in the following counties: Polk, Hillsborough, Manatee, Hardee, Highlands, Sarasota, DeSoto, Charlotte, Glades, and Lee. The following individual waters are exceptions to Class III:

1. Sarasota County. Big Slough Canal — South to U.S. 41 — Class I-A. Myakka River — Myakka vicinity through Upper and Lower Myakka Lakes to Manhattan Farms — Class I-A. Myakka River — S.W. North Port Charlotte Limit south to Charlotte County Line — Class II.

2. DeSoto County. Horse Creek — Vicinity Jct. SR 760 and 761 to Peace River — Class I-A.

3. DeSoto County and Charlotte County. Prairie Creek — Headwaters to Shell Creek — Class I-A.

4. Charlotte County. Myakka River — N. Charlotte County Line south to Charlotte Harbor — Class II. Charlotte Harbor — Portion in Peace Basin south to Charlotte County Line — Class II. Alligator Creek — North and south prongs from headwaters to SR 765-A — Class I-A. Shell Creek Headwaters to Ridge Harbor — Class I-A. Lemon Bay and tributaries — Placida Harbor north to Tampa Bay Area/Peace Basin Boundary, and bounded on the east by SR 775 — Class II. Port Charlotte Canal System — Surface waters lying upstream of, or directly connected to, Fordham Waterway upstream of Conway Boulevard — Class I-A.

5. Lee County. Charlotte Harbor — Portion in USGS Basin 10C north to N. Lee County Line — Class II. Pine Island Sound Charlotte Harbor to San Carlos Bay — Class II. Matlacha Pass — Charlotte Harbor to San Carlos Bay — Class II. San Carlos Bay — Portion in USGS Basin 10C — Class II.

(h) Kissimmee Basin (No. 26). This Basin consists of U.S. Geological Survey Sub-basin 10B1 — Lake Okeechobee inflow area and lies wholly or partially in the following counties: Lake, Orange, Polk, Osceola, Highlands, Okeechobee, Glades Charlotte, Saint Lucie, and Martin. There are no individual exceptions to Class III in this basin.

(i) Florida East Coastal Basin (No. 27). This basin consists of U.S. Geological Survey Basins 09F (Coastal area between St. John's River and Turkey Creek) and 10A (Turkey Creek and coastal area south to St. Lucie River) and lies wholly or partially in the following counties: Duval (Consolidated City of Jacksonville), St. John's, Flagler, Volusia, Brevard, Indian River, St. Lucie, and Martin. The following individual waters are exeptions to Class III:

1. St. John's County. Tolomato River (North River) and Tributries — From a line connecting Spanish Landing to Booth Landing south to Intracoastal waterway marker number 55 — Class II. Guano River and tributaries. — Guano Lake Dam south to Tolomato River — Class II. Salt Run — All waters south of an east-west line connecting Lighthouse Park boat ramp with Conch Island — Class II. Matanza River, Treasure Beach Canal System— From Intracoastal Waterway marker number 29 south to Flagler County Line — Class II.

2. St. John's County and Flagler County. Pellicer Creek — Class II.

(3) Flagler County, Matanza River (Intracoastal Waterway) — N. Flagler County Line south to Fl. Marker "109" — Class II.

4. Volusia County. Indian River North — Channel Marker 57 south to Mosquito Lagoon — Class II. Mosquito Lagoon — Indian River North south to S. Volusia County Line — Class II.

5. Brevard County. Mosquito Lagoon — North Brevard County Line south to Max Hoeck Creek — Class II. Indian River — N. Brevard County Line south to Florida East Coast Railroad Crossing (vicinity Jay Jay) — Class II. Indian River — Barnes Blvd. south to South Section Line of Section 29, T. 26 S., R. 37E., Palm Shores — Class II. Indian River — Cape Malabar south to S. Brevard County Line — Class II. Trout Creek — Class II. Kid Creek — Class II. Goat Creek — Class II.

6. Indian River County. Indian River — Sebastian Inlet (N. Indian River County Line) south to Wabasso vicinity east of channel centerline — Class II. Indian River — Wabasso vicinity south to vicinity North Relief Canal — Class II.

7. St. Lucie County. Indian River — N. St. Lucie County Line south to Garfield Point — Class II. Indian River — Middle Cove vicinity south to S. St. Lucie County Line, east of Channel centerline — Class II.

8. Martin County. Indian River — N. Martin County Line south to St. Lucie Inlet, east of Channel centerline — Class II.

(j) Lower Florida Basin (No. 28). This basin consists of U.S. Geological Survey Sub-basin 10B2 — Lake Okeechobee and the Everglades and lies wholly or partially in the following counties: Charlotte, Glades, Lee, Hendry, Collier, Monroe, Dade, Broward, Palm Beach, Martin, St. Lucie, and Okeechobee. The following individual waters are exceptions to Class III:

1. Lee County. Caloosahatchee River — E. Lee County Line to South Florida Water Management District Structure 79 — Class I-A. San Carlos Bay — Portion in USGS Sub-basin 10B2 — Class II. Matanzas Pass — San Carlos Bay to Estero Bay — Class II. Hell Peckish Bay — Class II.

2. Collier County. Cocohatchee River — Class II. Little Hickory Bay — Class II. Wiggins Pass — Class II. Inner and Outer Clam Bay — Class II. Inner and Outer Doctors Bay — Class II. Connecting Waterways — Wiggins Pass south to Outer Doctors Bay — Class II. Naples Bay — Class II. Dollar Bay — Class II. Tidal Bays and Passes — Rookery Bay south and easterly through Ten Thousand Islands to Monroe County Line — Class II.

3. Monroe County. Monroe County Coastline — North Monroe County Line south and including Florida Bay portion within Everglades National Park — Class II.

4. Dade County. Miami River — Salinity barrier easterly 5.7 miles to Biscayne Bay — Class IV.

5. Broward County. Abandoned Rock Pit — Northeast corner of No. 7 and Prospect Field Road in the S.W. Quarter of Section 7, T. 49 S., R. 42 E. — Class I-A.

6. Palm Beach County. M- Canal L-8 to Lake Mangonia — Class I-A. Lake Mangonia — Class I-A. Clear Lake — Class I-A. Canal C-18 (freshwater portion) — Class I-A. Canal C-18 — Salinity barrier to Loxahatchee River — Class II.

7. Palm Beach County and Martin County. Loxahatchee River — Above Florida East Coast Railroad Bridge including South, Northwest, and North Forks — Class II.

8. Martin County. Great Pocket — St. Lucie River to Peck's Lake — Class II.

9. Multi County. Lake Okeechobee — Class I-A.

(k) Apalachicola Basin (No. 31). This basin consists of U.S. Geological Survey Basins 11E — Apalachicola River Basin and Sub-basins 11E2 — Chattahoochee River below Mulberry Creek, 11E7 — Apalachicola River and 11E8 — Chipola River, and lies wholly or partially in the following counties: Jackson, Gadsden, Washington, Bay, Calhoun, Liberty, Gulf, and Franklin. The following individual waters are exceptions to Class III.

1. Gadsden County. Mosquito Creek — U.S. Highway 90 north to Florida State Line — Class I-A.

2. Franklin County. East Bay — Portion in USGS Sub-basin 11E7 with exception of area encompassed within 2-mile radius from Apalachicola entrance of John Gorrie Memorial Bridge — Class II. Apalachicola Bay — Portion in USGS Sub-basin 11E7 with exception of area encompassed within 2-mile radius of John Gorrie Memorial Bridge — Class II.

(l) Choctawhatchee Basin (No. 32). This basin consists of U.S. Geological Survey Basins 11F — Coastal Area between Apalachicola River and Choctawhatchee River, 12A — Choctawhatchee River Basin, 12B — Coastal area between Choctawhatchee River and Yellow River and Sub-basins 12A3 — Pea River and 12A4 — Choctawhatchee River below Pea River, and lies wholly or partially in the following counties: Jackson, Calhoun, Gulf, Franklin, Holmes, Washington, Bay, Walton, Okaloosa, Santa Rosa, and Escambia. The following individual waters are exceptions to Class III.

1. Jackson County, Washington County, and Bay County. Econfina Creek — Deer Point Impoundment to source — Class I-A.

2. Gulf County. Indian Lagoon — West of Indian Pass and St. Vincent Sound — Class II. St. Joseph Bay — South and west of a line from St. Joseph Point to vicinity Port St. Joe — Class II.

3. Franklin County. St. George Sound (Portion of USGS Basin 11F) — East Pass to Apalachicola Bay — Class II. Apalachicola Bay — Portion in USGS Basin 11F with exception of area encompassed within 2-mile radius from Apalachicola entrance of John Gorrie Memorial Bridge — Class II. St. Vincent Sound — Apalachicola Bay to Indian Pass — Class II.

4. Bay County. East Bay and Tributaries — East of U.S. Highway 98 to, but excluding, Wetappo Creek — Class II. North Bay and Tributaries — North of U.S. Highway 98 to Deer Point Dam excluding Alligator and Fanning Bayous — Class II. West Bay and Tributaries — West of North Bay (line from West Bay Point on the north to Shell Point on the south) except West Bay Creek (northwest of Channel Marker 27C off Goose Point), Crooked Creek (north of a line from Crooked Creek Point to Doyle Point), and Burnt Mill Creek (north of a line from Graze Point to Cedar Point) — Class II. Deer Point Impoundment — Dam to source — Class I-A. Bayou George and Creek — Impoundment to source — Class I-A. Bear Creek — Impoundment to source — Class I-A. Big Cedar Creek — Impoundment to source — Class I-A.

5. Walton County and Okaloosa County. Choctawhatchee Bay and Tributaries — Eastward from a line from White Point southwesterly through F1. Light Marker "2" of the Intracoastal Waterway, and south of a line from Alaqua Point to Wheeler Point, to the eastern sources — Class II.

6. Okaloosa County. Rocky Bayou — Choctawhatchee Bay to Rocky Creek — Class II. Santa Rosa Sound — Okaloosa/Santa Rosa County Line east to Manatee Point — Class II.

7. Okaloosa County, Santa Rosa County, and Escambia County. Santa Rosa Sound — From a line connecting Gulf Breeze approach to Pensacola Beach, Bascule Bridge, and Sharp Point east to north-south line through Manatee Point with exception of the Navarre Beach area from Channel Marker "109" to Navarre Bridge — Class II.

8. Santa Rosa County. Blackwater Bay (Portion in USGS Basin 12B) — From a line connecting Robinson's Point to Broad River south to East Bay (line due west from Escribano Point) — Class II. East Bay and Tributaries (Portion in USGS Basin 12B) — Blackwater Bay (line due west from Escribano Point) southerly to Pensacola Bay (line from Garcon Point on the North to Redfish Point on the South) — Class II.

(m) Perdido-Escambia Basin (No. 33). This basin consists of U.S. Geological Survey Basin 12C — Yellow River Basin, 12D — Blackwater River Basin and coastal area, 12E — Escambia River Basin and coastal area, and Sub-basins 12E1 — Conecuh River and 12E4 — Escambia River and lies wholly or partially in the following counties: Walton, Okaloosa, Santa Rosa, and Escambia. The following individual waters are exceptions to Class III.

1. Santa Rosa County. Blackwater Bay (Portion in USGS Basins 12C and 12D) — From a line connecting Robinson's Point to Broad River south to East Bay (line due west from Escribano Point) — Class II. East Bay (Portion in USGS Basin 12D) — Blackwater Bay (line due west from Escribano Point) southerly to Pensacola Bay (line from Garcon Point on the north to Redfish Point on the South) — Class II.

2. Santa Rosa County and Escambia County. Escambia Bay — Louisville and Nashville Railroad Trestle south to Pensacola Bay (Line from Emanuel Point east northeasterly to Garcon Point) — Class II. Pensacola Bay East of a line connecting Emanuel Point on the north to the south end of the Pensacola Bay Bridge (U.S. Highway 98) — Class II. Santa Rosa Sound — From a line connecting Gulf Breeze approach to Pensacola Beach, Bascule Bridge, and Sharp Point east to Santa Rosa/Okaloosa County line with exception of the Navarre Beach area from Channel Marker "109" to Navarre Beach — Class II.

GEORGIA WATER QUALITY CONTROL REGULATIONS AND STANDARDS

(Rules and Regulations of the State of Georgia; Volume V, Chapter 391-3-6 — Water Quality Control; Effective June 30, 1974; Amended February 22, 1978; September 13, 1979; July 14, 1980; Water-Use Classifications as amended through July 1980; Approved by U.S. Environmental Protection Agency September 25, 1980)

391-3-6-.01 Organization and Administration.

(1) **Purpose.** The purpose of Paragraph 391-3-6-.01 is to establish the organizational and administrative procedures to be followed in the administration and enforcement of the Georgia Water Quality Control Act, as amended, and to carry out the purposes and requirements of said Act and of the Federal Water Pollution Control Act Amendments of 1972, as amended.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Georgia Water Quality Control Act, as amended, unless otherwise defined in this Paragraph or in any other Paragraph of these rules.

(a) "Act" means the Georgia Water Quality Control Act, as amended.

(b) "Board" means the Board of Natural Resources of the State of Georgia.

(c) "Department" means the Department of Natural Resources of the State of Georgia.

(d) "Director" means the Director of the Division of Environmental Protection of the Department of Natural Resources, State of Georgia.

(e) "Division" means the Division of Environmental Protection of the Department of Natural Resources, State of Georgia.

(f) "E.P.A." means the United States Environmental Protection Agency.

(g) "Federal Act" means the Federal Water Pollution Control Act Amendments of 1972, as amended.

(h) "National Pollutant Discharge Elimination System" (NPDES) means the national system for the issuance of permits under Section 402 of the Federal Water Pollution Control Act Amendments of 1972.

(i) "Regional Administrator" means the Regional Administrator for the EPA region which includes the State of Georgia.

(3) **Organization.** The Division of Environmental Protection of the Department of Natural Resources is responsible for enforcing those environmental protection laws of the State of Georgia as specified in the Executive Reorganization Act of 1972, as amended. Requests for information and submission of materials should be made to the Division office.

(4) **Administrative Hearings.**

(a) Hearings may be held in accordance with the Act in connection with the following matters:

1. To determine whether or not an alleged pollution is contrary to the public interest.

2. In connection with the securing, within the time specified by order or permit of the Director, of such operating results as are reasonable and practicable of attainment toward the control, abatement or prevention of pollution of the waters of the State and the preservation of the necessary quality for the reasonable use thereof.

3. In connection with notice to the holder of a permit of intent to revoke, suspend, or modify the permit.

4. In connection with the refusal of any person to cooperate with the efforts of the Division to reduce pollution, and upon the issuance of an order by the Director, to bring about the reduction or elimination of pollution within a reasonable time.

5. Any person who is aggrieved or adversely affected by any order or action of the Director and who petitions the Director for a hearing within thirty (30) days of the issuance of such order or notice of such action. Such person shall be granted a hearing before a hearing officer appointed by the Board of Natural Resources. The initial hearing and any administrative review thereof shall be conducted in accordance with Section 17(a) of the Executive Reorganization Act of 1972, as amended.

6. Any person against whom an emergency order is directed, provided such person petitions the Director for a hearing within the thirty (30) days of the issuance of such order. Such person shall be afforded a hearing as soon as possible.

7. In connection with public hearings required pursuant to Section 402 (b)(3) of the Federal Act and Federal Regulations, 40 C.F.R. 124.36.

8. In connection with public hearings or public participation required pursuant to Section 101(e) of the Federal Act.

(b) Insofar as applicable to the administrative procedures required pursuant to the Georgia Water Quality Control Act, as amended, Sections 14, 15, 16, 17, and 18 of the Georgia Administrative Procedure Act, as amended, and Section 17(a) of the Executive Reorganization Act of 1972, as amended, shall apply.

(5) **Notice.** Notice of all hearings provided for above shall be issued in accordance with Section 14 of the Georgia Administrative Procedure Act, as amended, and Federal Regulations, 40 C.F.R. 124.37.

(6) **Notice of File Plan of Correction or Improvement.**

(a) In order to carry out a comprehensive plan to prevent and control pollution, the Division, as required by Section 5 of the Act and Section 303 of the Federal Act, may conduct studies and perform evaluations to determine waste load allocations in order to specify the degree of treatment and or technology necessary to achieve the established effluent limitations, the maintenance of existing wastewater treatment technology, supplementary treatment or other specific measures necessary to attain and maintain applicable water quality standards, and protect the down stream users; or such other measures necessary to prevent further pollution or reduce existing pollution. Upon the establishment of the necessary corrective action, the discharger

will be required to file a plan and schedule of improvement with the Division. The Director may issue a notice to any person to submit within a specified time a plan of improvement and schedule for compliance with the specified requirements.

(b) The Director is authorized to approve plans, specifications, and related material, and to issue permits on behalf of the Division to persons who apply for such permits in accordance with Section 10 of the Act and such rules as are adopted and promulgated pursuant to same.

(7) **Effective Date.** This Paragraph shall become effective on June 30, 1974.

391-3-6-.02 Preparation and Submission of Engineering Reports and Plans and Specifications.

(1) **Purpose.** The purpose of Paragraph 391-3-6-.02 is to establish procedures to be followed by persons submitting to the Division engineering reports, plans and specifications, and related materials for the construction of any system for the disposal or treatment of pollutants.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Act, unless otherwise defined in this Paragraph or in any other Paragraph of these Rules:

(a) "Professional Engineer." A person registered to practice professional engineering in accordance with the provisions of an Act Governing the Practice of Professional Engineering in Georgia (Ga. L. 1945, p. 294, as amended; Ga. Code Section 84-2100).

(b) "Owner." Any person owning or operating any system for the disposal or treatment of pollutants.

(c) "Sewerage System" means any system for the treatment or disposal of pollutants including treatment works, pipe lines or conduits, pumping stations and force mains, and all other constructions, devices, and appliances appurtenant thereto, used for conducting pollutants to the point of ultimate disposal.

(3) **General Provisions.**

(a) Any person who desires to erect, modify, or alter a sewerage system shall obtain approval of any plans, specifications and related materials for such system from the Division prior to commencement of construction.

(b) Engineering material submitted to the Division shall be prepared by a Professional Engineer competent in the treatment of water pollutants.

(c) During the early stages of planning for the construction of a sewerage system, and prior to the formal submission of an application and accompanying materials for any permit required pursuant to the Act, or materials submitted for Division approval pursuant to these rules, a conference between the project owner or his representative and representatives of the Division shall be held at the request of either the Director or the project owner, in order to reach a clear understanding of the proposal to be formally submitted to the Division at a later time. Such conference shall be granted within sixty (60) days after a written request to the Division by the project owner or his representative. If a conference is not granted within such period, then such permit application or other materials shall be filed and acted upon by the Division after the expiration of such period.

(d) Sufficient copies of completed reports, plans and specifications, and related materials shall be submitted to the Division to cover necessary distribution when approved. Such material, accompanied by a letter of transmittal, shall be submitted by the project owner or his representative well in advance of any critical date involved, in order that time will be available for review, discussion and revision when necessary. The submittal of such material shall be complete, accurate, distinct, legible, and relevant in respect to the project to which it applies. Permit applications shall be processed as provided in Paragraph 391-3-6-.06.

(e) Plans for a sewerage system submitted to the Division will be considered for approval by the Division only when designed so as to minimize the passage of rainwater from roofs, streets or other areas and all groundwater, other than unavoidable infiltration, through such sewerage system.

(f) All proposed lift stations must be approved by the Division.

(4) **Engineering Reports.** Engineering reports submitted to the Division shall contain a comprehensive description of the proposed project and shall include the following:

(a) Pertinent information regarding the existing sewerage sytem, if applicable;

(b) Characteristics of existing pollutants and existing or proposed treatment of such pollutants;

(c) Demonstration of the need for the proposed sewerage system;

(d) Evaluation of alternatives to define the most cost effective method for meeting established effluent limitations, water quality goals, and treatment requirements;

(e) Results to be expected from treatment process;

(f) Sufficient maps, charts, tables, calculations, basis of design data and graphs to make the report readily understandable;

(g) An operation and maintenance program description;

(h) Such other pertinent engineering information as the Division may require.

(5) **Plans and Specifications.** Plans and specifications submitted to the Division for a sewerage system shall include the following:

(a) A map showing the area to be served by the sewerage system;

(b) Profiles of proposed sewers;

(c) Construction details of manholes and other special sewer structures;

(d) General and detail plans for the treatment facility;

(e) Complete design data for the treatment facility plans, to be submitted in duplicate on forms specified by the Division;

(f) Specifications for the construction of the sewerage system;

(g) Such other plans and specifications as the Division may require.

(6) **General Map Plans.** General map plans submitted to the Division for a sewerage system shall include the following:

(a) A map plan that shows the entire area to be served, drawn to a scale of from 100 to 300 feet per inch. The map plan may be divided into sections, provided the sheets are bound together and indexed to show the area covered by each sheet.

(b) All existing and proposed streets in the area to be served; surface elevations at all street intersections; the location of all existing sewers, separate or combined; the location of the treatment facility; the location of the existing and proposed sewer outlets or overflows; the elevation of the highest known stream water level at the outlets and the treatment facility; and clear identification of any areas from which sewage is to be pumped.

(c) Clear designation on the plan by suitable symbols of all sewer appurtenances, including, but not limited to, manholes, siphons and pumps.

(d) Such other information as the Division may require.

(7) **Sewer Plans and Profiles.** Sewer plans and profiles submitted to the Division for a sewerage system shall include the following:

(a) Sewers and force mains, drawn at a scale that shows the profile for all manholes, siphons, railroad crossings, street or stream crossings, elevations of stream beds, normal stream water levels, and sizes and grades of sewers which show surface elevations and sewer invert elevations.

(b) Detailed drawings of all sewer appurtenances, including, but not limited to, manholes, inspection chambers, siphons, lift stations, and any special structures to accompany the sewer plans. Detailed drawings shall be to a scale suitable to clearly show the design details.

(8) **Treatment Facilities Plans.** Plans for treatment facilities submitted to the Division shall include the following:

(a) A general plan that clearly identifies the exact location of the facilities, areas reserved for future expansion, access roads to the various units, and the point at which the access roads connect with existing road or street systems. It shall also show sufficient detail of the units, pipelines or any other features so as to make the proposed treatment process clearly and easily understood. The elevations of all units and water surfaces shall be shown.

(b) Detail plans which show longitudinal and transverse sections sufficient to explain the construction of each treatment unit.

(c) Flow measuring devices at appropriate points in the plan. Sampling and recording devices may be required by the Division when deemed necessary.

(d) Such other information as the Division may require.

(9) **Approval of Plans and Specifications.** Approval of the plans and specifications by the Division does not include or imply approval of the structural, electrical, or mechanical integrity of the sewerage system, treatment facilities, units or equipment.

(10) **Deviation from Approved Plans and Specifications.** No deviations from approved plans and specifications shall be made during construction unless documentation showing proposed changes has been submitted to and approved by the Division.

(11) **Effective Date.** This Paragraph shall become effective on June 30, 1974.

391-3-6-.03 Water Use Classifications and Water Quality Standards.*

(1) **Purpose.** The establishment of water quality standards.

(2) **Water Quality Enhancement:**

(a) The purposes and intent of the State in establishing Water Quality Standards are to provide enhancement of water quality and prevention of pollution; to protect the public health or welfare in accordance with the public interest for drinking water supplies, conservation of fish, game and other beneficial aquatic life, and agricultural, industrial, recreational, and other beneficial uses.

(b) Those waters in the State whose existing quality is better than the minimum levels established in standards on the date standards become effective will be maintained at high quality; with the State having the power to authorize new developments, when it has been affirmatively demonstrated to the State that a change is justifiable to provide necessary social or economic development; and provided further that the level of treatment required is the highest and best practicable under existing technology to protect existing beneficial water uses.

(c) In applying these policies and requirements, the State of Georgia will recognize and protect the interest of the Federal Government in interstate (including coastal and estuarine) waters. Toward this end the State will consult and cooperate with the Environmental Protection Agency on all matters affecting the Federal interest.

(3) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with definitions as set forth in the Act and as otherwise herein defined:

(a) "Reasonable and necessary uses" means drinking water supplies, conservation of fish, game and other aquatic life, agricultural, industrial, recreational, and other legitimate uses.

(b) "Shellfish" refers to clams, oysters, scallops, mussels, and other mollusks.

(c) "Intake temperature" is the natural or background temperature of a particular waterbody unaffected by any man-made discharge or thermal input.

(d) "Coastal waters" are those littoral recreational waters on the ocean side of the Georgia coast.

(4) **Water Use Classifications.** Water use classifications for which the criteria of this Paragraph are applicable are as follows:

(a) Drinking Water Supplies
(b) Recreation
(c) Fishing, Propagation of Fish, Shellfish, Game and Other Aquatic Life
(d) Agricultural
(e) Industrial
(f) Navigation
(g) Wild River
(h) Scenic River
(i) Urban Stream

(5) **General Criteria for All Waters.** The following criteria are deemed to be necessary and applicable to all waters of the State:

(a) All waters shall be free from materials associated with municipal or domestic sewage, industrial waste or any other waste which will settle to form sludge deposits that become putrescent, unsightly or otherwise objectionable.

(b) All waters shall be free from oil, scum and floating debris associated with municipal or domestic sewage, industrial waste or other discharges in amounts sufficient to be unsightly or to interfere with legitimate water uses.

(c) All waters shall be free from material related to municipal, industrial or other discharges which produce turbidity, color, odor or other objectionable conditions which interfere with legitimate water uses.

(d) All waters shall be free from toxic, corrosive, acidic and caustic substances discharged from municipalities, industries or other sources in amounts, concentrations or combinations which are harmful to humans, animals or aquatic life.

(e) Applicable State and Federal requirements and regulations for the discharge of radioactive substances shall be met at all times.

(f) No man-made physical or other alteration of stream beds that may violate established water quality standards, or reduce the waste assimilative capacity of the streams, will be permitted without the expressed approval of the Environmental Protection Division.

(6) **Specific Criteria for Classified Water Usage.** The following criteria are deemed necessary and shall be required for the specific water usage as shown:

(a) Drinking Water Supplies:

1. Those waters approved by the Environmental Protection Division and requiring only approved disinfection and meeting the requirements of the Federal Drinking Water Standards; or waters approved by the Environmental Protection Division for human consumption and food-processing or for any other use requiring water of a lower quality:

(i) Bacteria: Fecal coliform not to exceed a geometric mean of 50 per 100 ml based on at least four samples taken over a 30-day period and not to exceed 200 per 100 ml in more than five percent of the samples in any 90-day period.

(ii) Floating solids, settleable solids, sludge deposits or any taste, odor or color producing substances: None associated with any waste discharge.

(iii) Sewage, industrial or other wastes: None.

2. Those raw water supplies requiring approved treatment to meet the requirements of the Environmental Protection Division and the Federal Drinking Water Standards or which are approved by the Environmental Protection Division for human consumption and food-processing; or for any other use requiring water of a lower quality:

(i) Bacteria: Fecal coliform not to exceed a geometric mean of 1,000 per 100 ml based on at least four samples taken over a 30-day period and not to exceed a maximum of 4,000 per 100 ml.

(ii) Dissolved Oxygen: A daily average of 6.0 mg/l and no less than 5.0 mg/l at all times for waters designated as trout streams by the State Game and Fish Division. A daily average of 5.0 mg/l and no less than 4.0 mg/l at all times for water supporting warm water species of fish.

(iii) pH: Within the range of 6.0-8.5.

(iv) No material or substance in such concentration that, after treatment, would exceed the requirements of the Environmental Protection Division and the latest edition of Federal Drinking Water Standards.

(v) Temperature: Not to exceed 90 degrees F. At no time is the temperature of the receiving waters to be increased more than 5 degrees F above intake temperature except that in estuarine waters the increase will not be more than 1.5 degrees F. In streams designated as trout or smallmouth bass waters by the State Game and Fish

*Applicable to Intrastate and Interstate Waters of Georgia.

Division, there shall be no elevation or depression of natural stream temperature.

(b) Recreation:

1. General recreational activities such as water skiing, boating, and swimming, or for any other use requiring water of a lower quality. These criteria are not to be interpreted as condoning water contact sports in proximity to sewage or industrial waste discharges regardless of treatment requirements:

(i) Bacteria: Fecal coliform not to exceed a geometric mean of:

(I) Coastal Waters — 100 per 100 ml

(II) All other recreational waters — 200 per 100 ml

(III) Should water quality and sanitary studies show natural fecal coliform levels exceed 200/100 ml (geometric mean) occasionally in high quality recreational waters, then the allowable geometric mean fecal coliform level shall not exceed 300 per 100 ml in lakes and reservoirs and 500 per 100 ml in free flowing fresh water streams.

1. The geometric mean will be used as the method of criteria expression. This technique will be applied to no less than four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours.

(ii) Dissolved Oxygen: A daily average of 6.0 mg/l and no less than 5.0 mg/l at all times for waters designated as trout streams by the State Game and Fish Division. A daily average of 5.0 mg/l and no less than 4.0 mg/l at all times for waters supporting warm water species of fish.

(iii) pH: Within the range of 6.0-8.5.

(iv) Toxic Wastes, Other Deleterious Materials: None in concentrations that would harm man, fish and game or other beneficial aquatic life.

(v) Temperature: Not to exceed 90 degrees F. At no time is the temperature of the receiving waters to be increased more than 5 degrees F above intake temperature except that in estuarine waters the increase will not be more than 1.5 degrees F. In streams designated as trout or smallmouth bass waters by the State Game and Fish Division, there shall be no elevation or depression of natural stream temperatures.

(c) Fishing, Propagation of Fish, Shellfish, Game and Other Aquatic Life; or for any other use requiring water of a lower quality:

1. Dissolved Oxygen: A daily average of 6.0 mg/l and no less than 5.0 mg/l at all times for waters designated as trout streams by the State Game and Fish Division. A daily average of 5.0 mg/l and no less than 4.0 mg/l at all times for waters supporting warm water species of fish.

2. pH: Within the range of 6.0-8.5.

3. Bacteria: Fecal coliform not to exceed a geometric mean of 1,000 per 100 ml based on at least four samples taken over a 30-day period and not to exceed a maximum of 4,000 per 100 ml.

4. Bacteria: (Applicable only to waters designated as approved shellfish harvesting waters by the appropriate State agencies). The requirements will be consistent with those established by the State and Federal agencies responsible for the National Shellfish Sanitation Program.

5. Temperature: Not to exceed 90 degrees F. At no time is the temperature of the receiving waters to be increased more than 5 degrees F above intake temperature except that in estuarine waters the increase will not be more than 1.5 degrees F. In streams designated as trout or smallmouth bass waters by the State Game and Fish Division, there shall be no elevation or depression of natural stream temperatures.

6. Toxic Wastes, Other Deleterious Materials: None in concentrations that would harm man, fish and game or other beneficial aquatic life.

(d) Agricultural:

1. For general agricultural uses such as stock watering and irrigating; or for any other use requiring water of a lower quality:

(i) Bacteria: Fecal coliform not to exceed a geometric mean of 5,000 per 100 ml based on at least four samples taken over a 30-day period.

(ii) Dissolved Oxygen: No less than 3.0 mg/l at any time.

(iii) pH: Within the range of 6.0-8.5.

(iv) Temperature: Not to exceed 90 degrees F. At no time is the temperature of the receiving waters to be increased more than 5 dgrees F above intake temperature except that in estuarine waters the increase will not be more than 1.5 degrees F. In streams designated as trout or smallmouth bass waters by the State Game and Fish Division, there shall be no elevation or depression of natural stream temperatures.

(v) Toxic Substances, Other Deleterious Materials: None in concentrations that would interfere with or adversely affect uses for general agricultural purposes or would prevent fish survival.

(e) Industrial:

1. For processing and cooling water with or without special treatment; or for any other use requiring water of a lower quality:

(i) Dissolved Oxygen: No less than 3.0 mg/l at any time.

(ii) pH: Within the range of 6.0-8.5.

(iii) Toxic Substances, Other Deleterious Materials: None in concentrations that would prevent fish survival or interfere with legitimate and beneficial industrial uses.

(iv) Temperature: Not to exceed 90 degrees F. At no time is the temperature of the receiving waters to be increased more than 5 degrees F above intake temperature except that in estuarine waters the increase will not be more than 1.5 degrees F. In streams designated as trout or smallmouth bass waters by the State Game and Fish Division, there shall be no elevation or depression of natural stream temperatures.

(f) Navigation:

1. To provide for commercial ship traffic and protection of seamen or crews:

(i) Bacteria: Fecal coliform not to exceed a geometric mean of 5,000 per 100 ml based on at least four samples taken over a 30-day period.

(ii) Dissolved Oxygen: No less than 3.0 mg/l at any time.

(iii) pH: Within the range of 6.0 - 8.5.

(iv) Toxic Substances, Other Deleterious Materials: None in concentrations that would damage vessels, prevent fish survival or otherwise interfere with commercial navigation.

(v) Temperature: Not to exceed 90 degrees F. At no time is the temperature of the receiving waters to be increased more than 5 degrees F above intake temperature except that in estuarine waters the increase will not be more than 1.5 degrees F. In streams designated as trout or smallmouth bass waters by the State Game and Fish Division, there shall be no elevation or depression of natural stream temperatures.

(g) Wild River:

1. This classification will be applicable to any waters of the State when so designated by an authorized State or Federal Agency and will be effective simultaneously with that Agency's proper designation.

2. For all waters designated as "Wild River," there shall be no alteration of natural water quality from any source.

(h) Scenic River:

1. This classification will be applicable to any waters of the State when so designated by an authorized State or Federal Agency and will be effective simultaneously with that Agency's proper designation.

2. For all waters designated as "Scenic River," there shall be no alteration of natural water quality from any source.

(i) Urban Stream:

1. This classification is applicable to streams in highly developed urban areas.

(i) All conditions specified under **"General Criteria for All Waters"** [391-3-6-.03(5)] will apply, and in addition, the waters so classified are to be aesthetically compatible to adjacent areas.

(ii) Bacteria: Fecal coliform not to exceed a geometric mean of 2,000 per 100 ml based on at least four samples taken over a 30-day period and not to exceed a maximum of 5,000 per 100 ml.

(iii) pH: Within the range of 6.0 - 8.5.

(iv) Dissolved Oxygen: No less than 3.0 mg/l at any time.

(7) Natural Water Quality: It is recognized that certain natural waters of the State may have a quality that will not be within

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the general or specific requirements contained herein.

(8) **Treatment Requirements.** Notwithstanding the above criteria, the requirements of the State relating to secondary or equivalent treatment of all waste shall prevail. The adoption of these criteria shall in no way preempt the treatment requirements.

(9) **Streamflows.** Specific criteria or standards set for the various parameters apply to all flows on regulated streams. On unregulated streams, they shall apply to all streamflows equal to or exceeding to 7-day, 10-year minimum flow.

(10) **Mixing Zone.** Effluents released to streams or impounded waters shall be fully and homogeneously dispersed and mixed insofar as practical with the main flow or water body by appropriate methods at the discharge point. Use of a reasonable and limited mixing zone may be permitted on receipt of satisfactory evidence that such a zone is necessary and that it will not create an objectionable or damaging pollution condition.

(11) **Effective Date.** This Paragraph shall become effective on June 30, 1974.

391-3-6.04 Marine Sanitation Devices.

(1) **Purpose.** The purpose of Paragraph 391-3-6.04 is to prescribe procedures pertaining to construction, installation and operation of marine sanitation devices, facilities or methods of sewage disposal.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Act unless otherwise herein defined in this Paragraph or in any other Paragraph of these Rules.

(a) "Boat" means any vessel or watercraft whether moved by oars, paddles, sails, or other power mechanism, inboard or outboard, or any other vessel or structure floating upon the waters of this State whether or not capable of self locomotion, including, but not limited to, cabin cruisers, houseboats, barges and similar floating objects.

(b) "Marine Toilet" means any toilet on or within any boat.

(c) "Other Disposal Unit" means any device on or within any boat, other than marine toilet, which is intended for use in the disposal of human body wastes or sewage.

(d) "Blender" means any mechanical device capable of reducing sewage solids into a finely divided state such that a liquid disinfecting agent may be effectively dispersed throughout the blended sewage.

(e) "Marine Sanitation Devices" means any equipment for installation on a boat which is designed to receive, retain, treat, or discharge sewage or any process to treat such sewage.

(f) "Sewage," for the purposes of this Paragraph only, means water carried wastes, which are generated by human beings or their activities.

(3) **General Provisions.**

(a) Any marine toilet or other disposal unit located on or within any boat operated on waters of this State shall have securely affixed to the interior discharge toilet or unit a suitable marine sanitation device designed, constructed, and operated in accordance with requirements prescribed herein. All sewage passing into or through the marine toilet or other disposal unit shall discharge solely to the marine sanitation device.

(b) This Paragraph shall not apply to ocean going vessels of 20 tons displacement or more.

(4) **Waste Treatment Devices and Equipment.**

(a) All discharges from marine sanitation devices into or upon the waters of this State shall be in compliance with the Federal standards of performance and regulations for marine sanitation devices promulgated pursuant to Section 312 of the Federal Act.

(b) Until such time as said Federal standards and regulations are formally promulgated, the following interim requirements will apply:

1. Marine toilets shall be provided with a blender; a device for the addition of a disinfecting agent in such a manner that the disinfection will be thoroughly mixed with and dispersed throughout the blended sewage; and a detention chamber such that the blended sewage and the disinfecting agent will be in contact for not less than ten minutes but not so long as to cause the septic decomposition of the blended sewage. The treatment equipment shall be firmly fastened to the discharge outlet of the marine toilet. The disinfecting agent shall be a five-percent hypochlorite solution or some other solution approved by the Division.

2. An exception to the requirement that treatment equipment be fastened to the discharge outlet of a marine toilet shall be granted when such discharge outlet is connected to a holding tank located on the boat, provided that:

(i) such holding tank is constructed so as to prevent the removal of the sewage held herein except by pumping;

(ii) the holding tank is properly vented to the outside air in such fashion as not to foul up the interior of the boat structure;

(iii) chemicals which are added to the holding tank are only those approved by the Division; and

(iv) the contents of holding tanks are disposed of only through onshore facilities approved by the Division.

(c) All onshore discharges from marine sanitation devices or other disposal units shall be accomplished only at or through onshore facilities approved by the Division.

(d) Other wastes, including, but not limited to, garbage, rubbish and litter, shall be deposited onshore in approved receptacles for ultimate disposal in a manner prescribed by the Rules and Regulations of the Solid Wastre Management Section of the Division.

(5) **Right of Entry.** Personnel of the Division or other duly authorized agents of the Department shall have access to any boat at reasonable times for the purpose of determining whether or not there is compliance with the provisions of the Act and the rules of the Division.

(6) **Effective Date.** This Paragraph shall become effective June 30, 1974.

391-3-6-05 Emergency Actions.

(1) **Purpose.** The purpose of Paragraph 391-3-6.05 is to provide procedures to handle any emergency which endangers the waters of the State.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Act unless otherwise defined in this Paragraph or in any other Paragraph of these Rules.

(3) **Notice Concerning Endangering Waters of the State.** Whenever, because of an accident or otherwise, any toxic or taste-and-color producing substance, or any other substance which would endanger downstream users of the waters of the State or would damage property, is discharged into such waters, or is so placed that it might flow, be washed, or fall into them, it shall be the duty of the person in charge of such substances at the time to forthwith notify the Division in person or by telephone of the location and nature of the danger, and it shall be such person's further duty to immediately take all reasonable and necessary steps to prevent injury to property and downstream users of said water.

(4) **Emergency Orders.** The Director shall have the authority to issue an emergency order pursuant to Section 20 of the Act, and Section 17(a) of the Executive Reorganization Act of 1972, as amended.

(5) **Effective Date.** This Paragraph shall become effective on June 30, 1974.

391-3-6-.06 Waste Treatment and Permit Requirements.

(1) **Purpose.** The purpose of this Paragraph 391-3-6-.06 is to provide for the degree of waste treatment required and the uniform procedures and practices to be followed relating to the application for or the issuance or revocation of permits for the discharge of any pollutant into the waters of the State.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Act unless otherwise defined in this

Paragraph or in any other Paragraph of these Rules:

(a) "Effluent Limitation" means any restriction or prohibition established under the Act on quantities, rates, or concentrations, or a combination thereof, of chemical, physical, biological, or other constituents which are discharged from point sources into the waters of the State, including, but not limited to, schedules of compliance.

(b) "NPDES Permit Application" means any application filed by any person with the Director for an NPDES Permit.

(c) "NPDES Permit" means any permit issued by the Division to regulate the discharge of pollutants from any point source into the waters of the State.

(d) "Construction" means any placement, assembly, or installation of facilities or equipment (including contractual obligations to purchase such facilities or equipment) at the premises where such equipment will be used, including preparation work at such premises.

(e) "Concentrated animal feeding operation" means any point source which meets the criteria set forth in the Federal Regulations, 40 C.F.R. 122.54;

(f) "Concentrated aquatic animal production facility" means any point source which meets the criteria set forth in the Federal Regulations, 40 C.F.R. 122.55;

(g) "Aquaculture project" means any point source which meets the criteria set forth in the Federal Regulations, 40 C.F.R. 122.56;

(h) "Separate storm sewer" means any point source which meets the criteria set forth in the Federal Regulations, 40 C.F.R. 122.57;

(i) "Silvicultural point source" means any point source which meets the criteria set forth in the Federal Regulations, 40 C.F.R. 122.58;

(j) "New discharger" means any point source that meets the criteria set forth in the Federal Regulations 40 C.F.R. 122.3;

(k) "New Source" means any point source that meets the criteria set forth in the Federal Regulations 40 C.F.R. 122.3;

(l) "Major discharger" as defined in EPA annual operating guidance for the EPA Regional Offices and the States and specifically listed in the annual State program plan;

(m) "Indirect discharger" means a non-domestic discharger introducing pollutants to a publicly owned treatment works;

(n) "The term 'segment' means a portion of a water quality planning area, the surface waters of which have common hydrologic characteristics (or flow regulation patterns), common natural physical, chemical and biological characteristics and processes, and common reactions to external stresses, such as the discharge of pollutants. Segments will be classified as either a water quality segment or an effluent limitation segment as follows:

1. Water quality segment. Any segment where it is known that water quality does not meet applicable water quality standards and/or is not expected to meet applicable water quality standards even after the application of the effluent limitations required by sections 301(b)(1)(B) and 301(b)(2)(A) of the Act;

2. Effluent limitation segment. Any segment where it is known that water quality is meeting and will continue to meet applicable water quality standards or where there is adequate demonstration that water quality will meet applicable water quality standards after the application of the effluent limitations required by sections 301(b)(1)(B) and 301(b)(2)(A) of the Act."

(3) **Permit Requirement.**

(a) Any person discharging or proposing to discharge any pollutant from a point source into the waters of the State, under any of the circumstances described in Section 10(3) of the Act, shall obtain a permit from the Division to make such discharge.

(b) Any person discharging or proposing to discharge any pollutant from a non-point source into the waters of the State, under the circumstances described in Section 10(4) of the Act, shall obtain a permit from the Division to make such discharge.

(c) Any person owning or operating treatment works, from which a discharge into the waters of the State could possibly occur, excluding discharges which could result from Acts of God, shall apply to the Division for a permit.

(4) **Degree of Waste Treatment Required.**

(a) All pollutants shall receive such treatment or corrective action so as to insure compliance with the terms and conditions of the issued permit and with the following, whenever applicable:

1. Effluent limitations established by EPA pursuant to Sections 301 and 302 of the Federal Act.

2. Standards of performance for new sources established by the EPA pursuant to Section 306 of the Federal Act.

3. Effluent limitations and prohibitions and pretreatment standards established by the EPA pursuant to Section 307 of the Federal Act.

4. Criteria for the issuance of permits to aquaculture projects, as defined in this Paragraph, established by EPA pursuant to Section 318 of the Federal Act;

5. Criteria and standards for Best Management Practices established by EPA pursuant to Section 304(e) of the Federal Act;

6. Criteria and standards for imposing conditions for the disposal of sewage sludge established by EPA pursuant to Section 405 of the Federal Act;

7. Ensure consistency with the requirements of a Water Quality Management plan approved by EPA pursuant to Section 208(b) of the Act;

8. Criteria for ocean discharge established by EPA pursuant to Section 403(c) of the Act;

9. Incorporate alternative effluent limitations or standards where warranted by "fundamentally different factors";

10. Nothwithstanding the above, more stringent effluent limitations may be required as deemed necessary by the Division to meet (a) any other existing Federal laws or regulations, and (b) to insure compliance with any applicable State water quality standards, effluent limitations, treatment standards, or schedules of compliance.

11. With regard to any non-point source, such effluent limitations as are required to insure compliance with applicable State water quality standards.

(b) Calculations and specification of effluent limits and standards shall be made in accordance with the provisions of Federal Regulations, 40 C. F. R. 122.63 and 122.65.

(c) The foregoing requirements shall be applied in considering all applications made pursuant to Section 10 of the Act and no such application will be approved unless the waste treatment facilities contemplated thereby will achieve such limitations and standards upon completion thereof or within such reasonable time thereafter as the Division may provide.

(d) Until such time as such standards, limitations, and prohibitions are formally promulgated pursuant to Sections 301, 302, 306, and 307 of the Federal Act, the Division shall apply such standards, limitations, and prohibitions necessary to achieve the purposes of said sections of the Federal Act. With respect to individual point sources, such limitations, standards, or prohibitions shall be based upon an assessment of technology and processes, to wit:

1) To existing point sources, other than publicly owned treatment works, effluent limitations based on application of the best practicable control technology currently available;

2. To publicly owned treatment works, effluent limitations based upon the application of secondary treatment;

3. To any point source, other than publicly owned treatment works, whose construction commences after the effective date of this Paragraph, effluent limitations which reflect the greatest degree of effluent reduction which the Division determines to

be achievable through application of the best available demonstrated control technology, processes, operating methods, or other alternatives, including, where practicable, a standard permitting no discharge of pollutants.

4. To any point source, as appropriate, effluent limitations or prohibitions designed to prohibit the discharge of toxic pollutants in toxic amounts or to require pretreatment of pollutants which interfere with, pass through, or otherwise are incompatible with the operation of publicly owned treatment works; and

5. To any point source, as appropriate, more stringent effluent limitations as are required to insure compliance with applicable State water quality standards.

(e) To all new dischargers or new sources the following shall apply:

1. Except as provided in subparagraph (e)2. any new discharger on which construction commenced after October 18, 1972, or any new source, which meets the applicable promulgated new source performance standards before the commencement of discharge, shall not be subject to any more stringent new source performance standards, or to any more stringent technology-based standards under section 301(b)(2) of the Federal Act for the shortest of the following periods:

(i) Ten years from the date that construction is completed;

(ii) Ten years from the date the source begins to discharge process or other non-construction related wastewater; or

(iii) The period of depreciation or amortization of the facility for the purposes of Section 167 or 189 (or both) of the Internal Revenue Code of 1954.

Comment: The provisions of this subparagraph do not apply to existing sources which modify their pollution control facilities or construct new pollution control facilities and achieve performance standards, but which are neither new sources nor new dischargers or otherwise do not meet the requirements of this subparagraph.

2. The protection from more stringent standards of performance afforded by subparagraph (e)1. of this section does not apply to:

(i) Additional or more stringent permit conditions which are not technology based, e.g., conditions based on water quality standards, or effluent standards or prohibitions under Section 307(a) of the Federal Act; and

(ii) Additional permit conditions controlling pollutants listed as toxic under Section 307(a) of the Federal Act or as hazardous substances under Section 311 of the Federal Act and which are not controlled by new source performance standards. This includes permit conditions controlling pollutants other than those identified as toxic or hazardous where control of those other pollutants has been specifically identified as the method to control the toxic or hazardous pollutant.

3. Where an NPDES permit issued to a source enjoying a "protection period" under subparagraph (e)1. will expire on or before the expiration of the protection period, such permit shall require the owner or operator of the source to be in compliance with the requirements of Section 301 of the Federal Act and any other then applicable requirements of the Federal Act immediately upon the expiration of the protection period. No additional period for achieving compliance with these requirements shall be allowed.

4. The owner or operator of a new source, a new discharger, a source recommencing discharge after terminating operations, or a source which has been an indirect discharger which commences discharging into navigable waters shall install and have in operating condition, and shall "startup" all pollution control equipment required to meet the terms and conditions of its permits before beginning to discharge. Within the shortest feasible time (not to exceed 90 days), the owner or operator must meet all permit terms and conditions.

5. After the effective date of new source performance standards, in accordance with Section 306(e) of the Federal Act, it shall be unlawful for any owner or operator of any new source to operate such source in violation of those standards, applicable to such source.

(5) **Application for Permit.**

(a) Applications for permits under Section 10 of the Act shall be on forms as may be prescribed and furnished from time to time by the Division. Applications shall be accompanied by all pertinent information as the Division may require in order to establish effluent limitations in accordance with subparagraph 391-3-6-.06(4), including, but not limited to, complete engineering reports, schedule of progress, plans, specifications, maps, measurements, quantitative and qualitative determinations, records, and all related materials.

(b) Engineering reports, plans, specifications, and other material submitted to the Division shall be prepared by a Professional Engineer competent in the field of sewage and industrial waste treatment.

(c) Material submitted shall be complete and accurate.

(d) Any State or NPDES Permit Application form or any other NPDES form submitted to the Division shall be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;

2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

3. For a municipality, State, Federal, or other public facility, by either a principal executive officer or ranking elected official.

(e) All other reports or requests for information required by the permit issuing authority shall be signed by a person designated in (d) above or a duly authorized representative of such person, if:

1. The representative so authorized is responsible for the overall operation of the facility from which the discharge originates, e.g., a plant manager, superintendent or person of equivalent responsibility;

2. The authorization is made in writing by the person designated under (d) above; and

3. The written authorization is submitted to the Director.

(f) Any changes in the written authorization submitted to the permitting authority under (e) above which occur after the issuance of a permit shall be reported to the permitting authority by submitting a copy of a new written authorization which meets the requirements of (e) 1. and 2. above.

(g) Any person signing any document under (d) or (e) above shall make the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Comment: The permit application will be revised to incorporate this statement. Where a permit program document does not contain the statement, the certification must accompany the appropriate document.

(6) **Receipt and Use of Application and Data.**

(a) Applications for permits will be reviewed together with such other information as may be necessary to ascertain the effect of the discharge or any such pollutant upon the waters into which such pollutant will be discharged.

(b) Copies of the complete NPDES Permit Application received by the Division shall be transmitted to the Regional Administrator for any comment in such manner as the Director and the Regional Administrator shall agree.

(c) The Division shall receive any relevant data collected by the Regional Ad-

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ministrator prior to the Division's participation in the NPDES in such manner as the Director and the Regional Administrator shall agree.

(7) **Notice and Public Participation.**

(a) Tentative Determination and Draft Permits:

1. When the Division is satisfied that the application is complete, a tentative determination will be made to issue or deny the permit. If the tentative determination is to issue the permit, a draft permit will be prepared in accordance with Federal Regulations, 40 C.F.R. Section 124.31, and applicable State laws prior to the issuance of a public notice.

(b) Public Notice:

1. Public notice of every complete permit application will be prepared and circulated in a manner designed to inform interested and potentially interested persons of the proposed discharge and of the proposed determination to issue or deny a permit for the proposed discharge. Procedures for circulation of the public notice shall include the following:

(i) Within the geographical area of the proposed discharge the public notice shall be circulated by at least one of the following: posting in the post office or other public buildings near the premises of the applicant in which the discharge is located; posting at the entrance to the applicant's premises or nearby; or publication in one (1) or more newspapers of general circulation in the area of the applicant.

(ii) Posting of the public notice in the office of the Secretary of State.

(iii) A copy of the public notice shall be mailed to the permit applicant and a copy shall be available at the Division office in Atlanta.

(iv) Mailing of the public notice to any person or group upon written request. The Division shall maintain a mailing list for distribution of public notices and fact sheets. Any person or group may request that their names be added to the mailing list. The request should be in writing to the Division office in Atlanta and shall be renewed in December of each year. Failure to renew the request shall result in the removal of such name from the mailing list.

(v) The Division shall provide a period of not less than thirty (30) days following the date of the public notice in which interested persons may submit their written views on the tentative determination with respect to the NPDES Permit Application. All written comments submitted during the thirty (30) day comment period will be retained by the Division and considered in the final determination with respect to the permit application. The comment period may be extended at the discretion of the Director.

(vi) The contents of the public notice will be in accordance with Federal Regulations, 40 C.F.R. 124.32 (c), and applicable State laws.

(vii) The Division will prepare and distribute a fact sheet in accordance with Federal Regulations, 40 C.F.R. 124.33, and applicable State laws. A copy of the fact sheet will be available for public inspection at the Division office in Atlanta. Any person may request in writing a copy of the fact sheet and it will be provided. The Division shall add the name of any person or group upon request to the mailing list to receive copies of fact sheets.

(viii) The Director will notify other appropriate governmental agencies of each complete permit application and will provide such agencies an opportunity to submit their written views and recommendations in accordance with Federal Regulations, 40 C.F.R. 124.34, and applicable State laws.

(ix) Copies of the proposed permits shall be transmitted to the Regional Administrator for review and comments in such manner as the Director and Regional Administrator shall agree.

(x) The Division shall transmit to the Regional Administrator a copy of every issued NPDES Permit, immediately following issuance, along with any and all terms, conditions, requirements or documents which are part of such permit or which affect the authorization by a permit of the discharge of pollutants.

(xi) The Division shall transmit to the Regional Administrator a copy of every issued NPDES Permit, immediately following issuance, along with any and all terms, conditions, requirements or documents which are part of such permit or which affect the authorization by the permit of the discharge of pollutants.

(c) Public Hearings:

1. The Director shall provide an opportunity for an applicant, any affected state or interstate agency, the Regional Administrator or any other interested agency, person or group of persons to request a public hearing with respect to an NPDES Permit Application. Any such request for a public hearing shall be filed within the 30-day comment period prescribed in subparagraph 391-3-6-.06 (7)(b)(v) and shall indicate the interest of the party filing such a request, the reasons why a hearing is requested, and those specific portions of the application or other NPDES form or information to be considered at the public hearing. The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing.

2. Any public hearing held pursuant to this subparagraph shall be held in the geographical area of the proposed discharge or other appropriate location at the discretion of the Director.

3. The Director may hold one public hearing on related groups of permit applications.

4. Public notice of any hearing held pursuant to this sub-paragraph shall be provided at least thirty (30) days in advance of the hearing date and shall be circulated in accordance with Federal Regulations, 40 C.F.R. 124.37.

(d) Public Access to Information:

1. A copy of the NPDES Permit Application, public notice, fact sheet, draft permit and other NPDES forms related thereto, including written public comments thereon and other reports, files and information not involving methods of processes entitled to protection as trade secrets, shall be available for public inspection and copying during normal business hours at the Division office in Atlanta. Effluent data shall not be considered as information entitled to protection. Public access to such information shall be in accordance with Federal Regulations, 40 C.F.R. 124.35.

2. Any information submitted in an NPDES Permit Application form, together with reports, records or plans that are considered confidential by the applicant for an NPDES Permit should be clearly labeled "Confidential" and be supported by a statement as to the reasons that such information should be considered confidential. If the Director, with the concurrence of the Regional Administrator determines that such information is entitled to confidential protection, he shall label and handle same accordingly.

3. When the information being considered for confidential treatment is contained in an NPDES form, the Director shall forward such information to the Regional Administrator for his concurrence in any determination of confidentiality.

4. Any information accorded confidential status whether or not contained in an NPDES form shall be made available, upon written request, to the Regional Administrator or his authorized representative who shall maintain the information as confidential.

(8) **Terms and Conditions of Permits.**

(a) Terms and conditions under which the discharge will be permitted will be specified on the permit issued.

(b) No NPDES Permit shall be issued authorizing any of the following discharges:

1. The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into navigable waters.

2. Any discharge which the Secretary of the Army acting through the Chief of Engineers finds would substantially impair anchorage and navigation.

3. Any discharge to which the Regional Administrator has objected in writing pursuant to any right to object provided the Administrator of EPA under Section 402 (d) of the Federal Act; and

4. Any discharge from a point source which is in conflict with a plan or amendment thereto approved pursuant to Section 208(b) of the Federal Act.

5. Any discharge to the territorial sea, the waters of the contiguous zone, or the oceans in the following circumstances:

(i) Prior to the promulgation of the guidelines under section 403(c) of the Act, unless the Director determines permit issuance to be in the public interest; or

(ii) After promulgation of guidelines under section 403(c) of the Act, where insufficient information exists to make a reasonable judgment as to whether the discharge complies with any such guidelines.

6. To a facility which is a new source or a new discharger, if the discharge from the construction or operation of the facility will cause or contribute to the violation of water quality standards, except as in accordance with Federal Regulations 40 C.F.R. 122.52(c).

(c) The terms and conditions specified on the permit issued shall be in accordance with Federal Regulations, 40 C.F.R. 124.45 and 124.45 and applicable State laws and regulations promulgated thereunder.

(d) The issuance of a permit does not:

1. Convey any property rights of any sort, or any exclusive privileges;

2. Authorize any injury to private property or invasion of private rights, or any infringement of Federal, State, or local laws of regulations.

(9) **Publicly Owned Treatment Works.**

(a) If the permit is for a discharge from a publicly owned treatment works, assurance shall be obtained from the applicant prior to issuance of any permit that notice shall be provided to the Director of the following:

1. Any new introduction of pollutants into such treatment works from a source which would be a new source as defined in Section 306 of the Federal Act if such source were discharging pollutants;

2. Except as to such categories and classes of point sources or discharges specified by the Director, any new introduction of pollutants into such treatment works from a source which would be subject to Section 301 of the Federal Act if such source were discharging pollutants; and

3. Any substantial change in volume or character of pollutants being introduced into such treatment works by a source introducing pollutants into such works at the time of issuance of the permit.

(b) If the permit is for a discharge from a publicly owned treatment works, the permittee shall require any industrial user of such treatment works to comply with the requirements of Sections 204 (b), 307, and 308 of the Federal Act. As a means of insuring compliance with Section 307 of the Federal Act, the permittee shall require each industrial user subject to the requirements of said Section 307 to forward to the Director periodic notice of progress (over intervals not to exceed 9 months) toward full compliance with Section 307 requirements.

(c) If the permit is for a discharge from a publicly owned treatment works, the permittee shall identify, in terms of character and volume of pollutant, any significant indirect dischargers into such treatment works subject to pretreatment standards under Section 307(b) of the Federal Act and 40 C.F.R. 403.

(10) **Schedules of Compliance.**

(a) Any person who obtains an NPDES Permit or other discharge permit pursuant to the Act but who is not in compliance with applicable effluent standards and limitations or other requirements contained in such permit at the time same is issued, shall be required to achieve compliance with such standards and limitations or other requirements in accordance with a schedule of compliance as set forth in such permit, or in the absence of a schedule of compliance, by the date set forth in such permit which the Director has determined to be the shortest, reasonable period of time necessary to achieve such compliance.

(b) In any case where the period of time of compliance specified in sub-paragraph 391-3-6-.06(10)(a) of these Rules exceeds 9 months, a schedule of compliance shall be specified in the permit which will set forth interim requirements and the dates for their achievement. In no event shall more than 9 months elapse between interim dates, and, to the extent practicable, shall fall on the last day of the months of March, June, September and December.

(c) Within Fourteen (14) days after an interim date of compliance or the final date of compliance specified in such permit, the permittee shall provide the Director with written notice of his compliance or noncompliance with the requirements or conditions specified to be completed by such date. Failure to submit the written notice is just cause for the Division to pursue enforcement action pursuant to the Act.

(d) On the last working day of the months of February, May, August, and November, the Director shall prepare and submit to the Regional Administrator a list of all dischargers holding NPDES Permits which, as of the thirty (30) days prior to the date of the list, have submitted to the Director a report showing noncompliance with the requirements set forth in the permit and those which have not filed a timely report. The noncompliance list shall be available to the public at appropriate Division offices for inspection and copying, and shall contain the following information:

1. The name and address of each noncomplying permittee;

2. A concise description of the nature of noncompliance;

3. A description of proposed actions to be taken by the Division or the permittee to correct the noncompliance; and

4. Any other information deemed necessary by the Division to explain or mitigate an instance of noncompliance.

5. Any details which tend to explain or mitigate an instance of noncompliance.

(e) Noncompliance with NPDES permit requirements by major dischargers shall be reported in the following instances:

1. Failure to complete construction element(s);

2. Failure to complete or provide compliance schedule reports;

3. Noncompliance with applicable standards and limitations;

4. Failure to report effluent data;

5. Deficient reports such that the required reports cause misunderstanding by the Division and thus impede the review of the status of noncompliance;

6. Modifications to schedules of compliance constituting the basis for a modification under subparagraph 391-3-1-.06(12).

Comments: Noncompliance reported under paragraph (e) shall be reported in successive reports until the noncompliance is resolved. The resolution of noncompliance shall be reported, and when the noncompliance is reported as resolved, it will not appear in subsequent reports.

(f) Any discharger who fails or refuses to comply with an interim or final date of compliance specified in a permit may be deemed by the Director to be in violation of the permit and may be subject to enforcement action pursuant to the Act.

(11) **Monitoring, Recording and Reporting Requirements.** Any discharge authorized by a permit issued pursuant to the Act may be subject to such monitoring, recording and reporting requirements as may be reasonably required by the Director including the installation, use and maintenance of monitoring equipment or methods; specific requirements for recording of monitoring activities and results; and periodic reporting of monitoring results. The monitoring, recording and reporting requirements shall be specified in a permit when issued, provided, however, the Director may modify or require additional monitoring, recording and reporting by written notification to the permittee.

(a) The monitoring requirement of any discharge authorized by any such permit shall be consistent with Federal

Regulations, 40 C.F.R. 124.61 and applicable State laws.

(b) Any permit which requires monitoring of the authorized discharge shall comply with the recording requirements specified by Federal Regulations, 40 C.F.R. 124.62 and applicable State laws. The permittee shall be required to retain any records of monitoring activities and results for a minimum of three (3) years, unless otherwise required or extended by the Director upon written notification.

(c) Any holder of a permit which requires monitoring of the authorized discharge shall report periodically to the Division the results of all required monitoring activities on appropriate forms supplied by the Division. The Director shall notify the permittee of the frequency of reporting but in no case shall the reporting frequency be less than once per year.

(12) **Modification, Suspension and Revocation of Permits.**

(a) The Director may revise or modify the schedule of compliance set forth in an issued permit if the permittee requests such modification or revision in writing and such modification or revision will not cause an interim date in the compliance schedule to be extended more than one hundred twenty (120) days or affect the final date in the compliance schedule. If the permittee requests in writing a modification or revision of a schedule of compliance set forth in an issued permit which, if granted, would cause an interim date in the compliance schedule to be extended more than one hundred twenty (120) days or affect the final date in the compliance schedule, the Director may revise or modify such schedule of compliance if within thirty (30) days following receipt of notice of such request from the Director, the Regional Administrator does not object to same in writing and file such written objection with the Director. The Director may grant requests in accordance with this subparagraph if he determines after a documented showing by the permittee that good and valid cause (including Acts of God, strikes, floods, material shortages or other events over which the permittee has little or no control) exists for such revision.

(b) The Director may modify, suspend or revoke an issued permit in whole or in part during its term for cause, including, but not limited to, failure or refusal of the permittee to carry out the requirements listed in Federal Regulations, 40 C.F.R. 124.45(c), the causes listed in Federal Regulations, 40 C.F.R. 124.45(b), or the causes listed in the Act or regulations promulgated pursuant thereto, if within thirty (30) days following receipt of notice of such proposed modification, suspension or revocation from the Director, the Regional Administrator does not object to same in writing and file such written objection with the Director. Prior to any such modification, suspension or revocation of an issued permit by the Director (other than modification or revision of a compliance schedule pursuant to subparagraph (a) above or modification of monitoring, recording or reporting requirements), the Director will provide public notice in accordance with the procedures set forth in subparagraph 391-3-6.-06 (7)(b) and an opportunity for public hearing in accordance with the procedures set forth in subparagraph 391-3-6-.06 (7)(c).

(c) In the case of a POTW which has received a grant under Section 202 (a)(3) of the Federal Act to fund 100% of the costs to modify or replace facilities construction with a grant for innovative and alternative wastewater technology under Section 202(a)(2), the schedule of compliance may be modified to reflect the amount of time lost during construction of the innovative or alternative facility. In no case shall the compliance schedule be modified to extend beyond an applicable statutory deadline for compliance.

(d) New sources, new dischargers, sources which recommence discharging after terminating operations and those sources which had been indirect dischargers which commence discharging directly into navigable waters do not qualify for compliance schedules under this paragraph and are subject to Federal Regulations, 40 C.F.R. 122.66(d)(4).

(13) **Non-governmentally Owned Sewerage Systems.** In cases involving non-governmentally owned sewerage systems, a trust indenture or other legal contract or agreement, approved by the Division, assuring continuity of operation of the system, shall be filed with the application for a permit. This provision shall not be applicable to systems discharging only industrial waste.

(14) **Control of Disposal of Pollutants into Wells.** If the permit proposes to discharge to a well or subsurface water, the Director shall specify additional terms and conditions which shall (a) prohibit the proposed disposal, or (b) control the proposed disposal in order to prevent pollution of ground and surface water resources and to protect the public health and welfare. Any permit issued for the disposal of pollutants into wells shall comply with Federal Regulations, 40 C.F.R. 124.80, and applicable State laws.

(15) **Duration of Permits.** (a) Any permit issued under Section 10 (3) and (4) of the Act shall have a fixed term not to exceed five (5) years. Upon expiration of such permit, a new permit may be issued by the Director in accordance with Section 10 (6) of the Act and Federal Regulations, 40 C.F.R. 124.52, provided that an application for such new permit is filed with the Director at least 180 days prior to the expiration date of the existing permit. The issuance of such new permit shall likewise have a fixed term not to exceed five (5) years.

(b) A permit may be transferred to another person by a permittee in accordance with 40 C.F.R. 122.14 if:

1. The permittee notifies the Director of the proposed transfer;

2. A written agreement containing a specific date for transfer of permit responsibility and coverage between the current and new permittees (including acknowledgement that the existing permittee is liable for violations up to that date, and that the new permittee is liable for violations from that date on) is submitted to the Director; and

3. The Director within thirty (30) days does not notify the current permittee and the new permittee of the Division's intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

Comment: A new application will be required where the change of ownership is accompanied by a change or proposed change in process or wastewater characteristics or a change or potential change in any circumstances that the Director believes will affect the conditions or restrictions in the permit.

(c) When the permittee has submitted a timely and sufficient application for a new NPDES permit and the Director is unable, through no fault of the permittee, to issue the new permit before the expiration date of the existing permit, then the Director shall extend the existing permit until a new permit is issued.

(d) For those industrial categories for which EPA will establish effluent limitations based on best available technology, permits will be issued to insure compliance with the effluent limits by the statutory deadline. This will be accomplished by utilizing short term permits and/or reopener clauses that will allow the permit to be modified, revoked, or reissued to comply with limitations promulgated pursuant to the Act and subsequent regulations.

(e) Notwithstanding subparagraph (a) above, if a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Act for a toxic pollutant which is present in a discharge and such standard or prohibition is more stringent than any limitation for such pollutant in a permit, the permit shall be revised or modified in accordance with the

toxic effluent standard or prohibition and the permittee so notified.

(16) **Enforcement.** Any person who violates any provision of the Act, any rule promulgated and adopted pursuant thereto, or any term, condition, schedule of compliance or other requirement contained in a permit issued pursuant to the Act shall be subject to enforcement proceedings pursuant to the Act.

391-3-6-.07 Surface Water Withdrawals.

(1) **Purpose.** This chapter establishes procedures to be followed in obtaining a permit to withdraw, divert or impound surface waters of the State. It sets forth the types of information to be supplied on a permit application. It also outlines the procedures for granting, denying, revoking and modifying such permits.

(2) **Definitions.** Whenever a term appears in this Chapter which has been defined in the Georgia Water Quality Control Act (Ga. Laws 1964, p. 416 et seq., as amended) or which is defined below, such definition shall apply.

(a) "Withdrawal" shall mean the taking away of surface water from its natural course.

(b) "Diversion" shall mean, a turning aside or altering of the natural course of surface water.

(c) "Impoundment" shall mean the storing or retaining of surface water by whatever method or means.

(d) "Basin" shall mean the area from which surface runoff is carried away by a single drainage system.

(e) "Surface water(s) of the State" or "surface water(s)" shall mean any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs producing in excess of 100,000 gallons per day, and all other bodies of surface water, natural or artificial, lying within or forming a part of the boundaries of the State which are not entirely confined and retained completely upon the property of a single individual, partnership or corporation.

(f) "Director" shall mean the Director of the Environmental Protection Division of the Department of Natural Resources, State of Georgia.

(g) "Farm uses" shall mean irrigation of farmland, provision of water supply for farm animals, poultry, farming, or any other activity conducted in the course of farming operations.

(h) "Domestic and personal uses" shall mean uses of drinking, cooking, washing, sanitary purposes, and all health related activities.

(3) **Permit Required.**

(a) After July 1, 1977, any person who, on a monthly average, withdraws more than 100,000 gallons of surface water per day, diverts surface water so as to reduce the flow by more than 100,000 gallons per day at the point where the watercourse, prior to diversion, leaves the property on which the diversion occurs; or constructs an impoundment which reduces the flow of surface water by more than 100,000 gallons per day downstream of the impoundment, must obtain a permit from the Director prior to any such withdrawal, diversion or impoundment subject to the following exceptions:

1. Exceptions — No permit shall be required for the following:

(i) Any diversion accomplished as part of construction for transportation purposes which does not reduce the flow of surface waters in the diverted watercourse by more than 150,00 gallons per day on a monthly average;

(ii) Any withdrawal or diversion of surface waters for farm uses;

(iii) Any reduction of flow of surface waters during the period of construction of an impoundment, including the initial filling of the impoundment;

(iv) Any farm pond or farm impoundment constructed and managed for the sole purpose of fish, wildlife, recreation or other farm uses;

(v) Any withdrawal, diversion or impoundment of surface waters which is taking place as of July 1, 1977, for so long as it takes the Director to act upon an application for a permit to make such withdrawal, diversion or impoundment; provided such application has been filed with the Director within one hundred eighty (180) days after July 1, 1977, and provided further that such operation does not present an immediate health hazard to the public.

(4) **Permit Application.**

(a) All applications shall be on forms furnished by the Division.

(b) The applications shall include:

1. Name and address of applicant.
2. Dating of filing.
3. Source of water supply.
4. Quantity applied for.
5. Use to be made.
6. Place of use.
7. Location of withdrawal, diversion or impoundment plotted on a U.S. Geological Survey, 7½ minute quadrangle map or latest county highway map.
8. Any other information deemed necessary, provided however, any information already provided to the Director in connection with prior dealings with the Division may be incorporated into the application by specific and detailed reference and a statement that the information is still valid and correct.

(5) **System of Classification for Competing Permit Applications.**

(a) In situations involving competing applications for a supply of available surface water, the Division shall consider:

1. the number of persons using the particular water source and the object, extent and necessity of their respective withdrawals or uses;
2. nature and size of water source;
3. low flows during droughts of record;
4. any water quality of the water source which would adversely affect its availability or fitness for use;
5. the probable severity and duration of low flows, poor water quality or other impairments of the water source which would adversely affect its availability or fitness for use;
6. the injury to public health, safety or welfare which would result if such impairment were not prevented or abated;
7. the kinds of businesses or activities to which the various uses are related and the economic consequences;
8. the importance and necessity of the uses claimed by permit applicants and the extent of any injury or detriment caused or expected to be caused to other water uses;
9. diversion from or reduction of flows in other watercourses;
10. the prior investments of any person in lands, and plans for the usage of water in connection with such lands, which plans have been submitted to the Director within a reasonable time after July 1, 1977, provided that the granting of such a permit shall not have unreasonably adverse effects upon other water uses in the area including potential as well as present use;
11. the varying circumstances of each use.

(6) **Priorities for Competing Applications**

(a) When there are competing applications for water from the same source, and the source is insufficient to supply all applicants, the following order or priorities shall prevail:

1. Emergency facilities for essential life support measures.
2. Domestic and personal uses, including drinking, cooking, washing, sanitary purposes and all health related activities.
3. Processing perishable agricultural products where minimum quantities of water are required by state or federal law or regulation.
4. Industrial Uses (including those industries on public water systems).
5. Other uses such as lawn sprinkling, non-commercial car washing, garden watering, etc.
6. Outdoor recreational uses.

(b) Competing applications within the above categories shall be assigned a priority rating based upon a consideration of the facts set forth in subsection 391-3-6-.07(5) of these Rules. In the event two or more competing applicants qualify equally under the priority rating, the Director will grant permits to such competing applicants for use of specified quantities of

surface water on a prorated or other reasonable basis in those situations where such action is feasible, provided, however, that the Director will give preference to a renewal application over an initial application.

(c) Notwithstanding the above priorities, in any case where a permit applicant can prove to the Director's satisfaction that the applicant was withdrawing, diverting or impounding surface water prior to the effective date of this Section, the Division shall take into consideration the extent to which such prior withdrawal, diversion or impoundment was reasonably necessary in the judgment of the Director to meet his needs including the needs of any third party to whom the permit applicant was furnishing water for the processing of perishable agricultural products which require minimum quantities of water to comply with state or federal laws or regulations, and shall grant a permit which shall meet those reasonable needs, provided, however, that the granting of such permit shall not have unreasonable adverse effect upon other water uses in the area, including but not limited to public use and potential as well as present use, and provided, further, however, notwithstanding the above, that the Director shall grant a permit to any permit applicant who on the effective date of this Act has outstanding indebtedness in the form of revenue certificates or general obligation bonds which are being amortized through the sale of surface water, the permitted quantity of such shall be at least in an amount consistent with the quantity for which the revenue certificates or general obligation bonds were issued.

(7) **Duration of Permits.** Any permit granted for the withdrawal, diversion or impoundment of surface waters shall be for a period of times not less than ten (10) years (unless the applicant requests a shorter period of time) nor more than twenty (20) years; provided, however, the Director may authorize a permit of duration of up to fifty (50) years in the case of a municipality or other governmental body where such period is required to provide for the retirement of bonds for the construction of water works or waste disposal facilities.

(8) **Renewal of Permits.** All permittees desiring to renew their permit shall submit an application for renewal to the Director within six (6) months prior to its expiration. All renewals will be treated in the same manner as the initial permit.

(9) **Revocation, Suspension, or Modification of Permits.**

(a) Any permit granted for the withdrawal, diversion or impoundment of surface waters may be revoked, in whole or in part, permanently or temporarily, for the following reasons:

1. any material false statement in an application for a permit or in any report required to be made;

2. any willful violation of a condition of a permit;

3. nonuse of the water supply (or a significant portion thereof) allowed by a permit for a period of two (2) consecutive years or more, unless the permittee can reasonably demonstrate that his nonuse was due to extreme hardship caused by factors beyond his control;

4. with the written consent of the permittee.

(b) Any such permit may be revoked, in whole or in part, for a period not to exceed one (1) year for violation of any provision of Section 10(A) of the Georgia Water Quality Control Act.

(c) Any such permit may be suspended or modified if the Director should determine that the quantity of water allowed under the permit is greater than that needed by the permittee for the particular use upon which the application for permit was based.

(d) Any such permit may be revoked, suspended or modified for any other good cause consistent with the health and safety of the citizens of this State and within the provisions of this Act.

(e) In the event of modification, suspension or revocation of permit the Director shall serve written notice of such action on the permit holder and give the reason for such action.

(10) **Emergency Water Shortage.** Any permit may be suspended, restricted or otherwise modified by emergency order of the Director when an emergency period of water shortages exists. Prior to any such action, it must clearly appear to the Director from specific facts shown by affidavit of any resident of the affected area of this State that an emergency period of water shortage exists within such area, so as to place in jeopardy the health or safety of the citizens of such area or to threaten serious harm to the water resources of the area. Any permittee has five (5) days from the date of mailing of the notice of the proposed change in the permit to appear in opposition to the proposed action. Any change, suspension or restriction in the permit is effective immediately upon receipt of such order by the permittee, his agent for service of process, or any agent or employee of the permittee who receives the notification at the permittee's principal place of business in the State, but upon application, the permittee shall be afforded a hearing before a hearing officer appointed by the Department of Natural Resources within twenty (20) days of receipt of said application by the hearing officer. In the event of dire emergency, only water for domestic and personal uses, for drinking, cooking, washing, sanitary purposes and all health related activities will be permitted. All other usages will be established by the Director based on the priorities established in Subsection 391-3-6-.07(6). Upon expiration of the emergency period of water shortage, the permittee will be notified in writing of such expiration and the said permittee may then operate under the permit as issued prior to the emergency.

(11) **Request for Modification of Unexpired Permit.** A permittee may seek modification of any of the terms of an unexpired permit. The Director may modify such permit provided the permittee established at least one of the following:

(a) a change in conditions has resulted in a need by the permittee of more water than is allowed under the existing permit;

(b) the proposed modification would result in a more efficient utilization of water than is possible under the existing permit; or

(c) a proposed change in conditions would result in a need by the permittee of more water than is allowed under the existing permit. Any such modification shall be consistent with the health and safety of the citizens of this State and with the provisions of this Act.

(12) **Public Notification.**

(a) Interbasin Transfer Permits.

1. A press release regarding the proposed issuance of a permit for interbasin transfer of surface water shall be given to newspapers of general circulation in all areas which would be affected by such issuance.

2. The press release shall be issued at least seven (7) days before issuance of the permit.

3. If the Director determines sufficient public interest, he shall hold a hearing somewhere within the area affected prior to the issuance of the permit.

(b) Intrabasin Permits.

1. A press release regarding the issuance of a permit shall be sent to Counties for posting in the Courthouse of the County in which the withdrawal occurs.

2. A public notice regarding the proposed issuance of a permit shall be provided to one or more newspapers of general circulation in the area of the applicant.

3. A press release regarding the proposed issuance of a permit shall be issued by the Department of Natural Resources and released through its usual channels.

(13) **Records.** Whenever required to carry out the objectives of Section 10(A) of the Georgia Water Quality Control Act, the Director may by order, permit or otherwise, in writing, require any person holding a permit or any other person who the Director reasonably believes is unlawfully withdrawing, diverting or impounding surface waters to:

(a) establish and maintain records;

(b) make reports;

(c) install, use and maintain monitoring equipment or methods;

(d) other information as required; provided any information already provided to the Director in connection with prior dealing with the Division may be incorporated into the records or reports by specific and detailed reference and a statement that the information is still valid and correct.

(14) **Enforcement.** The administration and enforcement of these Rules shall be in accordance with the Georgia Water Quality Control Act and the Georgia Administrative Procedure Act.

(15) **Effective Date.** This rule shall become effective on February 22, 1978.

391-3-6-.08 Pretreatment and Permit Requirements.

(1) **Purpose.** The purpose of this Paragraph 391-3-6-.08 is to provide for the degree of wastewater pretreatment required and the uniform procedures and practices to be followed relating to the application for and the issuance or revocation of pretreatment permits for the discharge of any pollutant into a publicly owned treatment works and then into the waters of the State.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Act unless otherwise defined in this Paragraph or in any other Paragraph of these Rules;

(a) "Act" means the Georgia Water Quality Act, as amended.

(b) "Federal Act" means the Federal Water Pollution Control Act, also known as the Clean Water Act, as amended.

(c) "Significant source" means any industrial user that:

1. is subject to any national pretreatment standard promulgated by the Environmental Protection Agency (EPA) in accordance with Section 307(b) and (c) of the Federal Act;

2. has in its waste a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of the Federal Act; or

3. significantly interferes with, either singly or in combination with other contributing industries, the treatment works or the quality of its effluent.

(d) "Limitation" means any restriction or prohibition established under the Act on quantities, rates, or concentrations, or a combination thereof, of chemical, physical, biological, or other constituents which are discharged from significant sources into a publicly owned treatment works and then into the waters of the State, including but not limited to schedules of compliance.

(e) "Pretreatment permit application" means an application filed by any person with the Director for a pretreatment permit.

(f) "Pretreatment permit" means any permit issued by the Division to regulate the discharge of pollutants from any significant source into a publicly owned treatment works and the waters of the State.

(g) "Industrial User" means any person discharging or proposing to discharge any pollutant into a publicly owned treatment works and then into waters of the State.

(h) "Interference or Interfere" means inhibition or disruption of a Publicly Owned Treatment Works' (POTW's) sewer system, treatment processes or operations which causes or significantly contributes to a violation of any requirement of its NPDES Permit. The term includes prevention of sewage sludge use or disposal in accordance with Section 405 of the Federal Act, or any criteria, guidelines, or regulations developed pursuant to State or Federal water, land or air protection laws.

(i) "Person" means any individual, corporation, company, association, partnership, county, municipality, State agency, Federal agency or facility or other entity.

(3) **Pretreatment Permit Requirement**

(a) Any person discharging or proposing to discharge any pollutant from a significant source into a publicly owned treatment works and then into the waters of the State, under any of the circumstances described in Section 10(3) of the Act, shall obtain a permit from the Division to make such a discharge, unless such discharge is to a publicly owned treatment works operating under a pretreatment program approved by the Director.

(4) **Degree of Pretreatment Required**

(a) All pollutants discharged from a significant source to a publicly owned treatment works and then into the waters of the State shall receive such pretreatment or corrective action so as to insure compliance with the terms and conditions of the issued pretreatment permit and with the following whenever applicable:

1. Limitations, prohibitions and pretreatment standards and requirements promulgated by the EPA pursuant to Section 307 of the Federal Act.

2. Until such time as such limitations, prohibitions and pretreatment standards and requirements are formally promulgated pursuant to Section 307 of the Federal Act, the Division shall apply such limitations, prohibitions and pretreatment standards necessary to achieve the purposes of said Section of the Federal Act. With respect to the significant sources, such limitations, prohibitions or pretreatment standards shall be based upon an assessment of technology and processes to wit:

(i) to existing significant sources limitations or pretreatment standards and requirements based on application of the best demonstrated control technology currently available;

(ii) to any significant source whose construction commences after the effective date of this Paragraph, pretreatment standards and requirements which reflect the greatest degree of effluent reduction which the Division determines to be achievable through the application of best demonstrated control technology currently available, or changes in processes or operating methods or other alternatives including where practical any standard permitting no discharge of pollutants.

3. Notwithstanding the above, more stringent pretreatment may be required as deemed necessary by the Division to meet:

(i) any other existing Federal laws or regulations;

(ii) to insure compliance with any applicable State water quality standards, effluent limitations, pretreatment standards and requirements, or schedule of compliance;

(iii) to insure there is no interference with the operation of a POTW.

4. To any significant source, as appropriate, pretreatment standards and requirements designed to prohibit the discharge of toxic pollutants in toxic amounts which interfere with, pass through, prevents the use or disposal of sewage sludge, or otherwise interferes with the operation of publicly owned treatment works.

5. The foregoing requirements shall be applied in considering all applications for pretreatment permits made pursuant to Section 10 of the Act and no such application shall be approved unless the pretreatment facilities will achieve such pretreatment standards and requirements within such reasonable time thereafter as the Division may require.

(5) **Application for Pretreatment Permit.**

(a) Applications for pretreatment permits under Section 10 of the Act shall be on forms as may be prescribed and furnished from time to time by the Division. Applications shall be accompanied by all pertinent information as the Division may require in order to establish pretreatment standards and requirements in accordance with Sub-Paragraph 391-3-6-.08(4), including but not limited to complete engineering reports, schedule of progress, plans, specifications, maps, measurements, quantitative and qualitative determinations, records and all related materials.

(b) Engineering reports, plans, specifications and other materials submitted to the Division in support of a pretreatment application shall be prepared by a professional engineer, competent in

the field of sewage and industrial waste treatment.

(c) Materials submitted shall be complete and accurate.

(d) Any pretreatment permit application forms of any other forms submitted to the Division shall be signed as follows:

1. for a corporation by a principal executive officer of at least the level of vice president, or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the pretreatment permit application form originates;

2. for a partnership by a general partner;

3. for a sole proprietorship by the proprietor;

4. for a municipal, state or other public facility by either a principal executive officer, ranking elected official or other duly authorized employee.

(6) **Receipt and Use of Pretreatment Permit Application Forms and Data.**

(a) Applications for pretreatment permits will be reviewed together with such other information as may be necessary to ascertain the effect of the discharge of any pollutant into a publicly owned treatment works and then into the waters of the State.

(b) The Division shall receive any relevant data collected by the owner or operator of the publicly owned treatment works which will receive the discharge from the significant source intended to clarify or support the pretreatment permit application.

(c) Any information submitted in a pretreatment permit application form, together with reports, records or plans that are considered confidential by the applicant for a pretreatment permit should be clearly labeled "Confidential" and be supported by a statement as to the reasons that such information should be considered confidential. If the Director determines that such information is entitled confidential protection, he shall label and handle the same accordingly.

(7) **Notice and Public Participation.**

(a) Tentative determination and draft permits:

1. When the Division is satisfied that the application is complete, a tentative determination will be made to issue or deny the pretreatment permit. If the tentative determination is to issue the permit, a draft permit will be prepared in accordance with applicable Federal regulations and State laws prior to the issuance of a public notice. If the tentative determination is to deny the permit the applicant will be notified in writing by the Director and such notification shall include suggested revisions and modifications necessary to meet the requirements for a pretreatment permit.

(b) Public Notice:

1. Public notice of every approvable pretreatment permit application will be prepared and circulated in a manner designed to inform interested and potentially interested persons of the proposed discharge and of the proposed determination to issue a permit for the proposed discharge by a significant source into a publicly owned treatment works and then into the waters of the State. Procedures for circulation of the public notice shall include the following:

(i) publication in one (1) or more newspapers of general circulation in the area of the applicant;

(ii) a copy of the public notice shall be mailed to the pretreatment permit applicant and the owner or operator of the publicly owned treatment works that is to receive the discharge from the significant source. A copy shall be available for review and inspection at the Division office in Atlanta;

(iii) mailing of the public notice to any persons or group upon written request to the Division. The Division shall maintain a mailing list for distribution of public notices for pretreatment permits. Any person or group may request that their names be added to the mailing list. The request should be in writing to the Division office in Atlanta and shall be renewed in December of each year. Failure to renew the request shall result in the removal of such name from the mailing list for pretreatment permit notification;

(iv) a copy of the public notice shall be available for review and inspection at the Division office in Atlanta;

(v) the Division shall provide a period of not less than thirty (30) days following the date of the public notice in which interested persons may submit their written views on the tentative determination with respect to the pretreatment permit application. All written comments submitted during the 30 day comment period will be retained by the Division and considered in the final determinations with respect to the pretreatment permit application. The comment period may be extended at the discretion of the Director.

(c) Public Hearing:

1. The Director shall provide an opportunity for an applicant, any affected state or interstate agency, or any other interested agency, person or group of persons to request a public hearing with respect to a pretreatment permit application. Any such request for a public hearing shall be filed with the thirty (30) day, comment period prescribed in Sub-Paragraph 391-3-6-.08 (7)(b) 1.(v) and shall indicate the interest of the party filing such requests, reasons why a hearing is requested and those specific portions of the application or other pretreatment form or information to be considered at the public hearing. The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing.

2. Any public hearing held pursuant to this Sub-Paragraph shall be held in geographical area of the proposed discharge to the publicly owned treatment works and then into the waters of the State or other appropriate location at the discretion of the Director.

3. The Director may hold one public hearing on related groups of pretreatment permit applications.

4. Public notice of any hearing held pursuant to this Sub-Paragraph shall be provided at least thirty (30) days in advance of the hearing date and shall be circulated in accordance with the public notification procedures in Sub-Paragraph 391-3-6-.08(7)(b).

(8) **Terms and Conditions of Pretreatment Permits.**

(a) Terms and conditions under which the discharge will be permitted will be specified on the permit issue for the significant source to discharge into the publicly owned treatment works and then into the waters of the State.

(b) No pretreatment permit shall be issued authorizing the discharge into a publicly owned treatment works and then into the waters of the State of any radiological, chemical or biological warfare agent or high-level radioactive waste.

(c) Schedule of compliance:

1. Any person who obtains a pretreatment permit pursuant to the Act but who is not in compliance with applicable pretreatment standards and limitations or other requirements contained in such permit at the time same is issued, shall be required to achieve compliance with such pretreatment standards and limitation or other requirements in accordance with the schedule of compliance as set forth in such permit, or in the absence of a schedule of compliance, by the date set forth in such permit which the Director has determined to be the shortest, reasonable period of time necessary to achieve compliance.

2. Within 14 days after an interim date of compliance or the final date of compliance specified in a pretreatment permit, the permittee shall provide the Director with written notice of his compliance or non-compliance with the requirements and conditions specified to be completed by such date. Failure to submit the written notice is just cause for the Division to pursue enforcement action pursuant to the Act.

3. A permittee who fails or refuses to comply with an interim or final date of compliance specified in a pretreatment permit may be deemed by the Director to be in violation of the permit and may be subject to enforcement action pursuant to the Act.

(d) Monitoring, recording and reporting requirements:

1. Any discharge to a publicly owned treatment works and then into the waters of the State authorized by a pretreatment permit issued pursuant to the Act may be subject to such monitoring, recording and reporting requirements as may be reasonably required by the Director including the installation, use and maintenance of monitoring equipment or methods; specific requirements for recording of monitoring activities and results; and periodic reporting of monitoring results. The monitoring, recording and reporting requirements shall be specified in a permit when issued, provided however the Director may modify or require additional monitoring, recording and reporting by written notification to the permittee.

2. The permittee shall be required to retain any records of monitoring activities and results for a minimum of three (3) years, unless otherwise required or extended by the Director upon written notification.

3. Any holder of a permit which requires monitoring of the authorized discharge into a publicly owned treatment works and then into the waters of the State shall report periodically to the Division results of all required monitoring activites on appropriate forms supplied by the Division. The Division shall notify the permittee of the frequency of reporting but in no case shall the reporting frequency be less than twice per year.

(9) **Modification, suspension and revocation of pretreatment permits:**

(a) The Director may revise or modify the schedule of compliance set forth in an issued pretreatment permit if the permittee requests such modification or revision in writing and such modification or revision will not cause an interim date in the compliance schedule to be extended more than 120 days or affect the final date in the compliance schedule. If the permittee requests in writing the modification or revision of a schedule of compliance set forth in an issued pretreatment permit which, if granted, would cause an interim date in the compliance schedule to be extended more than 120 days or affect the final date in the compliance schedule, the Director may revise or modify such schedule of compliance provided it is in accordance with promulgated Federal regulations. The Director may grant requests in accordance with this Sub-Paragraph if he determines after documented showing by the permittee that good and valid cause, including acts of God, strikes, floods, material shortages or other events over which the permittee has little or no control, exists for such revision.

(b) The Director may modify, suspend or revoke an issued pretreatment permit in whole or in part during its term for cause, including, but not limited to, failure or refusal of the permittee to carry out the requirements of the Act or regulations promulgated pursuant thereto and/or promulgated Federal regulations, if within 30 days following receipt of such notice of such proposed modifications, suspension or revocation from the Director there is no objection by the permittee in writing. Prior to any such modifications, suspension or revocation of an issued pretreatment permit by the Director (other than modification or revision of compliance schedule pursuant to Sub-Paragraph (a) above or modification of the monitoring, recording or reporting requirements), the Director will provide public notice in accordance with the procedures set forth in Sub-Paragraph 391-3-6-.08(7)(b). If the permittee files an objection in writing within the specified 30 day period such permittee shall be granted a hearing before a hearing officer appointed by the Board of Natural Resources. The initial hearing and any administrative review thereof shall be conducted in accordance with Section 17(a) of the Executive Reorganization Act of 1972, as amended.

(10) **Duration of Pretreatment Permits.**

(a) Any pretreatment permit issued under Section 10(3) and 10(4) of the Act shall have a fixed term not to exceed five years. Upon expiration of such permit a new pretreatment permit may be issued by the Director in accordance with Section 10(6) of the Act and promulgated Federal regulations, provided that an application for such new pretreatment permit is filed with the Director at least 180 days prior to the expiration date of the existing permit. The issuance of such new pretreatment permit shall likewise have a fixed term not to exceed five years.

391-3-6-.09 Publicly Owned Treatment Works Pretreatment Programs.

(1) **Purpose.** The purpose of Paragraph 391-3-6-.09 is to provide uniform procedures and practices to be followed for POTW Pretreatment Program requirements, the development and submission of POTW Pretreatment Programs for Division review and approval or denial and the public notification methods to be used.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Act unless otherwise defined in this Paragraph or in any other Paragraph of these Rules:

(a) "Publicly Owned Treatment 'Vorks" or "POTW" means the city, town, county, district, association, or other public body created by or pursuant to State law or Federal law that owns and operates a treatment works and, where approprite, shall include the treatment works, and any sewers or other appurtenances that convey wastewater to the treatment works.

(b) "Submission" means a request to the Director for approval of a Pretreatment Program by a POTW.

(3) **Required POTW Pretreatment Programs.**

(a) Any POTW or combination of POTW's operated by the same authority with a total design flow greater than 5 million gallons per day (mgd) and receiving pollutants from industrial users which may pass through untreated or interfere with the operation of the POTW or are otherwise subject to Section 307(b) or 307(c) of the Federal Act will be required to establish a POTW Pretreatment Program.

(b) The Director may require in writing that a POTW with a design flow of 5 mgd or less develop a POTW Pretreatment Program if he finds that the nature or volume of the industrial influent, treatment process upsets, violations of POTW effluent limitations, contamination of municipal sludge or other circumstances warrant a pretreatment program in order to prevent interference with the POTW or pass through of untreated pollutants.

(c) Any POTW described in Sub-Paragraphs (a) and (b) of the Sub-Section must obtain approval of its POTW Pretreatment Program no later than 3 years after the reissuance or modification of its existing NPDES permit, but in no case later than July 1, 1973. POTW's whose NPDES permits are modified under Section 301(h) of the Federal Act shall have a pretreatment program within less than three (3) years as provided by 40 CFR Part 233.

(d) The POTW Pretreatment Program shall meet the criteria set forth in 40 CFR 403.8(f) and shall be capable of being administered by the POTW to ensure compliance by the industrial users with applicable State and Federal pretreatment standards and requirements in order to be approved by the Director.

(e) The Director may hold a public hearing in the geographical area served by any POTW which fails to comply with the

Director's finding and written directive that a pretreatment program is required and a draft submission must be developed and submitted to the Division within sixty (60) days. The public hearing will be held to advise the public, the industrial users and other concerned parties that the Division will establish and operate the pretreatment program necessary to meet the Federal requirements as a result of the failure to the POTW to carry out its legal responsibility. The appropriate POTW, city or municipal officials will be requested to appear at the public hearing to explain the reasons why they failed to comply with the Director's finding and directive. For any public hearing held pursuant to this Sub-Paragraph a public notice shall be provided at least forty-five (45) days in advance of the hearing date and shall be published and circulated in accordance with Sub-Paragraph 391-3-6-.09(5)(a).

(f) A POTW requesting approval of a POTW Pretreatment Program shall develop a program submission which includes the information set forth in 40 C.F.R. 403.9, 403.8(f) and 40 C.F.R. 403.7(b) and (c) where appropriate. Any other pertinent information requested by the Director as being necessary to clarify, support or supplement the program description must also be submited.

(4) **POTW Pretreatment Program Approval or Denial.**

(a) When the Division is satisfied that a POTW Pretreatment Program meets the requirements of 40 C.F.R. 403.8(f), 403.9 and/or 403.7(b) and (c) as appropriate or such other requirements as may be prescribed by the Director, a tentative determination for approval will be prepared.

(b) When the Division determines that the POTW Pretreatment Program does not meet the requirements of Sub-Paragraph (a) of this Sub-Section, the Director shall notify the POTW in writing as appropriate. This notification shall include suggested revisions and modifications necessary to bring the program into compliance with the applicable requirements. Unless the necessary revisions and modifications are made within the time period specified by the Director in his notification of denial, the Division will proceed to develop and implement a pretreatment program for the area served by the POTW in accordance with Paragraph 391-3-6-.08.

(5) **Notice and Public Participation.**

(a) Tentative Determination for POTW Pretreatment Program Approval.

1. When the Division is satisfied that a POTW Pretreatment Program submission meets the requirements of 40 C.F.R. 403, a public notice will be issued to advise that a request has been made for approval of the submission. This public notice shall be published and circulated in a manner designed to inform interested and potentially interested persons of the submission. Procedures for circulation of the public notice shall include the following:

(i) mailing to adjoining State whose waters may be affected;

(ii) mailing to designated 208 planning agencies, Federal and State fish, shellfish and wildlife resource agencies, upon request to other appropriate government agencies, and to any other person or group, including those on the appropriate Division mailing list;

(iii) publication in the largest daily newspapers of the city or municipality in which the POTW Pretreatment Program has been established;

(iv) mailing to the chief elected official of the city or municipality requesting approval of the POTW Pretreatment Program submission;

(v) a copy will be available at the Division office in Atlanta;

(vi) the Division shall provide a period of not less than forty-five (45) days following the date of the public notice during which interested persons may submit their written views on the submission. All written comments submitted during the forty-five (45) day period will be retained by the Division and considered in the decision on whether or not to approve the submission. The comment period may be extended at the discretion of the Director;

(vii) the contents of the public notice will be in accordance with appropriate Federal requirements and applicable State laws.

(2) The Director shall provide an opportunity for the applicant, any affected State, any interested State or Federal agency, person or group of persons to request a public hearing with respect to the submission. Any such request for a public hearing shall be filed within the forty-five (45) day comment period described in Sub-Paragraph (vi) of this Paragraph and shall indicate the interest of the person filing such request and the reason why a hearing is warranted. The Director shall hold the hearing if he determines that there is sufficient public interest in holding such a hearing.

(3) Any public hearing held pursuant to this Sub-Paragraph shall be held in the geographical area of the applicable submission or other appropriate location at the discretion of the Director. The Director may hold one public hearing on related groups of submissions in the same geographical area.

(4) Public notice of any hearing held pursuant to this Sub-Paragraph shall be provided at least forty-five (45) days in advance of the hearing date and shall be circulated in accordance with Sub-Paragraph 391-3-6-.09(5)(a).1.

(b) Final Determination for POTW Pretreatment Program Approval or Denial.

1. At the conclusion of the public notice comment period or the public comment period allowed following a public hearing, the Director shall make a determination to approve the POTW Pretreatment Program or deny approval to the program based on the requirements of Sub-Paragraph 391-3-6-.09(4)(a) and taking into consideration the comments submitted during the comment period and the record of the public hearing. When the Director has made a determination to deny approval to the program the POTW shall be notified in writing in accordance with Sub-Paragraph 391-3-6-.09(4)(b).

2. When the Director has made a determination to approve the submission, a public notice will be issued to advise of the decision. This public notice shall be published and circulated in a manner designed to inform interested and potentially interested persons of the decision. Procedures for circulation of the public notice shall include the following:

(i) publication in the same newspaper as the original notice of request for approval of the submission was published;

(ii) mailing to those persons who submitted comments and participated in the hearing for approval or disapproval of the submission;

(iii) the Director shall identify in any public notice for approval of the submission and authorization to modify the categorical standards which the city or municipality has requested in accordance with 40 C.F.R. 403.7(b) and/or (c) for removal of pollutants subject to pretreatment standards;

(iv) the Director shall insure that the submission and any comments upon said submission are available to the public for inspection and copying at the Division offices in Atlanta during normal business hours;

(v) mailing to adjoining State whose waters may be affected;

(vi) mailing to designated 208 planning agencies, Federal and State fish, shellfish and wildlife resource agencies, upon request to other appropriate government agencies, and to any other person or group including those on the appropriate Division mailing list.

(6) **Notification of POTW Pretreatment Program Approval.**

(a) Notification of any final approval of a POTW Pretreatment Program will be forwarded to the POTW in writing including any conditions or special requirements for compliance schedules, monitoring and reporting both for the POTW and the industrial user in accordance with 40 C.F.R. 403.12.

(b) When the POTW accepts the approval and any specific conditions or re-

quirements that are a part of the approval notification by the Director, procedures will be started to revise, modify and reissue the NPDES discharge permit to include the authority to operate a POTW pretreatment Program as a part of the NPDES permit.

39-3-6-.10 Determinations of Categorization of Industrial Users and Requests for Fundamentally Different Factors Variances.

(1) **Purpose.** The purpose of Sub-Paragraph 391-3.6-.10 is to provide for uniform procedures and practices to be followed for the determination of categorization of industrial users and requests for variances for fundamentally different factors. Such determinations will be applicable to the approved local POTW Pretreatment Programs and the pretreatment programs supervised and operated by the Division.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Act unless otherwise defined in the Paragraph or in any other Paragraph of these Rules.

(3) **Determinations on Categorization of Industrial Users and Requests for Fundamentally Different Factor Variances.**

(a) Within thirty (30) days after the effective date of a pretreatment standard for a sub-category under which an industrial user believes itself to be included, the industrial user may request that the Director provide written certification to the effect that the industrial user does or does not fall within that particular category. Each request shall contain a statement:

1. describing which sub-categories might be applicable;

2. citing evidence and reasons why a particular subcategory is applicable and why others are not applicable. Each statement shall contain an oath stating that the facts contained therein are true on the basis of the applicant's personal knowledge or to the best of his information and belief. The oath shall be attested to by a notary public.

(b) The Director will act only on written requests for determinations that contain all of the information required. Persons who have made incomplete submissions will be notified by the Director that their requests are deficient and unless the time period is extended they will be given thirty (30) days to correct the deficiency. If the deficiency is not corrected within thirty (30) days or within an extended period allowed by the Director the request for a determination shall be denied.

(c) When the Director determines that all of the information required by the Sub-Paragraph, any additional evidence that may have been requested and any other available information relevant to the request has been submitted, he will make a written determination of the applicable sub-category and state the reasons for his determination. The Director shall forward the written determination described in this Sub-Paragraph to the Regional Administrator of EPA who may make a final determination. If the Regional Administrator does not modify the Director's decision within sixty (60) days after receipt thereof, the Director's decision is final.

(d) The Director shall send a copy of his determination to the persons making the request. When the final determination is made by the Regional Administrator of EPA, he shall send a copy of his determination to the Director and the Director will forward it to the person that made the request.

(e) If an industrial user fails either to seek the certification referred to in Sub-Paragraph 391-3-6-.10(3) within the prescribed 30-day period or to contest a negative determination through administrative channels provided, they will be bound by a subsequent determination made by the Director as to the sub-category under which an industrial user should be included.

(4) **Fundamentally Different Factors Variances.**

(a) Requests for a variance from categorical pretreatment standards for fundamentally different factors and supporting evidence must be submitted in writing to the Director within 90 days after promulgation by the EPA of the categorical pretreatment standards.

1. Written submissions for variance requests submitted to the Director must include:

(i) the name and address of the person making the request;

(ii) identification of the interest of the requestor which is affected by the categorical pretreatment standard for which the variance is requested;

(iii) identification of the POTW currently receiving the waste from the industrial user for which alternative discharge limits are requested;

(iv) identification of the categorical pretreatment standards which are applicable to the industrial user;

(v) a list of each pollutant or pollutant parameter for which an alternative discharge limit is sought;

(vi) the alternative discharge limits proposed by the requestor for each pollutant or pollutant parameter identified in Item (v) of this Paragraph;

(vii) a description of the industrial user's existing water pollution control facilities;

(viii) a schematic flow representation of the industrial user's water system including water supply processed wastewater systems, and points of discharge; and

(ix) a statement of facts clearly establishing why the variance requests should be approved, including detailed support data, documentation, and evidence necessary to fully evaluate the merits of the request, including technical and economic data collected by the EPA and used in developing each pollutant discharge limit in the pretreatment standard.

(b) The Director will only act on written requests for variances that contain all of the information required. Persons who have made incomplete submissions will be notified by the Director that their requests are deficient and unless the time period is extended, will be given thirty (30) days to correct the deficiency. If the deficiency is not corrected within the thirty (30) days or within an extended period allowed by the Director, the request for variance shall be denied.

(c) When the Director receives a submittal from a person making a request, he will, after determining that it contains all of the information required by Paragraph (b) of this Section, consider the submission, any additional evidence that may have been requested, and any other available information relevant to the request. The Director will then make a written finding indicating whether or not there are factors which are fundamentally different for that industrial user, for those factors considered in the development of the appropriated categorical pretreatment standards. This preliminary finding will include the reasons as to whether or not the variances should be granted.

(d) When the Director finds that fundamentally different factors do not exist, he may deny the request and notify the requestor and the industrial user, where they are not the same, of the denial.

(e) When the Director finds that fundamentally different factors do exist, he shall forward the request and a written recommendation that the request be approved to the Regional Administrator of EPA. If upon review of the recommended approval submitted by the Director, the Regional Administrator of EPA finds that fundamentally different factors do exist and that a partial or full variance is justified, he will approve the variance.

391-3-6-.11 Land Disposal and Permit Requirements.

(1) **Purpose.** The purpose of this Paragraph 391-3-6.11 is to provide for the degree of pollutant treatment required and the uniform procedures and practices to be

followed relating to the application for and the issuance or revocation of permits for the discharge of pollutants into land disposal or land treatment systems and then into the waters of the State.

(2) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with the definitions as set forth in the Act unless otherwise defined in this Paragraph or in any other Paragraph of these Rules.

(a) "Act" means the Georgia Water Quality Contol Act, as amended;

(b) "Land disposal system" means any method of disposing of pollutants in which the pollutants are applied to the surface or beneath the surface of a parcel of land and which results in the pollutants percolating, infiltrating, or being absorbed into the soil and then into the waters of the State. Land disposal systems exclude landfills and sanitary landfills but include ponds, basins, or lagoons used for disposal of wastes or wastewaters, where evaporation and/or percolation of the wastes or wastewaters are used or intended to be used to prevent point discharge of pollutants into waters of the State. Septic tank systems, as defined in Chapter 270-5-25-.01 and as approved by appropriate County Boards of Public Health, are not considered land disposal systems for purposes of Chapter 391-3-6-.11;

(c) "Land treatment system" means any land disposal system in which vegetation on the site is used to remove some of the pollutants applied;

(d) "Treatment requirement" means any restriction or prohibition established under the Act or quantities, rates, or concentrations, or a combination thereof, of chemical, physical, biological, or other constituents which are discharged into a land disposal or land treatment system and then into the waters of the State, including but not limited to schedules of compliance;

(e) "Land disposal system permit application" means an application filed by any person with the Director for a land disposal system permit;

(f) "Land disposal system permit" means any permit issued by the Division to regulate the discharge of any pollutant into a land disposal or land treatment system;

(g) "Hydraulic loading rate" is the rate at which wastes or wastewaters are discharged to a land disposal or land treatment system, expressed in volume per unit area per unit time or depth of water per unit area per unit time.

(3) **Land Disposal System Permit Requirement.** Any person discharging or proposing to discharge domestic, municipal, commercial, or industrial wastes or wastewaters into a land disposal or land treatment system and then into the waters of the State, under any of the circumstances described in Section 10 of the Act, shall obtain a permit from the Division to make such a discharge. Owners of land disposal or land treatment systems which employ overland flow, subsurface drain fields, or other techniques which result in one or more point discharges into surface waters of the State, must obtain an NPDES permit and will not be issued a land disposal system permit. The provisions of Section 391-3-6-.08 regarding pretreatment apply to publicly owned treatment works which employ land disposal or land treatment systems.

(4) **Degree of Pollutant Treatment Required.**

(a) All pollutants discharged into land disposal or land treatment systems shall receive such treatment or corrective action so as to insure compliance with the terms and conditions of the issued land disposal system permit. The Division has the authority to establish the degree of treatment required before the pollutant is discharged to a land disposal or a land treatment system and then into waters of the State.

(b) Any pollutants which are being discharged or are intended to be discharged to a land disposal or land treatment system in amounts or concentrations which could be toxic or otherwise harmful to humans or biota if those pollutants mingle with waters of the State, or in amounts or concentrations which could reduce or impair the usefulness or operation of the land disposal or land treatment system, must receive such treatment as the Division may specify prior to being discharged to the land disposal or land treatment system.

(c) The hydraulic loading rate for any land disposal or land treatment system shall be determined based upon a technical analysis of soils and vegetation in the system area, climatic data characteristics of the wastes to be disposed or treated, and previous experience with similar systems. Hydraulic loading rates may not exceed those established in guidelines issued by the Division unless such technical analysis proves to the satisfaction of the Division that higher rates can be used.

(d) No land disposal system permit shall be issued authorizing the discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into a land disposal or land treatment system.

(5) **Application for a Land Disposal System Permit.**

(a) Applications for a land disposal system permit under Section 10 of the Act shall be on forms as may be prescribed and furnished from time to time by the Division. Applications shall be accompanied by all pertinent information as the Division may require in order to establish pollutant treatment requirements in accordance with subparagraph 391-3-6-.11(4), including but not limited to complete engineering reports, schedule of progress, plans, specifications, maps, measurements, quantitative and qualitative determinations, records and all related materials.

(b) Engineering reports, plans, and specifications submitted to the Division in support of a land disposal system permit application shall be prepared by a professional engineer, competent in the field of sewage and industrial waste treatment. Other materials in support of engineering reports, plans, specifications, and permit applications may be prepared by other persons competent in the field of land disposal or land treatment system technology.

(c) Materials submitted shall be complete and accurate.

(d) Any land disposal system permit application form or any other form submitted to the Division shall be signed as follows in accordance with the Federal Regulations 40 C.F.R. 122.6:

1. For a corporation, by a principal executive officer of at least the level of vice president;

2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

3. For a municipality, State, Federal, or other public facility, by either a principal executive officer or ranking elected official.

(e) All other reports or requests for information required by the permit issuing authority shall be signed by a person designated in (d) above or a duly authorized representative of such person, if:

1. The representative so authorized is responsible for the overall operation of the facility from which the discharge originates, e.g., a plant manager, superintendent or person of equivalent responsibility;

2. The authorization is made in writing by the person designated under (d) above; and

3. The written authorization is submitted to the Director.

(f) Any changes in the written authorization submitted to the permitting authority under (e) above which occur after the issuance of a permit shall be reported to the permitting authority by submitting a copy of a new written authorization which meets the requirements of (e) 1. and 2. above.

(g) Any person signing any document under (d) or (e) above shall make the following certification: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached document, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and

complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Comment: The permit application will be revised to incorporate this statement Where a permit program document does not contain the statement, the certification must accompany the appropriate document.

(6) **Notice and Public Participation.**

(a) Tentative determination and draft permits:

1. When the Division is satisfied that the application is complete, a tentative determination will be made to issue or deny the land disposal system permit. If the tentative determination is to issue the permit, a draft permit will be prepared in accordance with applicable State law prior to the issuance of a public notice. If the tentative determination is to deny the permit the applicant will be notified in writing by the Director and such notification shall include suggested revisions and modifications necessary to meet the requirements for a land disposal system permit.

(b) Public Notice:

1. Public notice of every approvable land disposal system permit application will be prepared and circulated in a manner designed to inform interested and potentially interested persons of the proposed pollutant discharge and of the proposed determination to issue a permit for the proposed pollutant discharge into a land disposal system and then into waters of the State. Procedures for circulation of the public notice shall include the following:

(j) Issuance of a news release to one (1) or more newspapers of general circulation in the area of the applicant;

(ii) A copy of the public notice shall be mailed to the land disposal system permit applicant and a copy shall be available for review and inspection at the Division office in Atlanta;

(iii) Mailing of the public notice to any persons or group upon written request to the Division. The Division shall maintain a mailing list for distribution of public notices for land disposal system permits. Any person or group may request that their names be added to the mailing list. The request should be in writing to the Division office in Atlanta and shall be renewed in December of each year. Failure to renew the request shall result in the removal of such name from the mailing list for land disposal system permit notification;

(iv) The Division shall provide a period of not less than thirty (30) days following the date of the public notice in which interested persons may submit their written views on the tentative determination with respect to the land disposal system permit application. All written comments submitted during the thirty (30) day comment period will be retained by the Division and considered in the final determination with respect to the land disposal system permit application. The comment period may be extended at the discretion of the Director.

(c) Public Hearing:

1. The Director shall provide an opportunity for an applicant, any affected state or interstate agency, or any other interested agency, person or group of persons to request a public hearing with respect to a land disposal system permit application. Any such request for a public hearing shall be filed within the thirty (30) day comment period prescribed in subparagraph 391-3-6-.11(6)(b) 1. (iv) and shall indicate the interest of the party filing such request, reasons why a hearing is requested and those specific portions of the application or other land disposal system form or information to be considered at the public hearing. The Director shall hold a hearing if he determines that there is sufficient public interest in holding such a hearing;

2. Any public hearing held pursuant to this subparagraph shall be held in the geographical area of the proposed pollutant discharge into a land disposal system and then into the waters of the State, or other appropriate location at the discretion of the Director;

3. The Director may hold one public hearing on related groups of land disposal system permit applications;

4. Public notice of any hearing held pursuant to this subparagraph shall be provided at least thirty (30) days in advance of the hearing date and shall be circulated in accordance with the public notification procedures in subparagraph 391-3-6.11(6)(b).

(7) **Schedule of Compliance.**

(a) Any person who obtains a land disposal system permit pursuant to the Act but who is not in compliance with applicable pollutant treatment requirements and limitations or other requirements contained in such permit at the time same is issued, shall be required to achieve compliance with such pollutant treatment requirements and limitations or other requirements in accordance with the schedule of compliance as set forth in such permit, or in the absence of a schedule of compliance, by the date set forth in such permit which the Director has determined to be the shortest reasonable period of time necessary to achieve compliance;

(b) Within 14 days after an interim date of compliance or the final date of compliance specified in a land disposal system permit, the permittee shall provide the Director with written notice of his compliance or non-compliance with the requirements and conditions specified to be completed by such date. Failure to submit the written notice is just cause for the Division to pursue enforcement action pursuant to the Act;

(c) A permittee who fails or refuses to comply with an interim or final date of compliance specified in a land disposal system permit may be deemed by the Director to be in violation of the permit and may be subject to enforcement action pursuant to the Act.

(8) **Monitoring, Recording and Reporting Requirements.**

(a) Any pollutant discharge into a land disposal or land treatment system and then into the waters of the State authorized by a land disposal system permit issued pursuant to the Act may be subject to such monitoring, recording and reporting requirements as may be reasonably required by the Director including the installation, use and maintenance of monitoring equipment or methods, including monitoring wells; specific requirements for recording of monitoring activities and results; and periodic reporting of monitoring results. The monitoring, recording and reporting requirements shall be specified in a permit when issued, provided, however, the Director may modify or require additional monitoring, recording and reporting by written notification to the permittee.

(b) The permittee shall be required to retain any records of monitoring activities and results for a minimum of three (3) years, unless otherwise required or extended by the Director upon written notification

(c) Any holder of a permit which requires monitoring of the authorized pollutant discharge into a land disposal or land treatment system and then into the waters of the State shall report periodically to the Division results of all required monitoring activities on appropriate forms supplied by the Division. The Division shall notify the permittee of the frequency of reporting but in no case shall the reporting frequency be less than once per year.

(9) **Modification, Suspension and Termination of Land Disposal System Permits.**

(a) The Director may revise or modify the schedule of compliance set forth in an issued land disposal system permit if the permittee requests such modification or revision in writing. The Director may grant requests in accordance with this subparagraph if he determines after a documented showing by the permittee that good and valid cause (including acts of God, strikes, floods, material shortages or other events over which the permittee has little or no control) exists for such revision.

(b) The Director may modify, suspend or terminate an issued land disposal system permit in whole or in part during its term for cause, including, but not limited to, failure or refusal of the permittee to carry out the requirements of the Act or regulations promulgated pursuant thereto, and if within 30 days following receipt of

such notice of such proposed modification, suspension or termination from the Director there is no objection by the permittee in writing. Prior to any such modification, suspension or termination of an issued land disposal system permit by the Director (other than modification or revision of compliance schedule pursuant to subparagraph (a) above or modification of the monitoring, recording or reporting requirements), the Director will provide public notice in accordance with the procedures set forth in subparagraph 391-3-6-.11 (6)(b) and an opportunity for public hearing in accordance with the procedures set forth in subparagraph 391-3-.11 (6)(c).

(10) **Non-governmentally Owned Sewerage Systems.** In cases involving non-governmentally owned sewerage systems, a trust indenture or other legal contract or agreement, approved by the Division, assuring continuity of operation of the system, may be required to be filed with the application for a permit. This provision shall not be applicable to systems treating or disposing only industrial waste.

(11) **Duration and Transferability of Land Disposal System Permits.**

(a) Any land disposal system permit issued under Section 10 of the Act shall have a fixed term not to exceed five years. Upon expiration of such permit a new permit may be issued by the Director, provided that an application for renewal is filed with the Director at least 180 days prior to the expiration date of the existing permit. The issuance of such new permit shall likewise have a fixed term not to exceed five years.

(b) A permit may be transferred to another person by a permittee if:

1. The permittee notifies the Director of the proposed transfer;

2. A written agreement containing a specific date for transfer of permit responsibility and coverage between the current and new permittees (including acknowledgement that the existing permittee is liable for violations up to that date, and that the new permittee is liable for violations from that date on) is submitted to the Director; and

3. The Director within thirty (30) days does not notify the current permittee and the new permittee of the Division's intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit. A new application will be required when the change of ownership is accompanied by a change or proposed change in process of wastewater characteristics or a change or a potential change in any circumstances that the Director believes will affect the conditions or restrictions in the permit.

(12) **Enforcement.** Any person who violates any provision of the Act, any rule promulgated and adopted pursuant thereto, or any term, condition, schedule of compliance or other requirement contained in a permit issued pursuant to the Act shall be subject to enforcement proceedings pursuant to the Act.

391-3-6.12 Public Wastewater Treatment Plant Classification.

In accordance with Section 5 of the Certification of Water and Wastewater Treatment Plant Operators Act (Georgia Laws 1969, p. 272, et seq., as amended) the following classifications shall be considered as minimum levels and the Division may classify any plant at a higher level if the complexity or location of the plant or critical uses of the receiving waters warrant such higher classification in the judgment of the Division. Any plant not fitting any of the following standard descriptions shall be classified individually according to the judgment of the Division.

	Design Flow (MGD)*		
Description of Treatment	Class I	Class II	Class III
Processes that are designed to provide treatment levels that are more stringent than secondary treatment definition	3.9 or Greater	0.005 to 2.99	
Activated Sludge Process, other than Extended Aeration	5.0 or Greater	0.005 to 4.99	
Extended Aeration Process	7.5 or Greater	1.00 to 7.49	.005 to 0.99
Fixed Film Biological Systems Rotating Biological Contactors, Trickling Filters, etc.	10.0 or Greater	1.0 to 9.99	.005 to 0.99
Waste Stabilization Ponds including Aerated Lagoon Systems	—	1.0 or Greater	.25 to 0.99

* NOTE: Any treatment processes with a design flow less than the minimum specified above are Class IV – a trained operator is required.

Part I

WATER USE CLASSIFICATIONS by River Basin for the Surface Waters of the State of Georgia

Stream Categories (Water-Use Classifications)

Streams and stream reaches not listed below for specific water-use classification will fit into the following categorical classifications.

(a) All stream reaches immediately downstream from point wastewater sources will be evaluated on a case-by-case basis as NPDES permits are issued for those sources. If it is determined, based on information from the U.S. Geological survey, that a stream would be intermittent, ephemeral, or a combination thereof if the flow were not sustained by treated wastewaters, such streams are classified as fishing and will be regulated under mixing zone requirements with mixing zone length and/or duration to be set on a case-by-case basis.

(b) Streams and stream reaches not specifically classified below and not covered by *a* above are classified as fishing

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Water-Use Classifications

		CLASSIFICATION
SAVANNAH RIVER BASIN		
Savannah River	Headwaters to Clark Hill Dam (Mile 238)	Recreation
Savannah River	Clark Hill Dam (Mile 238) to Augusta, 13th Street Bridge	Drinking Water
Savannah River	U.S. Hwy. 301 Bridge (Mile 129) to U.S. Hwy. 17 Bridge (Mile 22)	Drinking Water
Savannah River	U.S. Hwy 17 Bridge (Mile 22) to Field's Cut (Mile 5)	Navigation Industrial
Savannah River	Fort Pulaski (Mile 0) to Open Sea and all littoral waters of Tybee Island	Recreation
Chattooga River	Georgia-North Carolina State Line to Tugaloo Reservoir	Wild and Scenic
West Fork Chattooga	Confluence of Overflow Creek and Clear Creek to confluence with Chattooga River (7.3 mi)	Wild and Scenic
OGEECHEE RIVER BASIN		
Ogeechee River	U.S. Hwy. 17 Bridge to Open Sea and littoral waters of Skidaway, Ossabaw, Sapelo, and St. Catherines Islands	Recreation
Little Ogeechee River	South End of White Bluff Road near Carmelite Monastery to Open Sea and littoral waters of Skidaway and Ossabaw Islands	Recreation
OCONEE RIVER BASIN		
Middle Oconee River	Georgia Hwy. 82 to U.S. Hwy. 78	Drinking Water
North Oconee River	Jackson County Road 432 to Athens Water Intake	Drinking Water
Oconee River	Georgia Hwy. 16 to Sinclair Dam	Recreation
Oconee River	Sinclair Dam to Georgia Hwy. 22	Drinking Water
Oconee River	Georgia Hwy. 57 to U.S. Hwy. 80	Drinking Water
ALTAMAHA RIVER BASIN		
	All littoral waters on the ocean side of St. Simons, Sea, and Sapelo Islands	Recreation
SATILLA RIVER BASIN		
	All littoral waters on ocean side of Cumberland and Jekyll Islands	Recreation
ST. MARYS RIVER BASIN		
North River	Headwaters to confluence with St. Marys River	Industrial
	All littoral waters on ocean side of Cumberland island	Recreation

Water-Use Classifications Contd.

		CLASSIFICATION
UPPER OCMULGEE RIVER BASIN		
South River	Headwaters to Georgia Hwy 81	Fishing[1]
Yellow River	Georgia Hwy. 124 to Porterdale Water Intake	Drinking Water
Jackson Lake	From South River at Georgia Hwy. 36; from Yellow River at Georgia Hwy 36; from Alcovy River at Newton Factory Road Bridge to Lloyd Shoals Dam	Recreation
Intrenchment Creek	Headwaters in Atlanta to confluence with South River	Fishing[1]
LOWER OCMULGEE RIVER BASIN		
Ocmulgee River	Georgia Hwy 18 to Macon Water Intake	Drinking Water
Ocmulgee River	Macon Water Intake to Georgia Hwy. 96	Fishing[1]
Towaliga River	Headwaters to Georgia Hwy 36	Drinking Water
Towaliga River	Georgia Hwy. 36 to High Falls Dam	Recreation
Tobesofkee Creek	Lake Tobesofkee	Recreation
Tobesofkee Creek	Tobesofkee Dam to confluence with Ocmulgee River	Fishing[1]
FLINT RIVER BASIN		
Flint River	Headwaters to Georgia Hwy 54	Fishing[1]
Flint River	Woolsey Road (Fayette-Clayton Counties) to Georgia Hwy 16	Drinking Water
Flint River	Georgia Hwy 27 to Georgia Power Company Dam at Lake Worth, Albany	Recreation
Flint River	Bainbridge, U S Hwy 84 Bridge to Jim Woodruff Dam, Lake Seminole	Recreation

[1] Specific criteria apply at all times, however, intermittent violations due to the impact of pollutants contained in uncontrolled storm water runoff and/or combined sewer overflows are expected

Water-Use Classifications—Contd.

CHATTAHOOCHEE RIVER BASIN		*CLASSIFICATION*
Chattahoochee River	Headwaters to Buford Dam	Recreation
Chattahoochee River	Buford Dam to Atlanta (Peachtree Creek)	Drinking Water and Recreation
Chattahoochee River	Atlanta (Peachtree Creek) to Cedar Creek	Fishing*
Chattahoochee River	New River to West Point Dam	Recreation
Chattahoochee River	West Point Dam to West Point Mfg. Company Water Intake	Drinking Water
Chattahoochee River	Osanippa Creek to Columbus, Georgia (14th Street Bridge)	Recreation and Drinking Water
Chattahoochee River	Cowikee Creek to Great Southern Division of Great Northern Paper Company	Recreation
Chattahoochee River	Georgia Hwy. 91 (Neal's Landing) to Jim Woodruff Dam	Recreation
Flat Creek	Headwaters in Gainesville to Chattahoochee River	Fishing[1]
Peachtree Creek (and its tributaries)	Headwaters to Chattahoochee River	Fishing[1]
Proctor Creek	Headwaters in Atlanta to Chattahoochee River	Fishing[1]
Utoy Creek	Headwaters in East Point to Chattahoochee River	Fishing[1]

TALLAPOOSA RIVER BASIN		*CLASSIFICATION*
Tallapoosa River	Headwaters to Georgia Hwy. 100	Drinking Water
Little Tallapoosa River	Headwaters to SCS Dam No. 36 (Carrollton Raw Water Intake)	Drinking Water

COOSA RIVER BASIN		*CLASSIFICATION*
Conasauga River	Georgia Hwy. 2 to Dalton Water Intake	Drinking Water
Ellijay River	Headwaters to Ellijay Water Intake	Drinking Water
Cartecay River	Headwaters to Ellijay Water Intake	Drinking Water
Cosawattee River	Confluence of Mountaintown Creek to Carters Dam	Recreation
Oostanaula River	Confluence of Conasauga and Coosawattee Rivers to Calhoun Water Intake	Drinking Water
Etowah River	Cherokee County Road 782 to Canton Water Intake	Drinking Water
Etowah River	Georgia Hwy. 20 to Allatoona Dam	Recreation and Drinking Water

*Condition: Specific criteria apply at all times when the river flow measured at a point immediately upstream from Peachtree Creek equals or exceeds 750 cfs (Atlanta gage flow minus Atlanta water supply withdrawal) unless violations occur due to uncontrolled urban storm runoff and/or combined sewer overflows.

[1]Specific criteria apply at all times, however, intermittent violations due to the impact of pollutants contained in uncontrolled storm water runoff and/or combined sewer overflows are expected.

Water Use Classifications Contd

		CLASSIFICATION
Etowah River	Allatoona Dam to Cartersville Water Intake	Drinking Water
		Recreation
Coosa River	Alabama State Line	
Mill Creek	Headwaters to Dalton Water Supply	Drinking Water

TENNESSEE RIVER BASIN

		CLASSIFICATION
Hiawassee River (including Lake Chatuge)	Headwaters to Georgia-North Carolina State line	Recreation
Nottely River	Headwaters to Georgia-North Carolina State line	Recreation
Toccoa River (including Lake Blue Ridge)	Headwaters to Georgia-Tennessee State line	Recreation

Part II
Trout Streams of Georgia
(by River Basin and County Boundaries)

Trout Stream Designations

a) Streams designated by the Georgia Game and Fish Division as Primary [1] (Natural) Trout Waters are listed with each river basin having trout waters. Standards apply to these streams and tributaries thereto.

b) Streams designated by the Georgia Game and Fish Division as Secondary [2] (Put and Take) Trout Waters are also listed with each river basin having trout waters. Quality standards as defined in Part III of this booklet apply except for a 2 degree maximum elevation of stream temperature above natural stream temperature.

SAVANNAH RIVER BASIN

Elbert County

Primary
None
Secondary
1. Savannah River for the ten-mile reach downstream from Hartwell Dam.
Non trout
Remainder of drainage in County.

Habersham County

Primary
1. Middle Fork Broad River Watershed upstream from USFS Route 92-B.
2. Panther Creek watershed.
Secondary
1. Davidson Creek watershed.
2. Middle Fork Broad River tributaries entering below USFS Route 92-B.
3. Nancytown Creek watershed upstream from Nancytown Lake.
4. North Fork Broad River watershed.
5. Toccoa Creek watershed.
Non trout
None

Hart County

Primary
None
Secondary
1. Savannah River.
Non trout — Remainder of drainage in County.

Rabun County

Primary
1. Chattooga River — all tributaries classified as primary.
2. Tallulah River — entire stream and tributaries classified as primary except all streams or sections thereof classified as secondary or non trout.
Secondary
None
Non trout
1. Tallulah River downstream from Lake Rabun to headwaters of Tugalo Lake.

Stephens County

Primary
1. Middle Fork Broad River watershed upstream from USFS Route 92-B.
2. Panther Creek watershed upstream from the mouth of Davidson Creek.
Secondary
1. Davidson Creek watershed.
2. Big Leatherwood Creek watershed upstream from Georgia Hwy. 184 Bridge.
3. Little Toccoa Creek watershed.
4. Middle Fork Broad River watershed upstream from SCS flood control structure #44 to USFS Route 92-B.
5. North Fork Broad River watershed upstream from SCS flood control structure #1.
6. Panther Creek watershed downstream from the mouth of Davidson Creek.
7. Toccoa Creek upstream from Toccoa Falls.
Non trout
Remainder of drainage in County.

Towns County

Primary
1. Tallulah River watershed.
Secondary
None
Non trout
None

CHATTAHOOCHEE RIVER BASIN

Cobb County

Primary
None
Secondary
1. Chattahoochee River upstream from I-285 West Bridge.
Non trout
Remainder of drainage in County.

Forsyth County

Primary
None
Secondary
1. Chattahoochee River.
Non trout
Remainder of drainage in County.

Fulton County

Primary
None
Secondary
1. Chattahoochee River Upstream from I-285 West Bridge.
Non trout
Remainder of drainage in County.

Gwinnett County

Primary
None
Secondary
1. Chattahoochee River.
Non trout
Remainder of drainage in County.

Habersham

Primary
1. Chattahoochee River watershed upstream from Ga. Hwy. 255 Bridge.

[1] Waters that support a self sustaining population of rainbow, brown or brook trout.
[2] Waters in which the trout population must be replenished through periodic stockings, but will support trout throughout the year.

2. Soque River watershed upstream from King's Bridge (bridge on Ga. Hwy. 197 just below the mouth of Shoal Creek).

Secondary

1. Chattahoochee River wastershed upstream from Ga. Hwy. 115 to the Georgia Hwy. 255 Bridge.
2. Soque River watershed upstream from the mouth of Deep Creek to King's Bridge.

Non trout

Remainder of drainage in County.

Lumpkin County

Primary

1. Cane Creek watershed upstream from Cane Creek Falls.
2. Cavender Creek watershed.
3. Chestatee River watershed upstream from Lumpkin County Road 52-S976.
4. Yahoola Creek watershed upstream from Georgia Hwy. 52.

Secondary

1. Cane Creek watershed upstream from US Hwy. 19 Bridge to Cane Creek Falls.
2. Chestatee River watershed upstream from the mouth of Tesnatee Creek to Lumpkin County Road 52-S976.

Non trout

Remainder of drainage in County.

Paulding County

Primary

None

Secondary

1. Powder Creek watershed.

Non trout

Remainder of drainage in County.

Towns County

Primary

1. Chattahoochee River watershed.

Secondary

None

Non trout

None

Union County

Primary

1. Chattahoochee River watershed.

Secondary

None

Non trout

None

White County

Primary

1. Cathey Creek watershed upstream from the Arrowhead Campground Lake.
2. Chattahoochee River watershed upstream from Georgia Hwy. 255 Bridge.
3. Town Creek watershed upstream from the mouth of Jenny Creek.

Secondary

1. Chattahoochee River watershed upstream from Georgia Hwy. 115 to the Ga. Hwy. 255 Bridge.
2. Little Tesnatee Creek watershed upstream from the mouth of Turner Creek.
3. Turner Creek watershed except as listed under primary above. (Turner Creek nearest to Cleveland city limits)

Non trout

Remainder of drainage in County.

TALLAPOOSA RIVER BASIN

Carroll County

Primary

None

Secondary

1. Brooks Creek watershed.
2. Mud Creek watershed.
3. Tallapoosa River.

Non trout

Remainder of drainage in County.

Haralson County

Primary

None

Secondary

1. Beach Creek watershed upstream from Haralson County Road 34.
2. Flatwood Creek watershed.
3. Lasseter Creek watershed.
4. Mann Creek watershed upstream from Road S2708.
5. Tallapoosa River watershed upstream from Haralson County Road 222.

Non trout

Remainder of drainage in County.

Paulding County

Primary

None

Secondary

1. Tallapoosa River watershed.

Non trout

None

Polk County

Primary

None

Secondary

1. Lassetter Creek watershed.
2. Swinney Branch watershed.
3. Thomasson Creek watershed.

Non Trout

None

TENNESSEE RIVER BASIN

Catoosa County

Primary

None

Secondary

1. Hurricane Creek watershed upstream from Peters Branch.
2. Little Chickamauga Creek watershed upstream from County Road 387.
3. Tiger Creek watershed upstream from Georgia Hwy. 2.

Non trout

Remainder of drainage in County.

Dade County

Primary

None

Secondary

1. Higdon Creek watershed.
2. Lookout Creek watershed upstream from Georgia Hwy. 189.
3. Rock Creek watershed.

Non trout

Remainder of drainage in County.

Fannin County

Primary

1. Fightingtown Creek watershed.
2. Owenby Creek watershed.
3. Persimmon Creek watershed.
4. South Fork Rapier Mill Creek watershed.
4. Toccoa River watershed upstream to Blue Ridge Reservoir Dam.
6. Toccoa River watershed upstream from the backwater of Blue Ridge Reservoir.
7. Tumbling Creek watershed.
8. Wilscot Creek watershed.

Secondary

1. All streams or stream sections not classified as primary.

Non trout

None

Gilmer County

Primary

1. Toccoa River — Fightingtown Creek watershed.

Secondary

1. All streams or sections thereof not classified as primary.

Non trout

None

Rabun County

Primary

1. Little Tennessee River — entire stream and tributaries classed as primary except all streams or sections thereof classified as secondary or non trout.

Secondary

1. Little Tennessee River downstream from US Hwy 441 Bridge.
2. Mud Creek downstream from Sky Valley Ski Resort Lake to the Little Tennessee River.

Non trout

None

Towns County

Primary

1. Brasstown Creek watershed.
2. Gumlog Creek watershed.
3. Hiwassee River watershed — entire stream and all streams or tributaries classed as primary except all streams or sections thereof classified as secondary.
4. Winchester Creek watershed.

Secondary

1. Hightower Creek downstream from the mouth of Little Hightower Creek.

Non trout

None

Union County

Primary
1 Arkaqua Creek watershed
2 Brasstown Creek watershed
3 Conley Creek watershed upstream from Road S2325
4 Coosa Creek watershed upstream from mouth of Anderson Creek
5 Dooley Creek watershed
6 East Fork Wolf Creek watershed upstream from Lake Trahlyta
7 Gumlog Creek watershed
8 Ivylog Creek watershed upstream from USDA Forest Service property line
9 Nottely River watershed upstream from the mouth of Town Creek
10 Toccoa River watershed
11 Town Creek watershed
12 West Fork Wolf Creek watershed
13 Youngcane Creek watershed upstream from the mouth of Jones Creek

Secondary
1 All streams or sections thereof not classified as primary or as non trout

Non trout
1 Butternut Creek watershed
2 Nottely River downstream from Nottely Dam

Walker County

Primary
None

Secondary
1 Gulf Creek watershed
2 Left Fork Cooper Branch watershed
3 Little Chickamauga Creek watershed
4 Rock Creek watershed (including Sawmill Branch) upstream from Sawmill Branch
5 West Chickamauga Creek watershed upstream from Walker County Road 107

Non trout
Remainder of drainage in County

Whitfield County

Primary
None

Secondary
1 Tiger Creek watershed

Non trout
Remainder of drainage in County

COOSA RIVER BASIN

Bartow County

Primary —
None

Secondary —
1 Boston Creek watershed upstream from Georgia Hwy 20
2 Connesena Creek watershed
3 Dykes Creek watershed
4 Pine Log Creek watershed
5 Salacoa Creek watershed
6 Spring Creek watershed
7 Stamp Creek watershed upstream from Bartow County Road 269
8 Toms Creek watershed upstream from Bartow County Road 82

Non trout —
Remainder of drainage in County

Chattooga County

Primary —
None

Secondary —
1 Allgood Branch watershed upstream from Tennessee, Alabama, and Georgia Railroad
2 Chappel Creek watershed
3 Chelsea Creek watershed
4 East Fork Little River watershed
5 Hinton Creek watershed
6 Kings Creek watershed
7 Little Armuchee Creek watershed upstream from Chattooga County Road 326
8 Middle Fork Little River watershed
9 Mt Hope Creek watershed
10 Perennial Spring watershed
11 Raccoon Creek watershed upstream from Georgia Hwy 48
12 Ruff Creek watershed
13 Storey Mill Creek watershed
14 Taliaferro Creek watershed

Non trout —
Remainder of drainage in County

Cherokee County

Primary —
None

Secondary —
1 Boston Creek watershed
2 Pine Log Creek watershed
3 Salacoa Creek watershed
4 Stamp Creek watershed

Non trout —
Remainder of drainage in County

Dade County

Primary —
None

Secondary —
1 East Fork Little River watershed
2 West Fork Little River watershed

Non trout —
Remainder of drainage in County

Dawson County

Primary —
1 Amicalola Creek watershed upstream from Road S2275
2 Sweetwater Creek watershed

Secondary —
Amicalola Creek watershed from Ga Hwy 53 upstream to Road S2275
2 Shoal Creek watershed upstream from the mouth of Burt Creek

Non trout —
Remainder of drainage in County

Fannin County

Primary —
1 Conasauga River — Jacks River watershed
2 Ellijay River watershed
3 Etowah River watershed

Secondary —
All streams or stream sections not classified as primary (Also see Tennessee Basin listing)

Non trout —
None

Floyd County

Primary —
None

Secondary —
1 Dykes Creek watershed
2 Johns Creek watershed upstream from Floyd County Road 212
3 Kings Creek watershed
4 Lavender Creek watershed upstream from Floyd County Road 234
5 Little Cedar Creek watershed
6 Mt Hope Creek watershed
7 Spring Creek watershed (flows into Etowah River)
8 Spring Creek watershed (flows into State of Alabama)
9 Toms Creek watershed

Non trout —
Remainder of drainage in County

Gilmer County

Primary —
1 Cartecay River watershed upstream from the mouth of Clear Creek
2 Clear Creek Watershed upstream from Gilmer County Road 92
3 Conasauga River — Jacks River watershed
4 Ellijay River watershed upstream from the mouth of Kells Creek
5 Harris Creek watershed
6 Johnson Creek watershed
7 Mountaintown Creek watershed upstream from US Hwy 76
8 Tails Creek watershed upstream from Georgia Hwy 282

Secondary —
1 All streams or sections thereof not classified as primary or as non trout water

Non trout —
1 Coosawattee River downstream from Ga Hwy 5 bridge
2 Seven Mile Creek watershed
3 Talking Rock Creek (Not including tributaries)

Gordon County

Primary —
None

Secondary —
1 Johns Creek watershed
2 Pine Log Creek watershed upstream from Ga Hwy 53
3 Pin Hook Creek watershed upstream from Ryo Road
4 Rocky Creek watershed upstream from West Union Road
5 Salacoa Creek watershed upstream from US Hwy 411

COOSA RIVER BASIN (Cont'd)

6. Snake Creek watershed.

Non trout —

Remainder of drainage in County.

Lumpkin County

Primary —

1. Amicalola Creek watershed.
2. Camp Creek watershed.
3. Clay Creek watershed.
4. Etowah River watershed upstream from the Ga. Hwy. 52 Bridge.
5. Hurricane Creek watershed upstream from Lumpkin County Road 118.
6. Mooney Branch watershed.
7. Tobacco Pouch Branch watershed.

Secondary —

1. Shoal Creek watershed.
2. Etoway River watershed upstream from Castleberry Bridge to Ga. Hwy. 52 except streams classified above as Primary.

Non trout —

Remainder of drainage in County.

Murray County

Primary —

1. Consauga — Jacks Rivers watershed upstream from Georgia — Tennessee state line.
2. Holly Creek watershed upstream from Murray County Road SR826 (U.S. Forest Service Line).
3. Rock Creek watershed upstream from Murray County Road 4 (Dennis).

Secondary —

1. All tributaries to Carters Res.
2. Holly Creek watershed (including Emory Creek watershed upstream from Emory Creek to Murray County Road SR826 (U.S. Forest Service Line).
3. Mill Creek watershed upstream from Murray County Road 27.
4. North Prong Sumac Creek watershed.
5. Sugar Creek watershed upstream from Murray County Road 4.
6. Sumac Creek watershed upstream from Coffey Lake.

Non trout —

Remainder of drainage in County.

Paulding County

Primary —

None

Secondary —

1. Possum Creek watershed upstream from Paulding County Road 64.
2. Pumpkinvine Creek watershed upstream from Paulding County Road 231.
3. Raccoon Creek watershed upstream from Road SR2299.

Non trout —

Remainder of drainage in County.

Pickens County

Primary —

1. Cartecay River watershed.
2. Talking Rock Creek watershed upstream from Route S1011.

Secondary —

1. Amicalola Creek watershed.
2. Fisher Creek watershed (upstream from the confluence of Talona Creek and Fisher Creek).
3. Long Swamp Creek watershed upstream from Pickens County Road 294.
4. Pin Hook Creek watershed.
5. Polecat Creek watershed.
6. Rock Creek watershed.
7. Salacoa Creek watershed.

Non trout —

Remainder of drainage in County.

Polk County

Primary —

None

Secondary —

1. Cedar Creek watershed upstream from Polk County Road 121.
2. Little Cedar Creek watershed.
3. Pumpkinpile Creek watershed upstream from Road SR1032.
4. Spring Creek watershed.

Non trout —

Remainder of drainage in County.

Walker County

Primary —

1. Furnace Creek watershed.

Secondary —

1. Allen Creek watershed.
2. Chappel Creek watershed.
3. Dry Creek watershed (Trib. to East Armuchee Creek).
4. Duck Creek watershed.
5. East Armuchee Creek watershed upstream from Ga. Hwy 143.
6. East Fork Little River watershed (flows into Dade County.)
7. East Fork Little River watershed (flows into Chattooga County; includes Gilreath Creek).
8. Johns Creek watershed.
9. Middle Fork Little River watershed (includes Cannon Branch and Hale Branch).
10. Ruff Creek watershed.
11. Snake Creek watershed.
12. West Armuchee Creek watershed.
13. West Fork Little River watershed.

Non trout —

Remainder of drainage in County.

Whitfield County

Primary —

None

Secondary —

1. Coahulla Creek watershed upstream from Whitfield County Road 13.
2. Snake Creek watershed.
3. Swamp Creek watershed upstream from Whitfield County Road 9.

Non trout — Remainder of drainage in County.

A MODEL LAW TO ENABLE STATES TO PARTICIPATE IN THE NATIONAL DISCHARGE POLLUTANT ELIMINATION SYSTEM ESTABLISHED UNDER THE 1972 FEDERAL WATER POLLUTION CONTROL ACT

(The model law was developed by the Council of State Governments in February 1973)

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Section 1. *Purpose*

The Legislature finds and declares that since the Federal Water Pollution Control Act (33 U.S.C. 1251, et seq.), as amended, provides for a permit system to regulate the discharge of pollutants to the waters of the United States and provides that permits may be issued by States which are authorized to implement the provisions of such Act, it is in the interest of the people of the State to enact the provisions of this Act in order to authorize the State to implement the provisions of the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto, and Federal regulations and guidelines issued pursuant thereto.

Section 2. *Definitions*[1]

(a) The term "discharge" means the addition of any pollutant to State waters from any point source.

(b) The term "point source" means any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

(c) The term "pollutant" means dredged spoil, soil waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials,[2] heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. [This term does not mean (A) sewage from vessels or (B) water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil or gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the [appropriate State agency], and if the [appropriate State agency] determines that such injection or disposal will

[1] The definitions presented below are quite similar to those contained in the Federal Water Pollution Control Act and are designed to provide coverage of a state permit program at least as broad as is necessary to achieve approval of a State's program under section 402(b) of the Act. A program would be approvable, however, as long as the State statutory scheme is adequate to support a permit program as broad in scope as is permitted utilizing the definitions which follow. The language of a particular State statute could well be different, and quite possibly broader in scope.

The term "Director" has been used throughout this document as a shorthand method for referring to the State water pollution control agency or interstate agency or its chief administrative officer. In the event responsibility for water pollution control and enforcement is divided among two or more State or interstate agencies, the term "Director" means the administrative officer or State agency authorized to perform the particular procedure to which reference is made.

[2] The legislative history of the Federal Water Pollution Control Act Amendments reflects that the term 'radioactive materials' as included within the definition of 'pollutant' in Section 502 of the Act covers only radioactive materials which are not encompassed in the definition of source, by-product or special nuclear materials as defined by the Atomic Energy Act of 1954, as amended, and regulated pursuant to the latter Act. Examples of radioactive materials not covered by the Atomic Energy Act and, therefore, included within the term 'pollutant' are radium and accelerator produced isotopes. (H.R. Rep. 92-911, 92nd Cong. 2d Sess. 131, March 11, 1972; 117 Cong. Rec. 17401, daily ed., November 2, 1971; 118 Cong. Rec. 9115, daily ed., October 4, 1972).

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not result in the degradation of ground or surface water resources.[3]

(d) The term "State waters" means any and all surface and subsurface waters, [public or private,] [alternatively which are not entirely confined and retained completely upon the property of an individual, partnership or corporation,] which are contained within, flow through or border upon this State or any portion thereof,[4] including the territorial seas.

(e) The term "effluent limitations" means any restrictions or prohibitions established under State or Federal law including, but not limited to, effluent limitations, standards of performance for new sources, toxic effluent standards and ocean discharge criteria, on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into State waters, including schedules of compliance.

(f) The term "*water quality standards*" means any water quality standards adopted and effective under State and Federal law.

(g) The term "water quality criteria" means any criteria describing the required quality of State waters adopted under State and Federal law.

(h) The term "schedule of compliance" means a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with any effluent limitation or water quality standard.

(i) The term "person" means an individual, corporation, partnership, association, State, or political subdivision thereof, State agency, municipality, commission, or any interstate body.

(j) The term "municipality" means a city, town, borough, county, parish, district, association, waste treatment management agency, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or authorized Indian tribal organization.

(k) The term "permit" means a permit to discharge pollutants into State waters issued under section 5 or section 6 of this Act.

(l) The term "industrial user" means those industries identified in the Standard Industrial Classification Manual, United States Bureau of the Budget, 1967, as amended and supplemented, under the category 'Division D — Manufacturing' and such other classes of significant waste producers identified under regulations issued by the Director or the Administrator of the United States Environmental Protection Agency.

(m) The term "publicly owned treatment works" means any facility for the treatment of pollutants owned by the State or any political subdivision thereof, municipality, or other public entity.

(n) The term "pollution" means the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water.

Section 3. *General Powers and Duties*

The [Director] shall have the following general powers and duties:

(a) To perform any and all acts necessary to carry out the purposes and requirements of this Act and of the Federal Water Pollution Control Act, as amended, relating to this State's participation in the National Pollutant Discharge Elimination System established under the Act.

(b) To administer and enforce the provisions of this Act and all rules, regulations, orders, effluent limitations, water quality standards, and permits promulgated, issued, or effective hereunder.

(c) To advise, consult, cooperate, contract and enter into agreements with agencies of the Federal Government, and with agencies of this State, other States, interstate agencies, and with other persons as necessary to carry out the purposes of this Act.

(d) To develop, propose, promulgate, and amend such rules and regulations as are necessary to carry out the purposes of this Act.

Section 4. *Prohibition of Discharges*

Except as in compliance with the provisions of this Act, and any rules and regulations promulgated hereunder, the discharge of any pollutant by any person shall be unlawful.[5]

Section 5. *Issuance of Permits*

The [Director] may, after public notice and opportunity for public hearing, issue a permit for the discharge of any pollutant or combination of pollutants into State waters, notwithstanding section 4 of this Act, upon condition that such discharge meets or will meet all applicable State and Federal water quality standards and

[3] A State need not exclude sewage from vessels or certain well injection from its definition of "pollutants" but such discharges are not required to be covered in the State's permit program for purposes of approval under sections 402(b) and (c) of the FWPCA. The bracketed term "the appropriate State agency" was used in this section instead of "Director" to draw attention to the possibility that the somewhat specialized determination required to be made in clause (B) may in some cases be made by an agency other than the agency or agencies primarily responsible for administration of the State's permit program.

[4] This definition is an all encompassing one that will insure coverage of the waters required to be included within the NPDES. A narrower scope of waters covered will be adequate as long as the "waters of the United States" (FWPCA Section 502(7)) are included and the State has provisions which authorize the issuance of permits to control the disposal of pollutants into wells (FWPCA Section 402(b) (1) (D); 40 CFR Section 124.80). "Water of the United States" includes:

(1) All navigable waters of the United States;
(2) Tributaries of navigable waters of the United States;
(3) Interstate waters;
(4) Intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes;
(5) Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce; and
(6) Intrastate lakes, rivers, and streams which are utilized for industrial purposes by industries in interstate commerce.

[5] It should be noted that because of the scope of the definitions of "discharge" and "State waters" that this prohibitory clause is broad enough to cover disposal of pollutants into wells (see FWPCA Section 402 (b) (1) (D), 40 CFR 124.80). The definition of "discharge" also has the effect of limiting the scope of this provision to "point source" discharges.

effluent limitations and all other requirements of this Act.[6]

Section 6. *Duration of Permits*

Each permit issued under this Act shall have a fixed term not to exceed five years. Upon expiration of a permit, a new permit may be issued by the Director, after review by the Director in accordance with such rules and regulations as he shall prescribe, after notice and opportunity for public hearing, and upon condition that the discharge meets or will meet all applicable State and Federal water quality standards effluent limitations and all other requirements of this Act.[7]

Section 7. *General Terms and Conditions of Permits*

(a) The [Director] is authorized to require as conditions in permits issued under this Act the achievement of:

(1) effluent limitations based upon the application of such levels of treatment technology and processes as are required under the Federal Water Pollution Control Act, as amended;

(2) any more stringent effluent limitations necessary to meet water quality criteria established pursuant to any State or Federal law or regulation.[8]

(b) Effluent limitations prescribed under subsection (a) of this section shall be achieved in the shortest reasonable period of time consistent with State law and the Federal Water Pollution Control Act, as amended, and any regulations or guidelines promulgated thereunder.

(c) The [Director] is further authorized to: (1) set and revise schedules of compliance and include such schedules within the terms and conditions of permits for the discharge of pollutants; and (2) prescribe terms and conditions for permits issued under this Act to assure compliance with applicable State and Federal effluent limitations and water quality criteria, including requirements concerning recording, reporting, monitoring, entry and inspection to the extent permissible under sections 13 and 14 of this Act, and such other requirements as are consistent with the purposes of this Act.

Section 8. *Prohibition Against Issuing Permit in Certain Instances*

No permit shall be issued authorizing any of the following discharges:

(a) The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste;

(b) Any discharge which the Secretary of the Army, acting through the Chief of Engineers, finds would substantially impair anchorage and navigation of any waters of the United States;

(c) Any discharge to which the Administrator of the U.S. Environmental Protection Agency, or his designee, has objected pursuant to any right provided to the Administrator under the Federal Water Pollution Control Act, as amended.

(d) Any discharge which is in conflict with an areawide waste treatment management plan approved under the Federal Water Pollution Control Act, as amended.[9]

Section 9. *Permit Conditions Concerning Publicly Owned Treatment Works*

(a) The [Director] shall impose as conditions in permits for the discharge of pollutants from publicly owned treatment works requirements for information to be provided by the permittee concerning new introductions of pollutants or substantial changes in the volume or character of pollutants being introduced into such treatment works.

(b) The [Director] is authorized to impose as conditions in permits for the discharge of pollutants from publicly owned treatment works appropriate measures to establish and insure compliance by industrial users with any system of user charges required under State or Federal law or any regulations or guidelines promulgated thereunder.[10]

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[6] By requiring compliance with "all applicable State *and* Federal water quality standards and effluent limitations" this provision requires compliance with whichever standard or limitation is the more stringent.

The Report of the House Committee on Public Works on the 1972 Amendments to the Federal Water Pollution Control Act (H.R. Rep. No. 92-911, 92nd Cong., 2d Sess.) states (at pages 125-126):

"The committee points out, as it did in the discussion of section 401, that the term 'applicable' used in section 402 has two meanings. It means that the requirement which the term 'applicable' refers to must be pertinent and apply to the activity and the requirement must be in existence by having been promulgated or implemented.")

[7] Inclusion of permits issued under this section within the definition of "permits" in section 2 has the effect of insuring that all provisions in this draft applicable to permits issued pursuant to section 5 are also applicable to renewal permits.

The Director may provide for procedural shortcuts such as abbreviated applications forms when reissuing permits. The FWPCA, however, makes no distinction between new and old permits, so a renewal permit must meet the same basic requirements as are applicable to "first round" permit issuances under section 402.

[8] Federal effluent standards are made applicable to all point sources subject to permit under section 5, *supra* and the definitions of "water quality standards" and "effluent limitations" set forth under Section 2. However, until Federal effluent guidelines for point sources are promulgated under the FWPCA, the "best practicable", "best available" and "secondary treatment" technology requirements must necessarily be applied on a case by case basis in issued permits, and State will need authority to do so. States also will need this authority to supplement any gap in the coverage of all point sources in issued Federal regulations or guidelines, particularly in the near term.

[9] This section is intended to prohibit the issuance of permits with respect to those discharges which may not be permitted under the FWPCA (see Sections 301(f), 402 (b) (6), 402 (d) (2) and 208(e)). The requirements for approval of State programs under Section 402 also might be satisfied by promulgation of State regulations precluding issuance of permits in these circumstances as long as the State Director clearly has authority under State law to deny permits in such circumstances (even though the proposed discharge might otherwise meet the applicable effluent limitations and water quality standards). Supporting statutory authority might be as follows:

"The Director may refuse to issue a permit for the discharge of pollutants when he finds that issuance of the permit would violate the provisions of any Federal law or rule or regulation promulgated thereunder."

[10] Subsection (b) of this section is included in order to satisfy section 402 (b) (9) of the FWPCA which requires States to have the authority to insure that industrial users will comply with, *inter alia*, section 204(b) of the Act concerning user charges. Three basic methods of insuring compliance with a system of user charges appear to be available: (a) issue permits directly to industrial users; (b) insert conditions in the permit running

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Section 10. *Pretreatment Standards*

The [Director] is authorized to apply, and to enforce pursuant to sections 18 through 21 of this Act, against industrial users of publicly owned treatment works, toxic effluent standards and pretreatment standards for the introduction into such treatment works of pollutants which interfere with, pass through, or otherwise are incompatible with such treatment works. The [Director] may promulgate such rules and regulations as are necessary to implement this section.

Section 11. *Public Notice*

The [Director] shall promulgate rules and regulations and perform all acts as may be required under State or Federal law, rules and regulations to insure adequate public notice and public participation concerning permit applications and actions related thereto.

Section 12. *Public Hearings*

The [Director] shall provide an opportunity for public hearing, with notice thereof, with respect to all permit applications in accordance with applicable provisions of State and Federal law, rules and regulations. The [Director] shall promulgate such rules and regulations as are necessary to implement this section.

Section 13. *Monitoring, Recording, and Reporting*

The [Director] may, by regulation, order, permit, or otherwise require the owner or operator of any source of a discharge of pollutants or of any source which is an industrial user of a publicly owned treatment works to:

(a) establish and maintain such records;

(b) make such reports;

(c) install, calibrate, use and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods);

(d) sample such discharges (in accordance with such methods, at such locations, at such intervals, and in such manner as the [Director] shall prescribe); and

(e) provide such other information relating to discharges of pollutants into State waters or to introductions of pollutants into publicly owned treatment works as the [Director] may reasonably require.

Section 14. *Inspection and Entry*

(a) To carry out the purposes of this Act or any rule, regulation, order, or permit issued thereunder, the [Director] or his authorized representative, upon presentation of his credentials:

(1) shall have a right to entry to, upon, or through any premises in which any effluent source is located or in which any records are required to be maintained;

(2) may at reasonable times have access to and copy any records required to be maintained;

(3) may inspect any monitoring equipment or method which is required; and

(4) may have access to and sample any discharges or pollutants to State waters or to publicly owned treatment works resulting directly or indirectly from activities or operations of the owner or operator of the premises in which the effluent source is located.

(b) For the purposes of this section the term "effluent source" shall mean (1) a point source of the discharge of pollutants or (2) a source of introduction of pollutants into publicly owned treatment works by an industrial user.

Section 15. *Public Access to Information*

Any records, reports, or information obtained under sections 13 and 14 of this Act and any permits, permit applications, and related documentation shall be available to the public for inspection and copying; *provided* that upon a showing satisfactory to the [Director] by any person that such records, reports, permits, permit applications, documentation, or information, or any part thereof (other than effluent data) would, if made public, divulge methods or processes entitled to protection as trade secrets of such person, the [Director] shall consider, treat, and protect such record, report, or information, or part thereof, as confidential, *provided further, however,* that any such record, report, or information accorded confidential treatment may be disclosed or transmitted to other officers, employees, or authorized representatives of this State or of the United States concerned with carrying out this Act or when relevant in any proceeding under this Act.

Section 16. *Revocation, Modification, or Suspension of Permits*

Any permit issued under this Act may be revoked, modified or suspended in whole or in part during its term for cause, including but not limited to the following:

(a) violation of any condition of the permit,

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between the State and municipality; and (c) provide for direct enforcement of the user charge requirements against industrial users. This draft utilizes the second two of these general approaches.

Section (b) above insures that a system of user charges will in fact be established where required under section 204(b) and give the State the power to insert such conditions in the municipal permit as are necessary and feasible to insure compliance by industrial users with such a system. Permit conditions might include (a) a condition requiring the permittee to "cut-off" a non-complying user, (b) detailed conditions which, in effect, set up the user charge system, or (c) possibly a requirement that contracts be entered into with users with a right of contract approval residing in the State or a provision that the State be made a third party beneficiary, or both.

Section 22 of this draft also gives the State the right to enforce user charge requirements directly against industrial users through injunctions and compliance orders.

Violation of compliance orders would give rise to civil penalties or could be enforced through injunctive actions. Injunctive relief could also be sought (without compliance orders) to simply order the user to comply with the user charge system or even forbid the discharger from using the municipal plant (this would amount to a shut down of the industrial plant).

Other means of insuring compliance with Section 204(b) of the FWPCA may be available to the State (such as criminal sanctions or contract actions), and the methods utilized herein are intended to be suggestive of some of the approaches which could be taken.

The balance of section 402 (b) (9) is satisfied by inclusion of provisions in the enforcement provisions, *infra*, giving the State the power to enforce pretreatment requirements, toxic effluent standards and reporting monitoring, entry and inspection requirements directly against industrial users (see sections 10, 13, 14 and 17 through 21). In addition, these same matters may be included as conditions in the municipal permit under the provisions of section 7, *supra*.

(b) obtaining a permit by misrepresentation or failure to disclose fully all relevant facts; or

(c) change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.[11]

Section 17. *Emergency Powers*

Notwithstanding any other provision of this Act, the (Director) upon receipt of evidence that a pollution source or combination of sources, including an industrial user of a publicly owned treatment plant, is presenting an imminent and substantial endangerment to the health of persons, or to the welfare of persons where such endangerment is to the livelihood of such persons, such as inability to market shellfish, may bring suit on behalf of the State in the appropriate court to immediately restrain any person causing or contributing to the alleged pollution to stop the discharge or introduction of pollutants causing or contributing to such pollution or to take such other action as may be necessary.[12]

Section 18. *Compliance Orders*

Whenever, on the basis of any information available to him, the [Director] finds that any person is in violation of any provision of this Act or of any rule, regulation, water quality standards, effluent limitations, or permit under this Act, [he] may issue an order (1) specifying the provision or provisions of this Act, or the rule regulation, water quality standard, effluent limitation, or permit alleged to be violated or about to be violated and the facts alleged to constitute a violation thereof and (2) prescribing the necessary corrective action to be taken.

Section 19. *Injunctive Relief*

The [Director] is authorized to commence a civil action for appropriate relief, including a permanent or temporary injunction, for any violation or threatened violation for which the [Director] is authorized to issue a compliance order under section 18 of this Act. Such action shall be brought in the Court [add venue provision] and such Court shall have jurisdiction to restrain such violation and to require compliance.[13]

Section 20. *Civil Penalties*

Any person who violates any provision of this Act, or of any permit, rule, regulation, standard or order issued or promulgated hereunder, shall be subject to a civil penalty not to exceed $10,000 per day of such violation.[14]

Section 21. *Criminal Penalties*

(a) Any person who willfully or negligently (1) discharges pollutants in violation of section 4 of this Act or in violation of any condition or limitation included in a permit issued under section 5 or section 6 of this Act, or (2) violates requirements of sections 13 and 14 of this Act; or (3) with respect to introductions of pollutants into publicly owned treatment works violates a pretreatment standard or toxic effluent standard, shall be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation. If the conviction is for a violation committed after a first conviction of such person under this subsection, punishment shall be by a fine of not more than $50,000 per day of violation.

(b) Any person who knowingly makes any false statement, representation, or certification in any application, record, report plan, or other document filed or required to be maintained under this Act, or by any permit, rule,

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[11] No provision is made in this section of the draft or in those enforcement provisions which follow for hearings or the means of administrative and judicial review. States may vary in their approaches to these matters and this draft does not attempt to pick one or another method of insuring adequate enforcement provisions which also provide due process to the discharger. Each of the basic substantive powers covered in the enforcement provisions of the draft should, however, be available to State Directors to insure approval of permit programs under section 402.

[12] This section provides an optional means of complying with the requirement of 40 CFR Section 124.73(b) that the State either have a procedure enabling the immediate and effective halting or elimination of imminent and substantial endangerments to the health or welfare of persons by (1) order or suit or (2) by telephonic notice to the EPA Regional Administrator. The provisions above is patterned after section 504 of the FWPCA. It should be noted that, in addition to the requirement set forth in 40 CFR Section 124.73(b), section 106 (e) (2) of the FWPCA requires that states have authority comparable to section 504 of the Act in order to qualify for program grants beginning in fiscal year 1974. The provision might be strengthened by eliminating the requirement (which could be inferred from the language above) that a showing of "pollution" rather than merely a "discharge" is a prerequisite to obtaining injunctive relief. Also, the requirement that "an imminent and substantial" endangerment be shown could be eased.

[13] Possible additional provisions which might be desirable but do not appear to be required to satisfy the minimum requirements of the FWPCA are:

(a) Clear authority to issue temporary restraining orders *ex parte*;

(b) Removal of any necessity for the posting of a bond or undertaking by the Director prior to obtaining relief;

(c) Removal of any requirement to establish irreparable harm or the inadequacy of remedies at law; and

(d) Authority for the Court to require the posting of sufficient performance bond or other security to assure the correction of the violation within the time prescribed.

[14] Section 402(b) of the FWPCA requires that the State have the authority "to abate violations of the permit or the permit program, including civil and criminal penalties and other ways and means of enforcement." 40 CFR Section 124.73 (h) provides that:

"The maximum civil penalties and criminal fines recoverable by the Director pursuant to paragraphs (e) and (f) of this section shall (a) be comparable to similar maximum amounts recoverable by the Regional Administrator under section 309 or (2) represent an actual and substantial economic deterrent to the actions for which they are assessed or levied."

Thus, although the penalties in State statutes need not be exactly the same as those established under section 309 of the FWPCA, they must represent an "actual and substantial economic deterrent."

Additional statutory provisions which could augment the civil penalties which correspond to the Federal law are:

(a) Procedures for assessment by the Director or by a State court against any violator of the costs of an investigation, inspection, or monitoring survey which led to the establishment of the violation;

(b) Procedures which enable the Director to assess against or to sue any person responsible for an unauthorized discharge of pollutants for any expenses incurred by the State in removing, correcting, or terminating any adverse effects upon water quality resulting from such unauthorized discharge of pollutants, whether or not accidental; and

(c) Procedures which enable the Director to sue for compensation for any loss or destruction to wildlife, fish or aquatic life, and for any other actual damages caused by an unauthorized discharge of pollutants, either for the State, for any residents of the State who are directly aggrieved by the unauthorized discharge of pollutants, or both.

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regulation or order issued under this Act,-or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Act or by any permit, rule, regulation, or order issued under this Act, shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than six months, or by both.

Section 22. *State Enforcement of Certain Requirements Applicable to Persons Introducing Pollutants Into Publicly Owned Treatment Works*

(a) In the event any condition of a permit for discharges from a publicly owned treatment works is violated, the Director may proceed pursuant to section 18 or 19 of this Act to restrict or prohibit the introduction of any pollutant into such treatment works by a source not utilizing such treatment works prior to the finding that such condition was violated.[15]

(b) If the Director finds on the basis of information available to him that an industrial user is not in compliance with a system of user charges required under State or Federal law, or the condition of any permit issued by the Director to the publicly owned treatment works into which such user is introducing pollutants, the Director may proceed to enforce or apply such system of charges directly against such industrial user pursuant to sections 18 and 19 of this Act.

[15] Section 402 (h) of the FWPCA gives the State the power to seek injunctive relief "in a court of competent jurisdiction" to prohibit or restrict new introductions into a treatment plant in violation of a State permit. Section 22 (a) above is included to give the State clear authority, under State law, to seek such relief in State court.

Section 23. *Board Membership*

Notwithstanding any contrary provision of State law, no board or body of this State which approves permit applications or portions thereof shall include, as a member, any person who receives, or has during the previous two years received, a significant portion of his income directly or indirectly from permit holders or applicants for a permit.[16]

Section 24. *Water Quality Planning*

The [Director]is authorized to establish and conduct a continuing planning process consistent with the requirements of the Federal Water Pollution Control Act, as amended, including but not limited to the establishment and application of maximum daily loads of pollutants.[17]

Section 25.

All laws or portions thereof in conflict with this Act are hereby repealed to the extent of any such conflict.

[16] This provision is based upon the conflict of interest clause contained in section 304 (h) (2) (D) of the FWPCA. Although no statutory requirement for a particular kind of State board or administrative scheme is contained in the FWPCA, other than the conflict of interest provision, the above section is included in order to insure that any provision of State law which would mandate a representation upon a State board violative of section 304 (h) (2) (D) would not stand in the way of approval of State's program under section 402.

[17] This section is included in order to insure adequate authority to conduct a continuing planning process required under section 303 of the FWPCA as a prerequisite to approval of a State's permit program. Although the Director is given this authority above, the State agency responsible for planning might be an agency other than the one responsible for the administration of the State's permit program.

Mr. SMITH. On page 6 you make the statement that there is no doubt that the designation of uses by State politics and legislative fiat was often based on a wish, rather than a reasonable or achieveable environmental program.

Can you give me some illustrations of that, Mr. Goulding?

Mr. GOULDING. Well, we have had cases in Georgia where the State was on the book to designate rules, and then found later that additional studies indicated it was not necessarily true that the rule was needed. It was in fact true that that use designation, could not be achieved. This was because nonpoint sources in other areas, or other sources prevented the realization of the stream use.

Mr. SMITH. Again, I would be happy if you want to respond in some further detail.

Mr. BORY. One example that comes to mind, is the Peace River in Florida. The use standards included very strict regulations on municipal and industrial treatment relating to phospherous, and yet this is one of the largest natural sources of phosphates in the country. The reduction by treatment plants to one part of phospherous per million, made very little impact on the total phospherous content of the river. Yet it was required by the original EPA and State standards.

Our point here is that where an adjustment appears to be necessary, based on actual instream sampling, the State should be permitted to make the adjustment. The original use standards designated early in the program, before there was any significant sampling data, and before actual results from the treatment plants coming on line, should be reviewable by the States and the States should be permitted to make appropriate adjustments. It is similar to the issue that was raised by the previous witness.

Mr. GOULDING. I know that nonpoint discharges have a terrific impact. NPS does not allow us to meet some of these use standards.

Mr. SMITH. We heard some discussion that we ought to move from a construction grant program to a loan program. Do you wish to comment on that?

Mr. GOULDING. I think we referred to the symposium that was held here in Washington a year ago, and I think this is something that was brought out then. A loan program with reasonable interest could provide ongoing funds that many communities would take advantage of.

I think we would basically support that type of program. Although there are some cities that still prefer to have the grant program, we feel again, as we testified, unless we have a consistent program, many communities will just stop their efforts if the funding is cut off.

Mr. SMITH. I would assume, and you could comment on this, that a grant program would likely give you more flexibility in the State of Georgia, than a loan program, which might put you in some sort of jeopardy, as far as extending the loan, or the loan payoff, et cetera.

Do you agree with that, or not?

Mr. BORY. This is a tradeoff that we really have not addressed. We feel that when Congress chose in 1981 to extend the authorization for a 4-year period, that that was part—what we testified to at

the time—of the consistency and predictability of a long-term program.

The loan program may, in fact, after 1985, be an ingredient that is appropriate or desirable, as opposed to an extension of the grant program. ACEC has really not looked at this in any detail, and has not at this time, an official position on a loan program.

Mr. GOULDING. I think there may have been some effort to say that the grant program itself would come to an end, and again a loan program would certainly be something attractive to the communities to take advantage of.

Many States, as you know, are creating their own grant and loan provisions, to try to offset the reduction of Federal funding.

Mr. SMITH. Yes, I think we are talking more about a substitution of the program,

Mr. GOULDING. Right.

Mr. SMITH. If you have any further thoughts on that, I would like to hear them.

I think it is an issue that I would like to hear a policy statement, if you are prepared to do that, because I think it gets to the question of the States continually seeking flexibility under a grant program, and I believe that a loan program could be so structured as to have greater control over what happens in the State of Georgia, for instance.

Mr. GOULDING. Right.

Mr. SMITH. That is all I have.

Mr. ROE. Are there further questions?

Mr. Goulding, we want to thank you and Mr. Bory for your valuable testimony. We appreciate your being here this morning.

Our next witness is Mr. Charles Coward of the Eagle Dyeing and Finishing Co., Mount Holly, N.J.

Mr. Coward.

Mr. Coward, we want to welcome you to our committee, and particularly the fact that you are from the great State of New Jersey.

TESTIMONY OF CHARLES W. COWARD, VICE PRESIDENT, EAGLE DYEING & FINISHING CO., MOUNT HOLLY, N.J.

Mr. COWARD. Mr. Chairman, I appreciate the opportunity to appear before you and the members, and I will make this—by reading my presentation, reading from the paper that I presume has been distributed to your committee members.

The writer is appearing before your body today to present to your members a serious problem we find our company confronted with, that, if not corrected soon, could force us to discontinue our business. Ours was started in the year 1939 as a service organization to dye and finish furniture upholstery fabrics and also yarns for the weaving trade. Since then there have been many changes in the textile field with the larger producers expanding their operations to provide them with facilities to process yarns, weaving of fabrics and dyeing and finishing of same.

Our source for business now and for several years has been the smaller weaving plants located within a reasonable transportation distance of ours.

Our processing waste water has been discharged to Mount Holly Sewerage Disposal Plant for more than 30 years, during which time we have been cooperating with each other to assure a good relationship.

The plans for redevelopment and modernizing of the Mount Holly Sewerage Disposal Plant were started in the year 1972 and, in the final design, provided for an industrial waste division for their plant expansion program. Unfortunately, two sources for industrial income have failed and closed; the Ankocas Dyeing & Finishing Co., and the Northampton Textile Co., and a third, the Arrow Safety Devices Co., has moved most of its production to the South.

As of January 1, 1983, the Mount Holly Sewerage Authority increased our costs for their services by three times their previous charges, during which time our business volume has decreased due to economic conditions affecting the textile field.

Prior to start up of the new plant we were charged a flat rate for our industrial waste sewerage service and, when we appealed to the Mount Holly Sewerage Authority for some relief from what we considered excessive new charges, were advised we would have to continue to pay the same rate of $1.62 per thousand gallons charged a residential user.

Our invoices from the Mount Holly Sewerage Authority for the first 9 months of this year have totaled $89,280, and using the same charge basis for the final 3 months of this year would be considerably above $100,000.

We are operating in a very competitive field and to add this tremendous increase to our overhead is just too much to accept. We fully realize the modernization of the Mount Holly Sewerage Plant has increased operating and maintenance costs, but they can be prorated based on a large volume user versus the very small residential. We expect to pay our proportionate share of operating and maintenance costs, but when our cost for service for the months of April were $10,213, for May $11,362, and for June $12,450, when the average residential cost per quarter—3 months—would be $50 to $60, there must be something wrong with the formula developed by the Environmental Protection Agency Clean Water Act. The operating, maintenance, and production costs are usually always lower when a large volume is made available to the producer.

Our little business is in a precarious position. We have been desperately trying to continue operations to assure the employment of 60 people, some of whom have been with us for over 30 years. Mount Holly will feel this unemployment load greatly after the closing of other plants and the sewerage authority will lose an important source of income. Taxes of many kinds will be lost.

Unfortunately, for the Mount Holly Sewerage Authority the new expansion project, completed in 1982, more than doubled the capacity of the old plant. The building expansion that was expected has not materialized for residential, commercial, and industrial users. With the loss of the industrial accounts, previously mentioned, Eagle has become the main source of industrial income for the new plant, and we should not be and we cannot be asked to carry this financial load until some other plants are available, which could be

20-955 O—84——88

several years. Many of the textile plants have moved to the southern rates where costs of building and operating are lower.

Your prompt consideration will be greatly appreciated.

We have no question with EPA regulations. We cooperated with the regional office in New York City, which has now turned the responsibility over to Trenton, N.J. We have no concern about what they have asked us to do, and we have tried to cooperate.

We are greatly concerned about the cost of our waste-water treatment the Mount Holly Sewerage Authority is charging us now. The fact that they may say to us, "we cannot make a change in this until we get some new industrial plants in Mount Holly," we are concerned about what that could mean, and we just cannot wait that long and survive.

Mr. ROE. And you have taken up with the Mount Holly people?

Mr. COWARD. We have had several meetings. I attended the hearing in January, when they announced these changes to the township. We have had them down to our office, and they have said that they cannot move on this because of the regulation prepared by the Federal EPA. They have a Federal grant and I believe the grant is over $7 million, to help them pay for this project and they cannot move until or unless that particular part of it is changed, because they have to meet the Federal regulations.

Mr. ROE. Would you—we understand what the problem is. And you have the Mount Holly people, sewer people respond to you in writing, and lay out, because of section such and such of the law, there is nothing we can do about it, unless the law is changed?

Mr. COWARD. Mr. Chairman, we have asked them, and they have written us, merely confirming what they told us, that they had to meet the EPA regulation.

Mr. ROE. But there is such a document?

Mr. COWARD. Pardon?

Mr. ROE. There is such a document. You have such a letter?

Mr. COWARD. We have it at the office, where they told us they could not move otherwise.

Mr. ROE. All right. Would you be kind enough to provide the committee with a copy of that letter, that we can attach to your testimony?

Mr. COWARD. I would be delighted.

Mr. ROE. Because they are in effect coming back and saying we are not quarreling with you as a business, yet they are coming back and saying we are precluded because of the law, or at least as the regulations are interpreted, in making any change, without some change in the law, is that basically what they are saying?

Mr. COWARD. I understand, and I will be glad to furnish you with that correspondence. And as I mentioned, we have been trying our best to keep that little plant operating. Something like this, probably to the big companies would not mean very much but to us, it does. And we have had our employees coming in and appealing to us to assure them that their jobs are secure, and it hurts to have to tell them, "well, we are in a precarious position."

So I shall be glad to get this letter from the sewerage authority, and send it to you.

Mr. ROE. Yes.

[See letter, p. 1382.]

Mr. ROE. Let me ask you this. Could you also give us, if it would not be too much work, a 10-year rundown, as to what was your sewer charges originally before you got into this situation?

Mr. COWARD. They previously had merely given us a flat rate.

Mr. ROE. Yes; that is what I mean.

Mr. COWARD. And that has been in existence for some time.

Mr. ROE. How much was that, do you recall?

Mr. COWARD. It was about $3,000 a month.

Mr. ROE. $3,000 a month?

Mr. COWARD. Yes; 2,940.

Mr. ROE. So it has tripled now?

Mr. COWARD. Yes.

Mr. ROE. Could you give us figures as to what our average rate was, to such and such a date, now the rate is so much, so that we can see that the relationship is say $30,000 a year, versus 62, whatever the case may be?

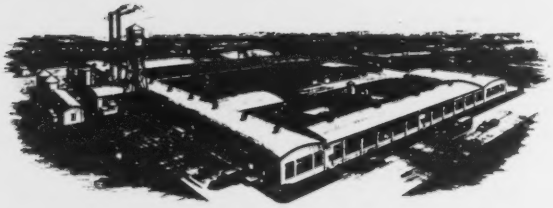
It would be more than that, it would be $100,000 a year.

Mr. COWARD. I can furnish you with copies of bills, to show what has been going on over the period of 2 or 3 years in fact.

Mr. ROE. We would appreciate that.

Mr. COWARD. I would be glad to do that.

[The following was received for the record.]



EAGLE DYEING & FINISHING CO.
MOUNT HOLLY, N. J.
08060

November 16, 1983

Congressman Robert Roe
Subcommittee on Investigations
and Oversight
B376 RHOB
Washington, D. C. 20515

Subject: Additional information requested for use in the writer's presentation of Tuesday, November 1, 1983 before your Sub-committee on Water Resources

Dear Congressman Roe:

In compliance with your request I am enclosing copies of invoices of Mount Holly Sewerage Authority for the years 1972 to 1982 when charges from the Mount Holly Sewerage Authority were on a flat rate basis.

Also enclosed is a letter from the Mount Holly Sewerage Authority covering invoices rendered for their services for each month from January 1983 to and including October 1983 when the flat rate procedure was changed to invoice us on a gallonage basis using the rate charged to residential users. This was confirmed in their letter of November 8, 1983, which we are enclosing.

In my presentation before you and your committee I advised you the cost for the Mount Holly Sewerage Authority services charged would be more than three (3) times previous charges. You will note from the accompanying letter our bills from the Authority total $100,309.10 and probably will exceed $20,000.00 for November and December.

The flat rate billing from the Authority, as you will observe from the enclosed invoices total $35,280.00 for the year 1982. The flat rate of $2,940.00 per month was used for the years 1980, 81 and 82.

The years 1972 thru 1979 the rate was $2,500.00 per month and prior to that $1,700.00.

We appreciate greatly your interest in our problem and hope you are successful in helping us.

Very truly yours,

EAGLE DYEING & FINISHING COMPANY

Charles W. Coward

Charles W. Coward
Vice President

CWC:ems
enc:
cc: Joseph A. Italiano
Congressman Edwin B. Forysthe

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

November 8, 1983

Eagle Dyeing and Finishing
Lippincott Lane
Mt. Holly, New Jersey 08060

Attention: Mr. Batten

Re: 1983 Billings

Dear Mr. Batten:

The following is list of the monthly billing for 1983 minus any interest charges incurred:

January, 1983 (5,338,000 Gals)	$ 8,723.16
February, 1983 (4,846,000 Gals)	7,926.12
March, 1983 (6,042,000 Gals)	9,963.64
April, 1983 (6,258,000 Gals)	10,213.56
May, 1983 (6,967,000 Gals)	11,362.14
June, 1983 (7,639,000 Gals)	12,450.78
July, 1983 (3,264,000 Gals)	5,363.28
August, 1983 (7,526,500 Gals)	12,267.72

September, 1983 (6,817,000 Gals)	11,119.14
October, 1983 (6,693,800 Gals)	10,919.56
	100,309.10

As per our telephone conversation, as of January, 1983 we have been billing you for the gallonage that has been coming in our facility for your company. Until that time we have only been able to estimate the flow. The rate being charged this year is the same as the gallonage rate charged to all of our Mount Holly customers as mandated under Federal E.P.A. Regulations. This rate is $1.62 per 1,000 gallons, 92% of which is for O/M costs.

If there are any further questions, please feel free to call our office.

Sincerely,

William G. Dunn
Executive Director

cc: file

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

February 23, 1972

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for January, 1972 $ 1700.00

V. Reg. No. _____
Date Paid _____
Quantity ____ P. O. File ____
Kardex
File _____

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

April 21, 1972

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for February, March, 1972 $ 3400.00

V. Reg. No.
Date Paid
Quantity
Kardex
File
Price

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

June 13, 1972

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for April, May, 1972 $ 3400.00

V. Reg. No.
Date Paid
Quantity P. O. File
Kardex File Ext.
Price & Cost Approved

ACCOUNT	AMOUNT	

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

July 7, 1972

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for June, 1972 $ 1700.00

V. Reg. No. [illegible]
Date Paid 7-6-72
Quantity B P. O. File ✓
Kardex File ✓ Ext B
Price [illegible]

ACCOUNT	AMOUNT
2132	[illegible]

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY 08060

September 13, 1972

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for July, August of 1972 $ 3400.00

V. Reg. No. 88-2386
Date Paid 9-21-72
Quantity B File ✓
Karden File ✓ B
Price & Up
ACCO. UNIT

1391

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY

December 1, 1972

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Service for September, October, November, 1972 $ 5100.00

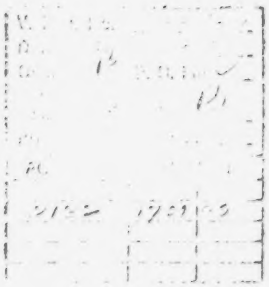
V. Reg. No. _____
Date Paid _____
Quantity P. O. File _____

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

January 16, 1973

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for December, 1972 $ 1700.00



THE MOUNT HOLLY SEWERAGE AUTHORITY

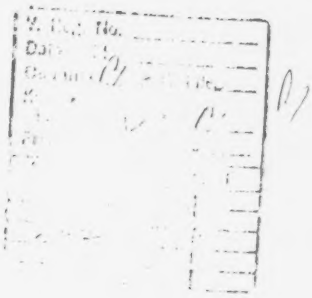
INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY

March 23, 1973

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for January, February, 1973 $ 3400.00



THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY NEW JERSEY

June 1, 1973

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for March, April, May, 1973 $ 5100.00

V. Reg. No.
Date Paid
Quantity B P. O. File
Kardex File Ext.
Price & Cy. Approved

ACCOUNT	AMOUNT	

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

July 19, 1973

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for June, 1973 $ 1700.00

V. Reg. No. _____
Date Paid _____
Quantity _____ P. O. File _____
Number _____
File _____ Bal. _____
Place _____ Forward _____

ACCT.	AMOUNT	

1396

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

October 16, 1973

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for July, August, September, 1973 $ 5100.00

V. Reg. No.
Date Paid
Quantity B P. O. File
Kardex File
Price & Pay. Approved
ACCOUNT

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY

November 19, 1973

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for October, 1973 $ 1700.00

V. Rec. No.
Date Paid

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

January 10, 1974

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for November, December, 1973 $ 3400.00

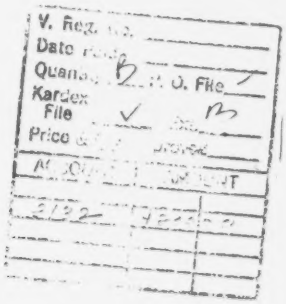
V. Reg. No.
Date Paid
Quantity
Kard
Fi
Pr
AC

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

March 1, 1974

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for January, 1974	$ 1700.00
Sewer service for February, 1974	2500.00
Total Amount Due	$ 4200.00



1400

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

May 20, 1974

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey 08060

Sewer service for March, April, 1974 $ 5000.00

V. Reg. No.
Date Paid
Quantity P. O. File
Kardex File
Price & Cat. Approved

ACCOUNT	AMOUNT	
2132	5000	00

1401

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY

July 2, 1974

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey 08060

Sewer service for May, June, 1974 $ 5000.00

V. Reg. No.
Date Paid
Quantity
Kar
Price
Account | Amount
7132

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

September 23, 1974

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for July, August, 1974 $ 5,000.00

V. Rec. No.
Date Paid
Quantity
Kardex
File
Price &
ACCOUNT | AMOUNT

1403

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

November 4, 1974

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for September, October, 1974 $ 5,000.00

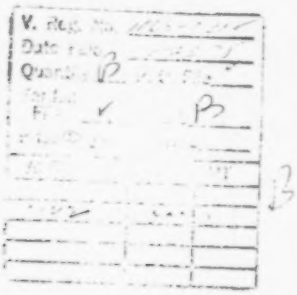
V. Reg. No.
Date Paid
Quantity
Kind
File
Price
Amount

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

January 16, 1975

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for November, December, 1974 $ 5,000.00



THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY

April 16, 1975

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for January,February,March, 1975 $ 7,500.00

V. Rec. No.
Date Paid
Comm.
File
By
Note
ACCOUNT AMOUNT
AJ32 7500 00

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

June 13, 1975

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for April, May, June, 1975 $ 7500.00

V. Reg. No.
Date Paid
Quantity
P. O. File
Kardex File
Filed
ACCOUNT AMOUNT

1407

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

October 8, 1975

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey 08060

Sewer service for July, August, September, 1975 $ 7500.00

V. Rec. No.		
Date Paid		
Quantity	P. O. File	
Kardex File	File	
Price & Ext. Approved		
ACCOUNT	AMOUNT	
2132	75	00

1408

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

December 1, 1975

Eagle Dyeing & Finishing Co.
Mt. Holly, N.J. 08060

Service for October, November, 1975 5000.00

V. Reg. No. [illegible]
Date Paid 12/6/75
Quantity 1 P. O. File ✓
Kardex File V Ext. 1
Price & Qty Approved

ACCOUNT	AMOUNT	
2132	5000	00

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

January 16, 1975

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey 08060

Sewer service for December, 1975 $ 2500.00

V. Reg. No.
Date Paid
Quantity 12 P. O. File ✓
Kardex
File ✓

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

April 29, 1976

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for January, February, March, 1976 $ 7500.00

V. Reg. No.
Date Paid
Quantity B P. O. File ✓
Kardex File ✓ Ext B
Price & Pay. Recorded

ACCOUNT	AMOUNT
2132	7500 00

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

August 27, 1976

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey 08060

Sewer service for April, May, June, July, 1976 $ 10,000.00

V. Reg. No.
Date Paid
Quantity P. O. File
Kardex File
Price & Cost Approved

ACCOUNT	AMOUNT	

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY

November 30, 1976

Eagle Dyeing & Finishing Company
Mount Holly, New Jersey

Sewer service for August,September,October,November,1976 $10,000.0

V. Reg. No.
Date Paid
N. C. File
AMOUNT
A/22 10 000 00

OK
WButler

1413

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

January 26, 1977

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for December, 1976 $ 2500.00

V. Req. No.
Date Poin
Quantity P. O. File
Kardex
File
Price & Qual. Approved
ACCOUNT AMOUNT
6132 2500 00

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

March 2, 1977

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for January, February, 1977 $ 5000.00

V. Reg. No. 2127-1174
Date Paid 4-7-77
Quantity B P. O. File
Kardex File
Price
ACCOUNT AMOUNT
2132 5000 00
B

1415

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY 08060

June 23, 1977

Eagle Dyeing & Finishing Co.
Mount Holly, N.J.

Sewer service for March, April, May, 1977 $ 7500.00

V. Reg. No. 1334-12221
Date Paid 7-8-77
Quantity 6 P. O. File
Kardex File
Price & Qty. Approved

ACCOUNT	AMOUNT	
2132	[illegible]	[illegible]

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY 08060

August 12, 1977

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey 08060

Sewer service for June, July, 1977 $ 5000.00

V. Reg. No.
Date Paid
Quantity P. O. File
Kardex
File
ACCOUNT
2132 5000

1417

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY 08060

NOVEMBER 10, 1977

EAGLE DYEING AND FINSIHING CO
MOUNT HOLLY, NJ

SEWER SERVICES FOR AUGUST, SEPTEMBER & AUGUST 1977

$7500.00

V. Reg. No.
Date Paid
Quantity
Kardex File
Price
ACCOUNT | AMOUNT
2132 | 7500 | 00

1418

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

January 17, 1978

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey

Sewer service for November, December, 1977 $ 5,000.00

V. Reg. No.
Date Paid
Quantity
P. O. No.
Kardex
File
Price
Account

1419

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY 08060

April 14, 1978

Eagle Dyeing & Finishing Co.
Mount Holly, New Jersey 08060

Sewer service for January, February, March, 1978 $ 7500.00

V. Reg. No.
Date Paid
Quantity P. O. File
Kardex File
Price & Cost
ACCOUNT AMOUNT

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY NEW JERSEY 08060

July 27, 1978

Eagle Dyeing And Finsihing Co
Mount Holly, N J

Sewer Services for April, May, June 1978 $7500.00

V. Reg. No. _____
Date Paid _____
Quantity B P. O. File ✓
Kardex File ✓ B
Price _____

ACCOUNT	AMOUNT
212	

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

November 22, 1978

Eagle Dyeing and Finishing Co
Mount Holly, New Jersey

Sewer Services for July, August, & September 1978

$7500.00 ✓

V. Reg. No. [illegible]
Date Paid [illegible]
Quantity B P. O. Rec'd
Number ✓ B

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY 08060

February 12,1979

Eagle Dyeing and Finishing Co
Mount Holly, New Jersey 08060

Sewer Services for October, November & December 1978

$7500.00

V. Rec. No
Date Paid
Quantity
Vendor File

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

August 15, 1979

Eagle Dyeing and Finishing Co.
Mount Holly, New Jersey 08060

Sewer Services for Jan, Feb, March, April, & May 1979

$12,500.00

V. Reg. No. _____
Date Paid _____
Quantity 13 P. O. File ✓
Kardex File ✓ No. 13
Price _____

ACC		JNT
5122		

13

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

September 14, 1979

Eagle Dyeing and Finishing Company
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for June, July and August 1979:

$7,500.00 ✓

MOUNT HOLLY SEWERAGE AUTHORITY

V. Reg. No.
Date Paid
Quantity P. O. File
Kardex
File
Price
UNIT

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

November 15, 1979

Eagle Dyeing and Finishing Company
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for September and October 1979:

$ 5,000.00

The Mount Holly Sewerage Authority

V. Reg. Nr.
Date
File

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

December 4, 1979

Eagle Dyeing and Finishing Company
Lippincott Lane
Mount Holly, New Jersey 08060

Services for November, 1979:

$2,500.00 ✓

The Mount Holly Sewerage Authority

Req. No.	
Date Paid	
Quantity 12	P.O. File ✓
Kardex File ✓	Ext. B
Price & Qty. Approved	
ACCOUNT	AMOUNT
[illegible]	[illegible]

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

January 4, 1980

Eagle Dyeing and Finishing Company
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for December, 1979 $2,500.00

Mount Holly Sewerage Authority

V. Reg. No.
Date Paid
Quantity P.O. File
Kardex
File Ext.
Price & Qty. Approved

ACCOUNT	AMOUNT
2122	2,500.00

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

February 11, 1980

Eagle Dyeing and Finishing Company
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for January, 1980 $2,940.00

Mount Holly Sewerage Authority

W. Rec. No.		
Date Paid		
Quantity 12 P.O. File		
Kardex File Ext. B		
Price & Qty. Approved		
ACCOUNT	AMOUNT	

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

March 5, 1980

Eagle Dyeing and Finishing Company
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for February, 1980 $2,940.00

Mount Holly Sewerage Authority

V. Reg. No. [illegible]
Date Paid [illegible]
Quantity 12 P.O. File
Kardex
File 1 Ext. 12
Price & Qty. Approved

ACCOUNT	AMOUNT	
[illegible]	[illegible]	

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

April 2, 1980

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for March, 1980 $2,940.

Mount Holly Sewerage Authority

V. Reg. No.
Date Paid
Quantity P.O. File
Kardex
File Ext.
Price & Qty. Approved

ACCOUNT	AMOUNT

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY 08060

May 1, 1980

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for April, 1980 $2,940.00 ✓

Mount Holly Sewerage Authority

V. Reg. No. 1554-1861
Date Paid 6-6-80
Quantity 12 P.O. File ✓
Kardex
File ✓ Ext. B
Price & City Approved
ACCOUNT
BIBE

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1948
MOUNT HOLLY, NEW JERSEY 08060

June 10, 1980

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, N. J. 08060

Sewer Services for May, 1980 $2,940.00 ✓

Mount Holly Sewerage Authority

V. Reg. No. 461-2123
Date Paid 1-2-84
Quantity 2 P.O. File ✓
Card'ex
File ✓ Ext. B
Price & Qty. Approved

ACCOUNT	AMOUNT	
2132	2940	00

B

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

July 9, 1980

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for June, 1980 $2,940

Mount Holly Sewerage Authority

V. Reg. No. 1162-0301
Date Paid 8-7-80
Quantity 2 P.O. File ✓
Kardex File ✓ Ext. B
Price & Qty. Approved

ACCOUNT	AMOUNT
3132	2940 00

B

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

August 20, 1980

Eagle Dying and Finishing
Lippincott Lane
Mt. Holly, New Jersey 08060

Sewer Services for July, 1980 $2,940.00

Mount Holly Sewerage Authority

Vr. Reg. No.
Date Paid
Quantity B P.O. File
Kardex
File ✓ Ext. B
Price & Qty. Approved

ACCOUNT	AMOUNT	

B

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

September 9, 1980

Eagle Dying and Finishing
Lippincott Lane
Mt. Holly, N. J. 08060

Sewer Services for August, 1980 $2,940.00 ✓

Mt. Holly Sewerage Authority

M. Req. No. 1386-2614		
Date Paid 10-3-80		
Quantity B P.O. File ✓		
Kardex File ✓ Ext. B		
Price & Qty. Approved		
ACCOUNT	AMOUNT	
[illegible]	[illegible]	[illegible]

B

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

October 2, 1980

Eagle Dying and Finishing
Lippincott Lane
Mt. Holly, N. J. 08060

Sewer Services for September, 1980 $2,940.00

Mt. Holly Sewerage Authority

Price & Qty. Approved

ACCOUNT	AMOUNT	

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

November 4, 1980

Eagle Dying and Finishing
Lippincott Lane
Mt. Holly, N. J. 08060

Sewer Services for October, 1980 $2,940.00

Mt. Holly Sewerage Authority

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

December 19, 1980

Eagle Dying and Finishing
Lippincott Lane
Mt. Holly, New Jersey 08060

Sewer Services for November, 1980 $2,940.00

Mount Holly Sewerage Authority

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

January 5, 1981

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

SEWER SERVICES FOR DECEMBER, 1980 $2,940.00

MOUNT HOLLY SEWERAGE AUTHORITY

No. 1600-3341
2-6-81
12 P.O. File
Ext. JB
Approved
Account
JB

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08050

February 4, 1981

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

SEWER SERVICES FOR JANUARY, 1981 $2,940.00

Mount Holly Sewerage Authority

Reg. No. 1606-3488
Date Paid 3-6-81
Quantity P.O. File
Index
File Ext.
Price & Qty. Approved
ACCOUNT AMOUNT

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

March 2, 1981

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

SEWER SERVICES FOR FEBRUARY, 1981 $2,940.00

THE MOUNT HOLLY SEWERAGE AUTHORITY

Vouch. Reg. No. 1612-3700
Date Paid 4-3-81
Check No. 13 P.O. Ent.
Approved
Pay V Ent P
P.O. Clerk Approved
Entered
Posted
2132

OK
WB

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

April 28, 1981

Eagle Dyeing and Finishing
Lippincott Lane
Mt. Holly, New Jersey 08060

SEWER SERVICES FOR MARCH, 1981 $2,940.00

Mt. Holly Sewerage Authority

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

May 4, 1981

Eagle Dyeing and Finishing
Lippincott Lane
Mt. Holly, New Jersey 08060

SEWER SERVICES FOR APRIL 1981 $2,940.00

Mt. Holly Sewerage Authority

1606-4064
6-4-81

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

May 29, 1981

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

SEWER SERVICE FOR MAY 6, 1981

$2,940.00 ✓

MOUNT HOLLY SEWERAGE AUTHORITY

1445

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

June 30, 1981

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

SEWER SERVICES for June, 1981 $2,940.00

Mount Holly Sewerage Authority

V. Reg. No. 1832-4246
Date Paid 7-14-81
Quantity — P.O. File
Kardex
File ✓ Ext.
Price & Cov Approved
ACCOUNT | AMOUNT

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

July 31, 1981

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

SEWER SERVICES FOR JULY, 1981 $2,940.00

Mount Holly Sewerage Authority

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

August 24, 1981

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for August, 1981 $2,940.00

Mount Holly Sewerage Authority

V. Rep. No.	
Date Paid	
Voucher	P.O. File

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

September 24, 1981

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for September, 1981 $2,940.00

MOUNT HOLLY SEWERAGE AUTHORITY

1618-4952
B 11-5-81
B
B
0132 2940 00

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1945

MOUNT HOLLY, NEW JERSEY 08060

October 30, 1981

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for October, 1981 $2,940.00

MOUNT HOLLY SEWERAGE AUTHORITY

V. Reg. No. 662-5110	
Date Paid 12-4-81	
Quantity 12 P.O. File ✓	
Index	
File ✓ Ext. 3	
& City Approved	
ACCOUNT	AMOUNT
2132	2940.00

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

November 30, 1981

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

SEWER SERVICE FOR NOVEMBER, 1981 $2,940.00

MOUNT HOLLY SEWERAGE AUTHORITY

1664-5250
1-6-82

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

January 12, 1982

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for December, 1982. $2,940.00

MOUNT HOLLY SEWERAGE AUTHORITY

No. 1625-5457
Date 2-4-82
Order 12 P.O. File
Exp.
Approved
Amount

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

February 24, 1982

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

SEWER SERVICE FOR JANUARY 1982 $2,940.00

Mount Holly Sewerage Authority

N. Reg. No. 641-561K
Date Paid 3-5-82
Quantity 12 P.O. File

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

March 9, 1982

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Service for February, 1982. $2,940.00

MOUNT HOLLY SEWERAGE AUTHORITY

1655-5137
3-31-82

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

March 24, 1982

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for March; 1982 $2,940.00

The Mount Holly Sewerage Authority

Reg. No. 152-5767
Date Paid 5-6-82
Quantity 12 P.O. File
Ext. 12
Approved
AMOUNT

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

May 9, 1983

Rec'd. No.	682 - 5564
Date Paid	5-6-83
Quantity	P.O. File
Kardex File	Ext.
Price & Qty. Approved	

ACCOUNT	AMOUNT	

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Service for April, 1983 $2,940.00

MOUNT HOLLY SEWERAGE AUTHORITY

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

May 26, 1982

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for May, 1982 $2,940.00

The Mount Holly Sewerage Authority

***Please note charges for 2 months are presently delinquent

V. Reg. No.
Date Paid
Quantity P.O. File
Kardex
File Ext.
Pric. & Qty. Approved

1457

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

June 30, 1982

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for June, 1982 $2,940.00

The Mount Holly Sewerage Authority

Reg. No. 1706-6357
Date Paid 7-22-82
Quantity 1 P.O. File
Kardex
File ✓ Ext. 1
Price & Qty. Approved

ACCOUNT	AMOUNT	
2132	2940	00

B

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

July 26, 1982

Eagle Dying and Finishing
Lippincott Lane
Mt. Holly, New Jersey 08060

Sewer Services for July, 1982 $2,940.00

The Mount Holly Sewerage Authority

Reg. No. 1245-664
Date Paid 8-2-82
Quantity 12 P.O. File
Index
File ✓ Ext 13
Price & Qty. Approved 13

ACCOUNT	AMOUNT	
2122		

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1946

MOUNT HOLLY, NEW JERSEY 08060

August 23, 1982

RECEIVED

Eagle Dying and Finishing
Lippincott Lane
Mt. Holly, New Jersey 08060

Sewer Services for August, 1982 $2940.00

THE MOUNT HOLLY SEWERAGE AUTHORITY

P.O. File

Ext.

City Approved

	AMOUNT

THE MOUNT HOLLY SEWERAGE AUTHORITY

INCORPORATED 1948

MOUNT HOLLY, NEW JERSEY 08060

September 24, 1982

Eagle Dying and Finishing
Lippincott Lane
Mt. Holly, N. J. 08060

Sewer Services for September, 1982 $2.940.00

THE MOUNT HOLLY SEWERAGE AUTHORITY

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

November 23, 1982

Eagle Dyeing and Finishing
Lippincott Lane
Mount Holly, New Jersey 08060

Sewer Services for October, 1982	$2,940.00
Sewer Services for November, 1982	2,940.00
	$5,880.00

The Mount Holly Sewerage Authority

Reg. No.
Date Paid
Quantity 2 P.O. File
Index
File Ext.
Qty. Approved
ACCOUNT AMOUNT
2/82

THE MOUNT HOLLY SEWERAGE AUTHORITY
INCORPORATED 1946
MOUNT HOLLY, NEW JERSEY 08060

December 20, 1982

Eagle Dying and Finishing
Lippincott Lane
Mount Holly, N. J. 08060

Sewer Services for December, 1982 $2,940.00

The Mount Holly Sewerage Authority

Mr. ROE. All right. Is there any further questions by the members?

No further questions.

Thank you very much, Mr. Coward. We will look forward to that.

Mr. COWARD. I appreciate the opportunity to be here.

Mr. ROE. I appreciate your being here, and please give us the added information.

We now have with us as our next witness, representing the National Utility Contractors Association, Mr. Leon Asadoorian, President of the Methuen Construction Co.; and Mr. Robert Briant, executive director, Utility Contractors Association of New Jersey.

We want to welcome you gentlemen back to the committee again, and appreciate all the help you have been to us over the past, and I note that you have with you—I thought that bag was going to contain your testimony.

You have submitted two methods of information, presentation of information—really, one is your written report—and then you have digested that into your oral report.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

NATIONAL UTILITY CONTRACTORS ASSOCIATION
(NUCA)

Represented by

Leon Asadoorian, President
Methuen Construction Company
Methuen, Massachusetts

and

Robert Briant, Executive Director
Utility Contractors Association of New Jersey
Edison, New Jersey

WATER POLLUTION CONTROL ACT AMENDMENTS

Subcommittee on Water Resources
Honorable Robert Roe, Chairman

November 1, 1983
Washington, D.C.

National Utility Contractors Association
(NUCA)

SUMMARY
of Recommendations

1.) Reauthorize the Clean Water Act, including Title II (EPA Construction Grants Program) through 1988.

2.) Retain Collectors, Combined Sewer Overflow (CSO) correction as separate categories eligible for federal funding.

3.) Increase federal funding for Title II above the current $2.4 billion authorization.

4.) Amend Title II to permit States to use their EPA construction grants as loans, should they so desire.

5.) Dedicate the limited federal funds available toward the correction of identifiable point sources of of pollution, not non-point sources.

Mr. Chairman and members of the committee, I am Leon Asadoorian, President of the Methuen Construction Company of Methuen, Massachusetts. Joining me is Robert Briant, Executive Director of the Utility Contractors Association of New Jersey. Together we are representing the National Utility Contractors Association, or NUCA.

Our national association is comprised of some 2,000 companies nationwide -- contractors, suppliers, and manufacturers -- that specialize in water delivery and wastewater treatment construction projects, particularly underground pipeline work. Our members lay the pipe and build the treatment plants necessary to achieve the goals set forth by Congress in the Federal Water Pollution Control Act.

Public education campaigns conducted by NUCA and other groups have been successful in one important respect: many people are beginning to realize the decaying condition of our water delivery and wastewater treatment systems, and our highways and bridges. The even more crucial problem, however, has not been adequately addressed: how does the nation pay to repair and rehabilitate this network of public services?

As a result of our association's members' work in building many of the wastewater treatment facilities funded as a result of the federal statute now before this committee, we wish to take this opportunity to offer the utility construction industry's views on the program and to offer our recommendations on possible improvements to the Act.

Mr. Chairman and members of the committee, in light of your time limitations, I wish to submit for the public record a copy of our complete testimony at this time and then briefly summarize it for you. We will then be happy to answer any questions you may have.

Mr. Chairman, members of the utility construction industry strongly feel a partial, but important, answer to the question of how to alleviate the nation's water pollution problem is provided in Section 3 of Committee Chairman Howard's proposal, H.R. 3282. In short, that provision reauthorizes the EPA Construction Grants program through fiscal 1988.

Reauthorization

Legislation adopted in 1981, through the tireless efforts of Chairman Roe and this subcommittee, extended the sewage treatment construction program only through fiscal 1985. President Reagan has indicated his desire to then fund the program through "block" grants to the states.

In our opinion, this approach would deal a serious setback to this nation's clean water effort. Under the block grant approach, state and local officials would have discretion in deciding which of a wide array of programs would receive funding. Unfortunately, funding for sewer pipelines and treatment plants is not politically popular. It has been our experience that, unless funding is specifically earmarked, many local government officials are extremely hesitant to dedicate funding for sewage treatment projects. Therefore, we feel a continuation of the federal program is essential to meet the goals of the Clean Water Act.

Collectors, Rehabilitation, CSOs

In addition to reauthorizing the Construction Grants program, another recommendation the utility construction industry feels is crucial to the future of the nation's clean water effort is the critical need for Congress to retain in its reauthorization legislation certain categories currently eligible for federal funding that are scheduled for inclusion in a "set-aside" category in fiscal 1985.

Specifically, we urge you to ensure that sewer rehabilitation, combined sewer overflow (CSO) correction and sewe lection systems remain as separate categories eligible for federal funding. Under the 1981 amendments, these categories are scheduled for inclusion in each Governor's 20 percent set-aside fund beginning in fiscal 1985.

In many regions of the nation, the major problem in meeting local water pollution needs lies not in treatment plant construction, but in upgrading their sewage collection systems. I have with me a section of collector pipe recently replaced in the Boston, Massachusetts area. As you can see, corrosion and the accumulation of sediment over many decades of use have severely hampered the usefulness of this pipeline. Unfortunately, the condition of this pipe often represents the norm rather that the exception in many areas. Many of these pipelines have been in use for nearly a century. They are cracked, broken and corroded beyond repair. EPA estimates that leakage into these pipes constitutes 25 percent of the total existing flow to the nation's treatment plants. As a result, we contend that sound collector sewer systems would result in the need for lower capacity -- and less costly -- treatment plants.

Mr. Chairman, wastewater treatment systems are just that: systems. The efficiency of a system is dependent upon each of its parts. Sound collector pipelines alone are inadequate if the treatment plant is obsolete and, conversely, a treatment plant -- regardless of its degree of high technology -- does little good if the pipelines carrying wastewater to it are aged, leaking and corroded.

Significantly, a National League of Cities survey finds that 50 percent of 1,400 participating city governments said their wastewater collection systems need major repair. Smaller communities in particular, where collector pipeline construction constitutes nearly 80 percent of total project cost, would be particularly hard hit if collector funding is reduced.

In short, the utility construction industry feels collection systems, in particular, as well as rehabilitation and combined sewer overflow correction, must remain as separate categories eligible for federal funding. While they would remain eligible when lumped together under each governor's discretionary fund, shifting them to a set-aside program would in our opinion, a.) send a signal to State and local officials that these categories are of less importance and b.) as a result, lead to reduced funding for them. Without adequate funding for collector systems and other pipe-related needs, this nation's war on water pollution is being waged with a half-empty arsenal.

Funding

Mr. Chairman and members of the Subcommittee, in addition to reauthorizing the program and retaining certain separate

categories, NUCA strongly supports increased yearly authorizations to fund it. I want to say at the outset that yes, as utility contractors we hope our industry would benefit from this increased funding through the competitive bidding system. But it is evident that the current $2.4 billion yearly appropriation is simply inadequate to meet current or projected needs.

As a result of massive underinvestment in properly maintaining existing systems, and in projecting future needs, the EPA estimates $118 billion will be needed by the year 2000 to comply with federal water quality requirements. While we are aware of the somewhat inflated projections contained in the EPA survey, other studies and statistics leave little doubt the financial requirements are immense.

Perhaps the most significant statistic is the survey indicating that nearly one-half of the nation's communities are unable to add additional homes or businesses onto their sewage treatment systems because they are already operating at full capacity. Simply stated, these basic public facilities are essential to the future economic growth of our nation.

Our industry feels the current $2.4 billion annual appropriation represents a "penny wise and pound foolish" approach to the Construction Grants program. A reduction in funding to the $2.4 billion dollar figure did not reduce the overall cost of our clean water needs. If anything, construction delays resulting from decreased funding have added to the total cost of the program when you consider that construction costs in the U.S. rose 65 percent between 1976 and 1983.

We compare the $2.4 billion annual figure to running in place -- we are barely keeping up with current funding needs without making a real dent in our overall needs.

And let there be no doubt that the utility construction industry has adequate capacity to more than handle the increased construction additional funding would entail. Unemployment within our industry presently hovers at the 30 percent mark. Hundreds of businesses have closed their doors as a result of declining wastewater treatment construction. Engineering and manufacturing interests have also suffered severely.

After initial delays in obligating appropriated funding due to the regulatory changes required by the '81 amendments, the EPA Office of Water, under the able administration of Henry Longest, is doing a good job in expediting the obligation of grants to municipalities. As of October 1 of this year, only $1.2 billion remained in fiscal 1983 appropriations. I think you will agree, Mr. Chairman, that this figure is substantially lower than corresponding unobligated monies from previous years and is an indication that additional funding is needed for the program.

State Loan Programs

In addition to increased funding, however, we of NUCA feel the statute before you should be amended to permit states to use all or part of their share of EPA construction grants as loans. My own State of New Jersey has been in the forefront of this concept with its "Infrastructure Bank" proposal, which is now being considered by the State legislature.

In short, the New Jersey proposal would operate as follows: capital funds (federal, state and private) would be deposited in special state loan accounts to be awarded as no- or low-interest loans to eligible communities for the construction or repair of roads, bridges, water and wastewater treatment systems. Loan repayments would represent a source of capital for additional loans.

State officials estimate many more sewage treatment projects could be built through this type of loan program than through a strictly-grant program. Once a federal EPA grant is used for a particular project, that money is obviously no longer available for other projects because the grant is not repaid.

The bottom line is this: under the current grant program, only a small handful of communities will receive funding while the remainder must finance projects on their own or, more likely, postpone construction in hopes of receiving a federal grant at some distant future date.

One potential problem we see in the New Jersey plan is that while initial EPA grant money would be required to be loaned for wastewater treatment projects, it fails to dedicate repaid sewage treatment loan monies for that purpose. In short, we feel Congress should permit States to use their EPA grants in a loan program, but language should be included requiring that those sewage treatment loan repayments be dedicated for additional sewage treatment projects.

We stress that this proposal would in no way <u>require</u> States to use their EPA grants as loans. It would merely <u>permit</u> interested States to use all, part or none of their grant money as loans for wastewater treatment construction projects.

There is no doubt this practice will result in increased user fees paid by businesses and households -- not to the degree, however, some opponents to the plan claim.

Mr. Chairman, the people of this nation have grown accustomed to paying artificially low user fees for sewage disposal services. Nationwide, a survey of 66 cities shows that the average family pays less than 50 cents per day for the collection and treatment of their wastewater. These low rates are largely responsible for the decaying condition of many systems. Wastewater collection, treatment and disposal is a vital, yet costly service, and the American consumer must realize the true cost of that service.

Non-Point Sources

Lastly, a number of proposals are being considered to control non-point sources of water pollution. We suggest, as have other witnesses before us, that insufficient data currently exists as to the technology and cost involved in correcting the non-point source problem. We feel that until further research has been conducted in this area, Congress should concentrate on earmarking its limited funds on correcting identifiable and correctable problems; namely, point sources of water pollution.

Mr. Chairman, in closing we wish to reiterate our wholehearted support for the reauthorization of the construction grants program at increased funding levels through fiscal 1988. In order to further increase the effectiveness of this vital program, however, we again urge you to amend the Act to permit states to use their grant allotments as loans for wastewater treatment projects. In addition,

the continued eligibility of collection, rehabilitation and combined sewer overflow projects for federal funding is imperative to the success of the clean water effort.

This nation has made significant progress in its effort to clean our waters, yet the job is only partially complete. To those who may be critical of the costs involved and their impact on the federal budget, we offer this analysis: a reduction in the federal budget is dependent upon economic growth, and economic expansion is dependent upon a sound infrastructure.

Thank you for giving us the opportunity to appear today, and we will be happy to answer any questions you may have on our testimony.

NATIONAL UTILITY CONTRACTORS ASSOCIATION
(NUCA)

Represented by

Leon Asadoorian, President
Methuen Construction Company
Methuen, Massachusetts

and

Robert Briant, Executive Director
Utility Contractors Association of New Jersey
Edison, New Jersey

WATER POLLUTION CONTROL ACT AMENDMENTS

Subcommittee on Water Resources
Honorable Robert Roe, Chairman

November 1, 1983
Washington, D.C.

20-955 O—84——94

Leon Asadoorian
Robert Briant

Representing the
National Utility Contractors Association

Introduction

I appear before you as a representative of the National Utility Contractors Association (NUCA) and the Utility Contractors Association of New Jersey.

Our national association, NUCA, is comprised of 2,000 companies nationwide--contractors, suppliers, and manufacturers--that specialize in water delivery and wastewater treatment construction projects, particularly underground pipeline work. NUCA members lay the pipe and build the treatment plants necessary to achieve the goals set forth by Congress in the Federal Water Pollution Control Act. In short, we see it as our duty to build the projects necessary to meet the "clean water" requirements mandated by Congress.

As a result of our work in building many of the wastewater treatment facilities funded as a result of the federal statute now before this committee, we wish to take this opportunity to offer the utility construction industry's views on the program and to offer our recommendations on possible improvements to the Act.

Since early in 1982, NUCA and other organizations have mounted public education campaigns designed to draw attention to the nation's decaying infrastructure. Our association is also heavily involved in a long-term campaign called "Good Water, America", which is a coalition of groups raising the consciousness of the American people as to the water-related problems facing this nation both now and in future decades.

Partly as a result of the publicity that has been focused on the nation's infrastructure-related problems in recent months, many people are beginning to realize the decaying condition of our water delivery and wastewater treatment systems, and our highways and bridges. The even more crucial problem, however, has not been adequately addressed: how does the nation pay to repair and rehabilitate this network of public services?

NUCA members feel a partial answer to that question is provided in Section 3 of Committee Chairman Howard's proposal, H.R. 3282. In short, the legislation reauthorizes the EPA Construction Grants program through FY 1988 at increased yearly funding levels.

Reauthorization

As you know, legislation adopted by Congress in 1981 extends the sewage treatment construction program only through fiscal 1985. It was only through the tireless efforts of Chairman Roe and this subcommittee that this extension was achieved. President Reagan has made it clear he then intends to turn over the program to the states as part of his "new federalism" approach to government. Under this plan, funding for the wastewater treatment program would be incorporated into a block grant and, eventually, would be the responsibility of the individual states.

In our opinion, this approach would deal a serious setback to this nation's clean water effort. The "new federalism" plan would provide states with one lump sum of money for a wide variety of federal programs, including wastewater treatment.

State and local officials would then have discretion in deciding which of the programs would receive funding. It has been our experience that, unless funding is specifically earmarked for that purpose, many local political leaders are hesitant to dedicate funding for the construction of sewer pipelines and wastewater treatment plants because they are not particularly popular. Sewage treatment plants are built away from the public eye; sewer pipelines are located underground--out of sight and, often, out of mind. As a result, most local officials would prefer to spend taxpayer dollars on more visible public projects.

A continuation of the federal Construction Grants Program is essential to meet the goals of the Clean Water Act and, as a result, we wholeheartedly support the reauthorization of the program through fiscal 1988.

Increased Funding

In addition, NUCA strongly supports increased yearly authorizations for the program. I want to say at the outset that, yes, as utility contractors we hope our industry would benefit from this increased funding through the competitive bidding system. But it is obvious from a number of recent studies that the current $2.4 billion annual appropriation for the program is inadequate to meet current or projected needs.

Bluntly stated, the problems confronting this nation's sewage treatment systems are acute, they are immediate and they are widespread across the nation. In the Boston area, much of the sewer system has been in operation for more than a century. Antiquated

wooden pipes still transport part of the city's waste, and authorities estimate the region loses 30 percent of its wastewater through aged, leaking pipes. Orlando, Florida, is prohibited from adding more homes to its already overloaded sewer system. One-third of all sewer lines in Albuquerque, New Mexico are so deteriorated that trucks traveling over them cause the pipelines and the highways above them to collapse.

The serious dilemma this nation faces is the result of long-term, massive underinvestment or, in the words of representatives of the National Governors Association before the Senate Environment & Public Works Committee, "The nation is confronting a crisis precipitated by insufficient and inefficient public investment in the maintenance and development of public works."

In times of reduced government and tightening budgets among the first items to be targeted for reduced funding are public works construction and maintenance.

All told, the EPA estimates it will cost $118 billion by the year 2000 in order for the nation's wastewater treatment systems to comply with current environmental requirements. Under current law, the projected federal share of those costs has been reduced to roughly $37 billion. While we are aware of the somewhat inflated projections contained in the EPA survey, there is little doubt the financial requirements for the remainder of this century are immense.

We also wish to bring to your attention the April, 1983, report by the Congressional Budget Office (CBO) entitled, "Public Works Infrastructure: Policy Considerations for the 1980s." The

report from this highly respected body states, "Inadequate sewer pipes and sewage treatment as well as insufficient capacity to handle storm runoff characterize many of the nation's 15,000 wastewater treatment systems ... but projected federal and non-federal outlays combined fall short of (projected needs) by about 24 percent."

The CBO report also indicates EPA and other federal agencies, under the appropriations ceilings now authorized, will spend an average of $3.2 billion on wastewater facilities each year between now and 1990. In order to meet all estimated needs, the CBO indicates federal spending would have to increase to an average of $4.2 billion each year between 1983 and 1990--roughly a 25 percent increase.

Additional statistics also support the need for increased funding for the construction grants program:

- The current backlog (total existing needs) for compliance with the Act is estimated at $92.6 billion, according to EPA;
- Approximately $8 billion in wastewater treatment projects ready for construction currently await funding;
- According to Pat Choate, co-author of "America in Ruins," it will cost $25 billion over the next five years alone to meet pollution control standards;
- Nearly one-half of the nation's communities are unable to add additional homes and businesses onto their sewage treatment systems because those systems are already operating at full capacity.

It is this last statistic that is particularly alarming. A sound network of basic public facilities is essential to the future economic growth of our nation. Studies indicate businesses and industries place the condition of an area's sewer and water system near the top of their list of criteria in determining whether to build, expand or relocate.

Perhaps the most convincing argument in favor of increased funding is to consider the financial risks involved in continuing with inadequate current funding levels ($2.4 billion annually). A mere reduction in funding from previous levels did not reduce the overall cost of our clean water needs. If anything, it has contributed to delays in construction which, in turn, will add to the total cost of the program.

We feel a $2.4 billion annual authorization represents a "penny wise and pound foolish" approach to the Construction Grants program. Low annual expenditures prolong the nation's clean water problems and, thus, prolong the very need for the federal program. Studies indicate that between 1976 and 1983, construction costs in this nation increased by 65 percent. Thus, the reduced annual appropriation for the program can be compared to running in place--we are barely keeping up with funding needs without making a real dent in the problem.

And let there be no doubt that the utility construction industry has adequate capacity to more than handle the increased construction additional funding would entail. Unemployment within our industry currently stands in the area of 30 percent. Businesses have cut back to the bone or closed their doors altogether as a

result of the decline in wastewater treatment construction. In addition, the projects that are currently being bid will be constructed at "bargain basement" prices as more companies compete for fewer construction projects.

The underutilized capacity currently existent in our industry is unprecedented, and the ripple effect this situation has on related industries such as engineering and manufacturing is obvious in the nation's unemployment rate.

State Loan Programs

There is little doubt the health of the American people and the health of our nation's economy would be well-served by authorizing funding increases for the construction grants program. However, we of NUCA and the UCA of New Jersey feel the statute should be amended to permit states to use all or part of their share of the EPA grant program in state loan programs.

In light of the immense price tag placed on meeting the nation's water quality goals, nearly every group and individual familiar with the problem--contractors, environmentalists, engineers, manufacturers and municipal officials--agree on one point: the need to develop alternative means of funding wastewater treatment systems, other than the federal construction grants program, is imperative.

NUCA has studied a variety of proposals and concluded that the most effective mechanism would be state infrastructure loan programs. The basic premise of state loan programs is quite similar to legislation introduced by a member of this subcommittee, Congressman Clinger, whose proposal would institute a federal infrastructure loan program.

In short, capital funds would be deposited in special state loan accounts and no- or low-interest loans would be awarded to eligible municipalities for the construction or repair of roads, bridges, water and wastewater treatment systems. Funds repaid to the program by these municipal governments, as well as any interest earned, would represent a source of capital for these and additional projects. Thus, loan repayments will maintain the equity capital of the loan program and provide it with a source of funds for subsequent loans.

The State of New Jersey has been in the forefront of this concept as a result of its "Infrastructure Bank" proposal, which is now being considered by the New Jersey State Legislature.

Simply stated, state officials estimate many more sewage treatment projects can be built through an infrastructure loan program than through the federal construction grants program. For example, if the Clean Water Act, as amended in 1981, receives its full authorization of $2.4 billion annually through fiscal 1985, New Jersey would receive a total of $385 million. The state still faces nearly $2.5 billion in additional construction costs to meet federally-mandated clean water goals. In other words, the state faces a $1.8 billion shortfall in funding, which may never be eliminated under the present grant system. Once a federal EPA grant is used for a particular treatment works project, that money is no longer available for other projects since the grants are not repaid.

Under the state loan program concept, however, the state agency--or Infrastructure Bank in New Jersey--would have authority to issue debt on behalf of localities for their portion of total

construction costs. A portion of the state program's capital could also serve to enhance the credit worthiness of localities which might otherwise not have access to public credit markets.

The bottom line is this: states maintain a priority list of thousands of wastewater treatment projects waiting to receive an EPA construction grant. Under the current grant program, only a small handful will receive funding while the remaining localities must either finance projects on their own or, more likely, postpone construction in hopes of receiving a federal grant at some future time. A low-interest loan from a state loan program would provide those municipal governments with an affordable source of financing and enable many more projects to go to construction.

One potential problem we see in the New Jersey plan is its failure to dedicate projected repaid wastewater treatment loan monies for additional sewage treatment projects. As the proposal is now worded, loans made by the bank that make use of federal EPA construction grant money must be earmarked for wastewater treatment construction. However, repayments of those loans--to be used as second and third generation loans--could be used for other projects unrelated to water quality improvement. In short, we feel the Congress should permit states to use their EPA grants in a loan program, but it should include language requiring that those wastewater loan repayments be dedicated toward additional sewage treatment projects.

User Fees

There is no doubt that the use of EPA grant money as loans will result in an increase in user fees paid by businesses and households. The increase, however, is not projected to be as high as

some have claimed. In New Jersey, for example, the average user fee for a system receiving a total of 63% in federal and state grants (55% federal and 8% state matching share) is estimated at $210 per year. Under a 63% no-interest loan, the user fee would rise to $279 per year.

In addition, Mr. Chairman, NUCA feels there is a crucial need for owners of American homes and businesses to pay increased rates for wastewater treatment services. The people of this nation have grown accustomed to paying artificially low user fees for sewage disposal services. Nationwide, a survey of 66 cities showed that the average family paid less than 50 cents per day for collection and treatment of their wastewater. It is this practice that is largely responsible for the decaying condition of many of our municipal sewer systems. The low rates determined by local authorities are hardly adequate to pay only for the cost of treatment plant or pipeline construction; they do not provide the funding necessary to operate and maintain the system in future years.

Wastewater treatment and disposal is a vital, yet costly, public service, and the American consumer must realize the true cost of that service.

In supporting an amendment to the federal clean water statute, we stress that this proposal would in no way <u>require</u> states to use their EPA grant as loans; it would merely <u>permit</u> those interested states to use all, part or none of their grant money as loans for wastewater treatment construction projects.

<u>Collectors, Rehabilitation, CSOs</u>

Utility contractors also feel it is critical Congress retain in its reauthorization legislation certain categories currently eligible for federal funding scheduled for inclusion in a set-aside

category in fiscal 1985. In particular, we strongly feel sewer rehabilitation, combined sewer overflow (CSO) correction and sewer collection systems remain as separate categories eligible for federal funding. Under the 1981 amendments, these categories are eligible for EPA construction grants funding only through fiscal 1984. Thereafter, a governor is permitted to set aside 20 percent of his State's annual EPA allotment for projects in these categories.

As a result, we feel federal funding for collection pipeline construction and other pipeline-related needs will be reduced significantly, making them dependent upon state and local funding. Unfortunately, only a small handful of states have collector funding programs at a time when the vast majority of municipal governments are facing severe budgetary restraints. Communities could raise money for these projects through the municipal bond market, but many are unable because they have reached their bonded debt limit.

In many regions of the nation, particularly--but not limited to--the older urban areas of the Northeast and Midwest, the major problem in meeting local water pollution needs lies not in additional wastewater treatment plant construction, but in overhauling and upgrading their sewer pipeline systems.

Rehabilitation and repair is crucial in correcting leakage in these systems. In 1980, EPA estimated that infiltration/inflow constituted 25% of total existing flow to the nation's treatment plants. As a result, plants were treating as much as one-third more water flow than necessary.

Combined sewer overflow (CSO) correction remains a critical and costly problem in many areas. Some cities with a significant

combined sewer system--single pipelines transmitting both sewage and rainwater runoff (collected via street drains)--contribute a large share of the pollutants in their waterways to CSO overflows.

There is no doubt that the construction of collector sewer systems is a crucial element in this nation's clean water effort. Wastewater treatment systems are just that: systems. The efficiency of a system is dependent upon each of its parts. Sound collector pipelines alone are inadequate if the treatment plant is obsolete and, conversely, a sophisticated treatment plant does little good if the pipelines carrying wastewater to it are aged, leaking and corroded. Significantly, 50% of the 1,400 city governments that participated in a National League of Cities survey said their wastewater collection systems need major repair.

Currently, approximately 66 million Americans are without sewer service. The alternative is largely the use of septic tanks. When operated and maintained properly by owners living on suitable soil, septic tanks can provide a cheap and efficient method of waste disposal. However, studies indicate that at any one time, 22 to 66 percent of the septic tanks in the United States are malfunctioning. More importantly, malfunctioning tanks are a major source of both groundwater and surface water pollution.

The recent EPA Needs Survey projects a need for over 73,000 miles of collector sewers by the year 2000 costing some $40 billion. If forced to bear the burden of financing collector construction, communities of all sizes would be hard-hit. Municipalities with a population of 25,000 or less would be particularly affected because, due to a lower population density, collectors

constitute nearly 80 percent of the total project cost. Eliminating collector sewer eligibility represents a "big city" bias in the program by unfairly penalizing smaller communities.

Mr. Chairman and members of the committee, as utility contractors who replace existing sewer pipelines on a daily basis, we have a unique first-hand knowledge of the condition of these collector lines. Often, they have been in use for nearly a century. Many are constructed of outdated materials such as wood or brick. They are cracked, broken and corroded beyond repair due not to faulty materials, but due simply to age, overuse and neglect. Our position can best be stated by citing a recent survey which found that from half to as much as 90 percent of the flow in some urban collection systems is ground and surface water as a result of infiltration-inflow. We contend that replacing or repairing collector sewers would result in the need for treatment plants with a lower capacity than are now being built.

There is little doubt that the EPA, under the Gorsuch administration, emphasized the awarding of grants for treatment plant construction rather than collection system construction, sewer rehabilitation or CSO correction. In its most recent survey estimating a current backlog of some $92.6 billion in construction needs, the agency estimates $16.8 billion, or 18 percent, of the nation's current clean water needs lie in the construction of collection systems. Yet, figures compiled by EPA indicate only 9 percent of construction grants money was obligated for that purpose in 1982. The backlog of needs for combined sewer overflow correction is even greater.

As previously mentioned, collector pipeline construction, rehabilitation work and combined sewer overflow correction will still remain eligible for federal funding after fiscal 1984 when the three categories are lumped together as part of each Governor's 20 percent set-aside fund. However, given the importance of these functions in the overall clean water effort, we strongly feel they should be retained as separate categories eligible for federal funding. Shifting them to a set-aside program would, in our view, a.) send a signal to state and local officials that these categories are of less importance, and b.) as a result, lead to reduced funding for those categories of projects.

Without adequate funding for collector pipelines, this nation's war on water pollution is being waged with a half-empty arsenal. NUCA strongly urges the committee to amend Title II of the existing statute by making collector sewers again eligible for federal funding, as separate categories, along with the rehabilitation and CSO categories.

Non-Point Sources, Other Issues

The association also feels Congress should take action in order to avoid delays in issuing dredge and fill permits under Section 404, the wetlands protection provision.

Specifically, we recommend that Section 401 (a)(1) be changed to decrease the amount of time for Section 401 Water Quality Certification. Current law permits a period of one year, which results in a major delay in the 404 program. We urge the committee to make other changes designed to speed up EPA's response to state program transfer requests. In addition, permits should be reviewed after a five-year period rather than automatically expire.

As stated earlier, we feel these changes and other steps taken by the committee should expedite the "dredge and fill" program contained in Section 404.

We also understand that consideration is being given to further limiting the granting of waivers from secondary treatment requirements for discharge into estuarine waters. While additional restrictions on the granting of waivers would result in additional construction jobs for contractors, NUCA supports the current practice of considering each waiver request individually. In so doing, each application is judged on its own merits, and funding for costly and unnecessary construction can be targeted elsewhere.

Lastly, a number of measures have recently been proposed to control non-point sources of water pollution. While we realize the increased concern is directed toward eliminating these potential sources of pollution, we suggest, as have other expert witnesses before us, that insufficient data currently exists as to the identity of non-point source pollution and the cost to correct it. We would suggest that until adequate research has been conducted in this area, Congress concentrate on earmarking what federal funds are currently available toward correcting problem areas that are identifiable and correctable: point sources of water pollution.

SUMMARY

Mr. Chairman and members of the committee, in closing we wish to reiterate our wholehearted support for the reauthorization of the construction grants program at increased funding levels

through fiscal 1988. In order to further increase the effectiveness of this vital program, however, we again urge you to amend the Act in order to permit states to use their grant allotments as loans for wastewater treatment projects. In addition, the continued eligibility of collection, rehabilitation and combined sewer overflow projects for federal funding is imperative to the success of the clean water effort.

This nation has made significant progress in its effort to clean our waters, yet the job is only partially complete. To those who may be critical of the costs involved and their impact on the federal budget, we offer this analysis: a reduction in the federal budget is dependent upon economic growth, and economic expansion is dependent upon a sound infrastructure. Inadequate sewage treatment is a major obstacle to economic development, and is a crucial element in the nation's economic recovery. As the utility contractors of this nation, we stand ready and able to contribute to the twin goals inherent in this EPA program: environmental quality and economic growth.

Thank you for your kind attention.

20-955 O—84——95

Mr. ROE. Please proceed.

TESTIMONY OF LEON ASADOORIAN, PRESIDENT, METHUEN CONSTRUCTION CO., METHUEN, MASS.; AND ROBERT BRIANT, EXECUTIVE DIRECTOR, UTILITY CONTRACTORS ASSOCIATION OF NEW JERSEY, EDISON, N.J.

Mr. ASADOORIAN. Thank you, Mr. Chairman.

Mr. Chairman and members of the subcommittee, our national association, the National Utility Contractors Association, is comprised of some 2,000 companies nationwide, consisting of contractors, suppliers, and manufacturers that specialize in water delivery and wastewater treatment construction projects. On behalf of all of our members, I want to thank you for the opportunity to present our testimony from the perspective of those who construct the pipelines and build those treatment plants necessary to achieve the goals set forth by Congress in the Federal Water Pollution Control Act.

Many public education campaigns, those conducted by NUCA and other groups, have been very successful in one important aspect: Many people are beginning to realize the decaying condition of our water delivery and waste water treatment systems, as well as those of our highways and bridges. The even more crucial problem, however, has not been adequately addressed: How does this Nation pay to repair and rehabilitate this network of public services?

We wish to take this opportunity to offer the utility construction industry's viewpoints on the program and to offer our recommendations on possible improvements to the act. We will confine our testimony to title II of the legislation that is being considered.

In light of the time limitations, I wish to submit for the public record a copy of our complete testimony and briefly summarize it for you. We will then be able to answer any questions or attempt to answer any questions that you may have.

Mr. Chairman, members of the utility construction industry strongly feel a partial but important answer to the question of how to alleviate the Nation's water pollution problem is provided in section 3 of Chairman Howard's proposal, H.R. 3282. In short, that provision reauthorizes the EPA construction grants program through fiscal year 1988.

Legislation adopted in 1981 through the tireless efforts of yourself and this subcommittee extended the sewage treatment construction program only through fiscal year 1985. The President has indicated his desire to then fund the program through block grants to the States.

In our opinion, this approach could deal a serious setback to this Nation's clean water effort. Under the block grant approach, State and local officials would have discretion in deciding which of a wide array of programs would receive funding. Unfortunately, funding for sewer pipelines and treatment plants is not politically popular. It has been our experience that unless funding is specifically earmarked, many local government officials are extremely hesitant to dedicate funding for sewage treatment projects. There-

fore we feel a continuation of the Federal program is essential to meet the goals of the Clean Water Act.

In addition to reauthorizing the construction grants program, another recommendation the utility construction industry feels is crucial to the future of the Nation's clean water efforts is the critical need for Congress to retain in its reauthorization legislation certain categories currently eligible for Federal funding that are scheduled for inclusion in a set-aside category in fiscal year 1985.

Specifically, we urge you to insure that sewer rehabilitation, combined sewer overflow correction and sewer collection systems remain as separate categories eligible for Federal funding. Under the 1981 amendments, these categories are scheduled for inclusion in each Governor's 20 percent set-aside fund beginning in fiscal year 1985.

In many regions of the Nation, the major problem in meeting local water pollution needs lies not in treatment plant construction, but in upgrading their sewage collection systems. I brought with me, as you noted, and I have some photographs of a section of collector pipe recently replaced in the Boston area for a project that we did. As you can see, corrosion and the accumulation of sediment over many decades of use have made this pipe ineffective and without the capacity that it was originally designed.

Section of cast iron pipes, installed in 1880 at Commonwealth and Arlington streets, Boston, Mass. Note significant reduction in internal diameter caused by age and internal corrosion.

Photo A.

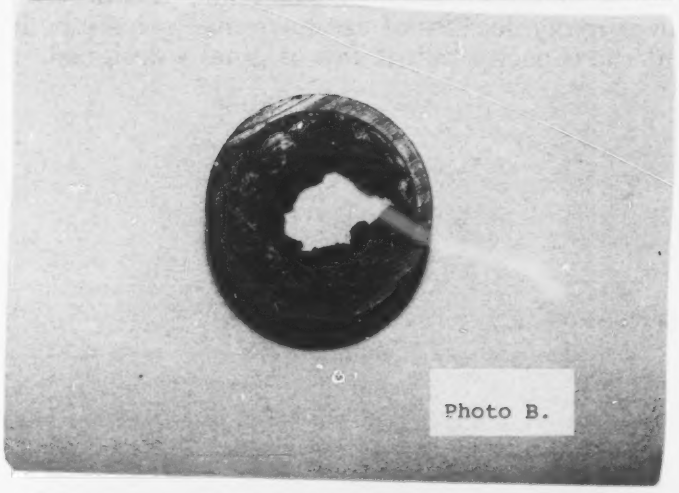


Photo B.

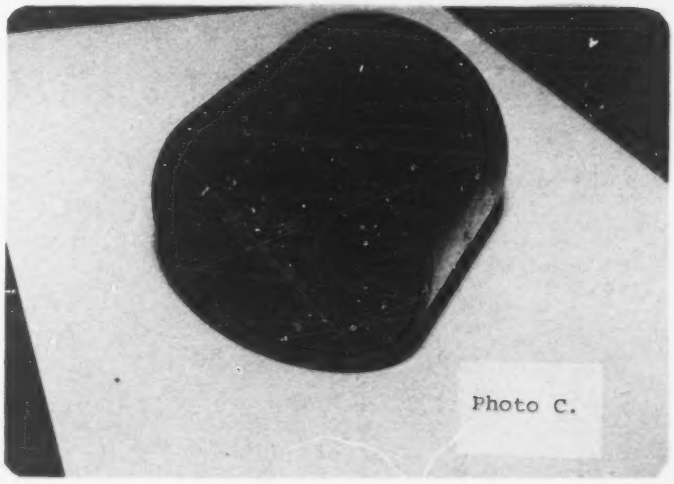


Photo C.

Mr. ASADOORIAN. Unfortunately, the condition of this pipe often represents the norm rather than the exception in many areas. Many of these pipelines have been in use for over a century. They are cracked, broken, and corroded beyond repair. EPA estimates that leakage into these pipes constitutes 25 percent of the total existing flow to the Nation's treatment plants. As a result, we contend that sound collector sewer systems would result in the need for lower capacity—and less costly—treatment plants.

Mr. Chairman, waste water treatment systems are just that: systems. The efficiency of a system is dependent upon each of its parts. Sound collector pipelines alone are inadequate if the treatment plant is obsolete and, conversely, a treatment plant—regardless of its degree of high technology—does little good if the pipelines carrying waste water to it are aged, leaking, and corroded.

Significantly, a National League of Cities survey finds that 50 percent of 1,400 participating city governments said their waste water collection systems need major repair. Smaller communities in particular, where collector pipeline construction constitutes nearly 80 percent of total project cost, would be particularly hard hit if collector funding is reduced.

In short, the utility construction industry feels collection systems in particular, as well as rehabilitation and combined sewer overflow correction, must remain as separate categories eligible for Federal funding. While they would remain eligible when lumped together under each Governor's discretionary fund, shifting them to a set-aside program would, in our opinion, send a signal to State and local officials that these categories are of less importance and, second, as a result, lead to reduced funding for them. Without adequate funding for collector systems and other pipe-related needs, this Nation's war on water pollution is being waged with a half-empty arsenal.

My colleague, Mr. Bob Briant, will now offer the remainder of our testimony.

Mr. BRIANT. Thank you, Leon.

Mr. Chairman and members of the subcommittee, in addition to reauthorizing the program and retaining certain separate categories, NUCA strongly supports increased yearly authorizations to fund it. I want to say at the outset that, yes, as utility contractors we hope our industry would benefit from this increased funding through the competitive bidding system. But it is evident that the current $2.4 billion yearly appropriation is simply inadequate to meet current or projected needs for clean water.

As a result of massive underinvestment in properly maintaining existing systems, and in projecting future needs, the EPA estimates $118 billion will be needed by the year 2000 to comply with Federal water quality requirements. While we are aware of the somewhat inflated projections contained in the EPA survey, other studies and statistics leave little doubt the financial requirements are immense.

Perhaps the most significant statistic is the survey indicating that nearly one-half of the Nation's communities are unable to add additional homes or businesses onto their sewage treatment systems because they are already operating at full capacity. In New Jersey, nearly 20 percent of our communities experience such bans.

Simply stated, these basic public facilities are essential to the future economic growth of our Nation.

Our industry feels the current $2.4 billion annual appropriation represents a "penny-wise and pound-foolish" approach to the construction grants program. A reduction in funding to the $2.4 billion figure did not reduce the overall cost of our clean water needs. If anything, construction delays resulting from decreased funding have added to the total cost of the program when you consider that construction costs in the United States rose 65 percent between 1976 and 1983.

We compare the $2.4 billion annual figure to running in place—we are barely keeping up with current funding needs without making a real dent in our overall needs.

And let there be no doubt that the utility construction industry has adequate capacity to more than handle the increased construction additional funding would entail. Unemployment within our industry presently hovers at the 30-percent mark. Hundreds of businesses have closed their doors as a result of declining waste water treatment construction. Engineering and manufacturing interests have also suffered severely. And communities have, in many cases, placed plans on the back burner.

After initial delays in obligating appropriated funding due to the regulatory changes required by the 1981 amendments, the EPA Office of Water, under the able administration of Henry Longest, is doing a good job in expediting the obligation of grants to municipalities. As of October 2 of this year, only $1.2 billion remained in fiscal 1983 appropriations. I think you will agree, Mr. Chairman, that this figure is substantially lower than corresponding unobligated moneys from previous years and is an indication that additional funding is needed for the program.

In addition to increased funding, however, we of NUCA feel the statute before you should be amended to permit States to use all or part of their share of EPA construction grants as loans. My own State of New Jersey has been in the forefront of this concept with its "Infrastructure Bank" proposal, which is now being considered by the State legislature.

In short, the New Jersey proposal would operate as follows: Capital funds (Federal, State, and private) would be deposited in special State loan accounts to be awarded as no- or low-interest loans to eligible communities for the construction or repair of roads, bridges, water, and waste water treatment systems. Loan repayments would represent a source of capital for additional loans for future construction.

State officials estimate many more sewage treatment projects could be built through this type of loan program than through a strictly grant program. Once a Federal EPA grant is used for a particular project, that money is obviously no longer available for other projects because the grant is not repaid.

The bottom line is this: Under the grant program, only a small handful of communities will receive funding while the remainder must finance projects on their own or, more likely, postpone construction in hopes of receiving a Federal grant at some distant future date.

One potential problem we see in the New Jersey plan is that while initial EPA grant money would be required to be loaned for waste water treatment projects, it fails to dedicate repaid sewage treatment loan moneys for that purpose. In short, we feel Congress should permit States to use their EPA grants in a loan program, but language should be included requiring that those sewage treatment loan repayments be dedicated for additional sewage treatment projects.

We stress that this proposal would in no way require States to use their EPA grants as loans. It would merely permit interested States to use all, part or none of their grant money as loans for waste water treatment construction projects.

There is no doubt this practice will result in increased user fees paid by businesses and households—not to the degree, however, some opponents to the plan claim.

Mr. Chairman, the people of this Nation have grown accustomed to paying artificially low user fees for sewage disposal services. Nationwide, a survey of 66 cities shows that the average family pays less than 50 cents per day for the collection and treatment of their waste water. These low rates are largely responsible for the decaying condition of many systems. Waste water collection, treatment, and disposal is a vital, yet costly service, and the American consumer must realize the true cost of that service.

Lastly, a number of proposals are being considered to control nonpoint sources of water pollution. We suggest, as have other witnesses before us, that insufficient data currently exists as to the technology and cost involved in correcting the nonpoint source problem. We feel that until further research has been conducted in this area, Congress should concentrate on earmarking its limited funds on correcting identifiable and correctable problems; namely, point sources of water pollution.

Mr. Chairman, in closing, we wish to reiterate our wholehearted support for the reauthorization of the construction grants program at increased funding levels through fiscal 1988. In order to further increase the effectiveness of this vital program, however, we again urge you to amend the act to permit States to use their grant allotments as loans for waste water treatment projects. In addition, the continued eligibility of collection, rehabilitation and combined sewer overflow projects for Federal funding is imperative to the success of the clean water effort.

This Nation has made significant progress in its effort to clean our waters, yet the job is only partially complete. To those who may be critical of the costs involved and their impact on the Federal budget, we offer this analysis: A reduction in the Federal budget is dependent upon economic growth, and economic expansion is dependent upon a sound infrastructure.

We thank you for giving us the opportunity to appear today and we will be happy to answer any questions you may have regarding our testimony.

Mr. ROE. We want to thank you very much for your splendid testimony. I do not have any questions. If I were writing the bill myself, we would have the matter resolved, and I am sure the committee would too, but we have other people that we have to deal with. So I do not have any particular questions at this point.

The gentleman from Arizona.

Mr. McNulty. Thank you, Mr. Chairman.

Mr. Asadoorian, pipelines have a thing, a dog or a cat or a pig, they call it, that run through lines, and clean them out as they go along. Can a similar device be used in a collector of that diameter?

Mr. Asadoorian. Yes, there are devices that are available. However, over a period of time the sedimentation becomes so solidified that it is not a practical solution.

Mr. McNulty. Thank you.

Mr. Roe. The gentleman from Oregon.

Mr. Smith. Thank you, Mr. Chairman.

I am wondering, under your loan grant discussion, whether or not you would advocate some sort of a local or State match in a loan program?

Mr. Briant. As a matter of fact, sir, we have such a match in our State of New Jersey. I suspect that a number of States around the country have a matching program.

Beginning with this year, New Jersey's match is a loan, so that the New Jersey funds that match the Federal EPA funds are in the form of a loan to a particular community. We feel that a combination of loans and grants really are going to serve the Nation's purpose in clean water.

Mr. Smith. What is your match?

Mr. Briant. Eight percent, sir.

Mr. Smith. Eight percent, and it is 92 percent, 8?

Mr. Briant. No, as a matter of fact, it is 8 percent of the eligible cost of the project. Just as EPA's funding, up until this year, has been 75 percent of the eligible cost of construction.

Mr. Smith. You see, one of the concerns that I have at this moment in the discussion is the grant program is a one time program. A loan program could be an elongated situation, establishing a sinking fund, or even more horribly to say, entitlement.

What do you say about that?

Mr. Briant. Well, I think the loan program, as we envision it in New Jersey, is one that is not a loan program to pay out. Depending on the ability of a community, they may choose a 15- or 20-year payout plan.

I think one of the ideal aspects of the loan program, though, is something that some people—not this committee, of course, fail to realize, and that is that the repayment of the loans puts the moneys back into the system again, which then can be utilized by future communities to resolve their clean water problems.

But in this day and age of capital construction, I do not believe a 15- or 20-year payout period is really an elongated period.

Mr. Smith. Thank you.

Mr. Roe. Are there any further questions?

Well, just one thing on that loan program, quickly.

You know, being from New Jersey, we are familiar with that issue, as is Mr. Howard and others, and I think the gentleman from Oregon brings up a very good point.

Would it be reasonable to assume that the State of New Jersey has elected, under the provisions of the last amendments, to reduce the Federal matching grant, to 55 percent, which has created its own problems in many communities, as I am sure you are aware.

What would be so—or should we be considering some kind of a loan program that will make it dollar for dollar, for what was used in the loan program?

Suppose, for the sake of discussion, you know, 8 percent is not very much, in comparison to 55 percent, and that is not really an incentive at this juncture for the committee to make that kind of a broad-based determination. But I am wondering along the line, following the thought processes developed by the gentleman from Oregon, what suppose, for example, we were to allow some flexibility, but made it dollar for dollar match coming back to the States.

Suppose, for example, instead of the 55, we came back and said, well, New Jersey, if you want to spread it out to lesser than the 55 percent, but in any case, it should not be lesser than 55 percent in the aggregate, with the State putting up half of those costs.

Mr. BRIANT. Mr. Chairman, I believe that a combination of grants and loans, in whatever percentages, would be right for a particular community, would be the best direction to go, and why I say that is that there are some communities in some States that may have greater wherewithal to produce the local share than would others.

So I think really the system that should be designed is one that is flexible enough that would combine grant money and loan money in such a way to make the project financially feasible for that particular community, which might be a little bit different than another community 20 miles away.

Mr. ROE. If the gentleman would yield, however.

We had the gentleman from Mount Holly testify, and we are well aware of that case, because we had a similar situation existing in Paterson, where most of the dyeing and finishing industries have to literally go out of business because they cannot pay $100,000 in sewer costs.

So we say that the impact, whether it be a loan or grant, is not devastating to many industries, it is. In other words, what we are saying to Mount Holly is that if we do not do something to correct, or at least alleviate that situation, they are faced with, they will have to go out of business. They will lose 60 jobs. What did we achieve?

Mr. BRIANT. There is no doubt about that. I believe that the problem in that particular case, although I did not pay close attention to the testimony, was one that dealt with the industrial cost recovery system of figuring cost for industrial users.

Mr. ROE. Oh, I understand that. That is a problem in the Federal law. But I am saying it is still a manifestation of what we are talking about.

The idea that the average citizen can pay x number of dollars, or y number of dollars, which is a variable, as you know, from known experience in every single project we build, is not necessarily an accurate statement.

For example, when you have got a situation in that Ocean County system in New Jersey, where those rates have risen to $600 or $700, and people in that area are mostly on retirement with $7,000 to $8,000 a year in income, and they are going to pay 10 percent, or 12 or 14 percent of their costs for a surcharge, they are not going to be able to maintain their homes.

So, I think when we speak to what those charges should be, and that is where the dilemma lies. You know, it was all well and good for New Jersey to drop those grants, what would you say, level of grants, from 65 percent to 55 percent, because they thought they would have a wider distribution. But they then had to go back to those communities, they had already gone into their local bonding, and had provided the 25 percent, and had to go back and fund all over again, as to what the local cost would be, and that bothers us extremely, as far as this committee is concerned.

Mr. BRIANT. Yes; that is a real concern, that is why I think we really have to combine the grant money with the loan concept, and we cannot do away with that grant money, and of course, the level of the grant is something that the individual States have to deal with.

Mr. ROE. Let me handle it further.

Should we come back and say, well, OK, in view of the fact that we think the local States, or some people ought to be applying more, should we come back and mandate it that the Governor of a State elects to, at 55 percent, which they have the prerogative to do? As you know, under the existing amendments, made last time, the State has to put up 25 percent to be eligible.

Mr. BRIANT. I think there is no doubt that the States' share should be one that is more reasonable a level. I am not happy myself with an 8-percent State share, although I do understand that some States do not have any State matching levels.

Mr. ROE. Well, I agree with you. But I am saying suppose we thought about that, and get back and say well, we are going to put up 50 percent money here, 55 percent money, the States ought to be putting up 25 percent.

Mr. BRIANT. I think that is a valid observation, Mr. Chairman.

Mr. ROE. That would be an interesting amendment, would it not?

Are there any further—the gentleman from Wisconsin.

Mr. MOODY. Thank you, Mr. Chairman.

I think we have a minute or two before we have to go vote.

I want to thank you for your excellent testimony, both of you. You have written a very good paper here.

I do have a question about the—two things.

You suggest that we retain the separate categorization for sewer rehab, CSO and sewer collection, rather than permitting those to be a single source of funds, and yet the argument that you advance is that investment in one is only a substitute for investment in another, as you point out, with your pipe, you can save money downstream by doing something upstream, or vice versa.

Or, if you have a better collection system, with less infiltration inflow, you may need less capacity in your sewer treatment. All of these are, as you point out, one system.

Well, if that is true, then we really, as a Federal Government, may not be in the best position to decide how the money should be earmarked within a given system, that should be something that local authorities probably have a better handle on, and by breaking the categories into smaller and smaller compartments, we are forcing the funding into an area that may not be the most optimum.

If you give the local agencies more discretion to move the money, they may get more bang for the buck, because they are not con-

strained to put it in this collection, where they maybe should be putting it into plants.

So I agree with your arguments, but they seem to lead to the—I would think they lead to the opposite conclusion.

Could you comment on that?

Mr. ASADOORIAN. Two issues, Congressman.

One is that each State, as you know, has been delegated the responsibility to set the priority lists, based on its individual environmental concerns, and based on our experience in region 1, we find that the priority lists that have been established by the various States have clearly spoken to the most cost-effective environmental methods of correcting its sewage treatment problems.

What we are asking for, and suggesting, is that these categories remain eligible, not mandated with any specific amount of money necessary to be spent within those various States. So that the States and the local regions have the option available to expend the money in the most cost-effective means.

Mr. MOODY. OK. I think maybe we do not disagree at all.

You have no problem with local decisionmaking, allocating the money as between those three places, do you?

Mr. ASADOORIAN. That is right.

Mr. MOODY. But why then do we want to retain them as separate categories, funding categories, since we want to have the money fluid between categories? Why not just call it an overall category? Why do you want separate? Why do you want to fund them separately by category?

Mr. BRIANT. Actually, what we are really saying is not separate categories, but remain as eligible categories under the Federal program.

You may recall that in 1981, when the amendments were passed, EPA was trying to mandate that no money would be available for collector sewers.

Where we find in many parts of the country collector sewers are a vital part of the sewage treatment system. Because the committee and the Congress saw to the needs, they kept collector sewers as an eligible category, through 1985, with 20 percent of all moneys from that point onward being used at the discretion of a State Governor.

What Mr. Asadoorian is pointing out, is that the local governmental agencies, the States, based upon their State priority lists, and the water quality needs, know best how to apply that Federal grant money, whether it be collectors, interceptors, or treatment plants.

Mr. ROE. If the gentleman would yield?

Mr. MOODY. Surely.

Mr. ROE. I wish they did, but there is not one single one in the State of New Jersey on the priority list, because the premise initially, and you are very adroit in your testimony, that we are speaking of sewage disposal systems, and they are variable in every region of the country.

In Boston, particularly, in Paterson and New Brunswick, they have combined wooden sewers. Now, if you are going to solve the pollution problem in the receding streams, you have to eliminate

those combined sewers, and they have to be done on an eligible basis, like anything else.

I had a meeting in New Brunswick, where the Johnson & Johnson Co. is spending $150 million, to rebuild that city, and they are under all kinds of mandates and orders from EPA. They have to correct the combined sewer, because they are polluting the river. Every time it rains it washes back into the system, and the truth of the matter is that the battle was fought with the Senate, and there was a temporary decision, as far as I am concerned, because the goal there was to eliminate all of those eligible categories completely. And you take in, responding in your city of Boston, to really do the job that ought to be done, then the flexibility ought to be there, but it ought to be mandated as part of the system that has to be dealt with. Not allow the State to say well, we can quote unquote get more bang for the buck by building a plant, and the plant for 500,000 gallons a day, and they have 1½ million going into it every time it rains.

So, no matter how beautiful the plant is built, or how big the plant is, it does not make a damn bit of difference at that point. It is a total waste of the public's money, if you will pardon my enthusiasm, but we have been through this drill since 1972.

So you are right, and they are right, but it should not be even categorized, it ought to be a decision that ought to be allowed by States, but it ought to be mandated, if they have to clean that up as part of their process, and I think that is a reasonable approach.

Now, we are on the second call.

Mr. MOODY. I just was hung up on the word separate in that sentence. I mean, you really just mean eligible categories?

Mr. ASADOORIAN. That is right; yes.

Mr. ROE. Now, let me suggest the following. We only have three witnesses left, and we have a few more questions, so if you could, let us recess for 10 minutes, and go and vote, and we will return immediately to complete our work, so we do not have to keep people over.

The committee will recess for 10 minutes.

[Short recess.]

Mr. ROE. The committee will reconvene.

We were finishing up our discussions with Mr. Asadoorian and Mr. Briant from New Jersey. I do not really have any further questions.

Are there any further questions here?

Mr. SMITH. No.

Mr. ROE. Thank you for being with us. We appreciate your testimony, and you have our fullest attention, of course.

Our next witness is Mr. Lawrence A. Salomone of Poolesville, Md.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF LAWRENCE A. SALOMONE, POOLESVILLE AREA CITIZENS

Mr. Chairman and Members of the Committee:

In 1979,the EPA Administrator stated, "for every Federal dollar that is already cleaning up our water, another $11 have been in construction of plants that have yet to process a single kilogram of wastewater"[1].

Many towns that have received funds from the Federal Construction Grants Program now have defective sewerage treatment systems and long-range financial burdens. EPA's own data indicate that as many as 50% of the Nation's wastewater treatment facilities fail to operate properly, due to such factors as improper system design and installation, poor operator training, and inability in some cases to attract qualified personnel [1]. A major issue of growing concern to me as well as to some of your colleagues is the financial impact of the grants program on State and local governments [1]. A number of them have begun to conclude that the costs of operating and maintaining these new facilities may represent 65-70% of total costs, placing a harsh and often unanticipated burden on local citizens [1]. Another area of concern examined is user fees, with which municipalities

are supposed to support the operation and maintenance of the plant as well as future equipment replacement. Based on GAO surveys of municipalities in 10 States, it was reported that most municipalities are not charging adequate user fees to cover both current and future costs.[1]

Moreover, the EPA and the States should make the right selection of stream uses, that these are realistic and attainable uses, particularly when low stream flows (intermittent streams) and background pollutants (such as caused by non-point sources) would make achievement of fishable/swimmable quality impossible. These nonpoint sources of water pollution are estimated to be 50% or more of total pollutant loads of our nation's lakes and streams [1].

It should be clear that the Construction Grants Program is not working well [1]. Perhaps, now is the time for reconditioning and fine-tuning so that the available funds can be used more effectively to protect the environment. For this purpose, I would like to provide you with information regarding the need, approach, and costs for a proposed sewerage treatment plant in Poolesville, MD where I have lived for 4 years. This information represents the results of a two (2) year investigation performed by several residents of the Town and me and it will serve to illustrate why the Construction Grants Program should be fine-tuned.

The town of Poolesville (population 3500) in upper Montgomery County, is seeking a new federally funded $2 million tertiary treatment plant that would allow the Town to double in size [2]. Approximately one half of the capacity of the proposed plant is to serve non-existent citizens that, of course, have no effect on water quality.

The majority of its citizens (85%) is challenging the Town Board of Commissioners on the wisdom of building the plant, calling it too big, too costly, too sophisticated and unnecessary [3]. Seven (7) years of water quality data show that the environmental need for the plant is non-existent or very minor. The basis for Poolesville residents opposing the EPA Construction Grant include the following:

1. The environmental need for the proposed wastewater treatment plant is non-existent or very minor [4]. The EPA is providing $2 million to maintain the water quality of an intermittent creek as fishable/swimmable. Dry Seneca Creek as the name implies is dry during periods of drought. During non-drought periods 7 years of water quality data show that its water quality is above existing water standards [5].

2. Present and future costs seem to have been grossly underestimated [6 and 7]. The Town Auditor stated in a public hearing on May 16, 1983 that present water and sewer costs are $5.60 per thousand gallons. Yet, the

town's engineer and the Commissioners of Poolesville have documented $3.83 per thousand gallons as the present water and sewer costs in the affordability analysis provided to EPA Region 3 and the State of Maryland. Regarding future costs, the Poolesville Town Board made no public statement of the financial impact of the proposed project until the release of their May 13, 1983 newsletter. Approximately two years after the August 10, 1981 public hearing required by law for this project, the Poolesville Town Board stated in this newsletter that the proposed plant would result in a $0.25 per thousand gallon-increase to the current water and sewer rate (i.e., $20 to $30 per year to the total water and sewer bill for the average household). The Poolesville Town Board restated this increase of $0.25 per thousand gallons in a public hearing on May 16, 1983. Can it be possible that the proposed tertiary treatment plant to serve twice the present population of Poolesville can be built, operated and maintained for $0.25 per thousand gallons?

3. A large imbalance exists between the high costs of the proposed plant and the minor environmental benefit;

4. The proposed treatment plant is planned for construction before the major inflow and infiltration problem of the collection system is solved (i.e., 1 million gallons per

day during storms--three times the normal flows to the existing treatment plant);

5. With the environmental need for the proposed plant being non-existent or very minor, the Poolesville Construction Grant will be providing funds essentially for development and expansion purposes which is contrary to existing regulations;

6. The shortage of available potable water to meet the needs of the current residents suggests that our health and safety will be jeopardized further by construction of the proposed wastewater treatment plant with its demand for twice as much water as is currently available [8] and

7. The selection of an activated sludge treatment process is too sophisticated and too costly to operate and maintain for a small town like Poolesville, MD. Furthermore, existing regulations require the use of the present system, if possible, to meet the required effluent discharge limitations. Improvements to the existing lagoon to satisfy the required effluent discharge limitations were recommended by the previous engineering consultant to the Town of Poolesville--a recommendation ignored by the Town.

20-955 O—84——96

Despite these legal, technical, and economic reasons, and the fact that less than 10% of the projects funded actually are complete and contributing to water quality improvement [1], EPA Region 3 and the State of Maryland is ready to add Poolesville Maryland to the list of towns with a wastewater treatment system that is more than the locality needs or can pay for [9a and 9b]. Poolesville may well join the list of communities which include e.g., Manassas and Manassas Park, Va., Toms Brook , Va., and Thayne Wyoming.

The Poolesville situation is symptomatic of a much deeper problem with the way the Construction Grants Program is being administered. The transcript of the public hearing on Poolesville's proposed wastewater treatment plant shows that the concerns of all residents and an official of the State of Maryland were not adequately addressed or their questions completely answered. Yet, there was no requirement nor mechanism to ensure that questions (such as cost and inflow/infiltration reduction) raised during the public hearing were properly answered. This is a weakness in the hearing process that should be corrected.

Ignoring the 7 years of water quality data for Dry Seneca Creek, the engineers proposed, the Town Board accepted, and EPA Region 3 and the State of Maryland supported an inappropriate technology for the Poolesville situation. The costs and benefits of using the proposed technology are significantly out of balance. Water quality data should be used and good water quality

monitoring programs should be established to keep decision makers from making costly decisions, based on the lack of information or on misinformation. The Clean Water Act should be amended to provide that compliance orders shall include cost-benefit analyses.

Future costs of federally funded wastewater treatment plants are frequently underestimated. In the case of Poolesville, even present costs were grossly underestimated [6 and 7]. The user charge system required by the Clean Water Act should reflect all the components that will be necessary to maintain the financial integrity and self-sufficiency of the system. In the case of Poolesville, EPA Region 3 suggested to the Town's engineering consultant that the cost of expanding the local potable water system to meet the needs of the proposed plant be considered [10]. These costs were not included in the application [9b]. The Clean Water Act should be amended to ensure that all relevant costs are included in the user charge system to ensure that the affordability analysis is performed using representative cost figures.

The federal government under the Clean Water Act should not continue to offer large sums of money to a small community and expect that the local community board members are knowledgeable in the proper disbursement of these funds. Some of the post mortems done on towns with defective treatment systems and long-term financial burdens show that towns cannot always rely on the advice of their engineering consultants and the EPA [11 and 12].

Treatment plants have been overdesigned, and the treatment process selected have not been compatible with the ability of the community to operate and maintain the system [11 and 12]. The Clean Water Act should be admended to enhance accountability.

This concludes my statement. I will be pleased to provide additional information as requested.

List of References

1. Copeland, Claudia, "Clean Water: EPA Municipal Construction Grants Program," Issue Brief Number IB80049, The Library of Congress, Congressional Research Service, Major Issues System, provided in letter from Representative Beverly B. Byron to Lawrence A. Salomone dated May 26, 1983.

2. Salomone, Lawrence A., "Poolesville Sewerage Facilities Plan, C-240479-01, Comments and Questions Regarding Proposed Poolesville Sewerage Facilities, June 30, 1982.

3. Letter from Lawrence A. Salomone and Robert A. Watson to Acting EPA Inspector General Charles Dempsey dated May 15, 1983.

4. Letter from Donald H. Noren, Director of Maryland Department of Health and Mental Hygiene, Environmental Health Administration to Eugene E. Halmos, Jr., President, Commissioners of Poolesville dated May 21, 1975.

5. Summary of Seven Years of Water Quality Data for Dry Seneca Creek Provided by Montgomery County Division of Pollution Control, Private Communication, 1982. (Detailed breakdown available upon request)

6. Letter from Lawrence A. Salomone to Acting EPA Inspector General Charles Dempsey dated March 20, 1983.

7. Letter from Lawrence A. Salomone and Robert A. Watson to Acting EPA Inspector General Charles Dempsey dated May 21, 1983.

8. Letter from Donald H. Noren, Director of Maryland Department of Health and Mental Hygiene, Environmental Health Administration to Samuel Zattiero, President, Commissioners of Poolesville dated August 15, 1977. (Additional documentation available upon request)

9a. Letter from Lawrence A. Salomone and Robert A. Watson to William M. Bulman, Chief, EPA Region 3 dated Febrary 27, 1983.

9b. Letter from William M. Bulman, Chief, EPA Region 3 to Lawrence A. Salomone dated March 15, 1983.

10. Letter from William M. Bulman, Chief, EPA Region 3 to Kamber Engineering Company dated October 25, 1982.

11. Letter from Richard J. Church to Lawrence A. Salomone dated October 21, 1982.

12. U.S. General Accounting Office, "Wyoming Wastewater Treatment Facility Proves Unsuccessful," GAO Report CED-81-94, June 15, 1981.

APPENDIX - REFERENCES

STATEMENT OF

LAWRENCE A. SALOMONE

POOLESVILLE AREA CITIZENS

BEFORE THE

SUBCOMMITTEE ON WATER RESOURCES

HOUSE OF REPRESENTATIVES

JULY 20, 1983

Table of Contents

1. Copeland, Claudia, "Clean Water: EPA Municipal Construction Grants Program," Issue Brief Number IB80049, The Library of Congress, Congressional Research Service, Major Issues System, provided in letter from Representative Beverly B. Byron to Lawrence A. Salomone dated May 26, 1983.

2. Salomone, Lawrence A., "Poolesville Sewerage Facilities Plan, C-240479-01, Comments and Questions Regarding Proposed Poolesville Sewerage Facilities, June 30, 1982.

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12. U.S. General Accounting Office, "Wyoming Wastewater Treatment Facility Proves Unsuccessful," GAO Report CED-81-94, June 15, 1981.

REFERENCE 1

BEVERLY B. BYRON
6TH DISTRICT, MARYLAND

COMMITTEES:
ARMED SERVICES
PROCUREMENT AND MILITARY NUCLEAR SYSTEMS
MILITARY PERSONNEL AND COMPENSATION
INTERIOR AND INSULAR AFFAIRS
PUBLIC LANDS AND NATIONAL PARKS
MINES AND MINING
OVERSIGHT AND INVESTIGATIONS
SELECT COMMITTEE ON AGING
HOUSING AND CONSUMER INTERESTS

Congress of the United States
House of Representatives
Washington, D.C. 20515

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FREDERICK
10 EAST CHURCH STREET
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HAGERSTOWN
66 WEST ANTIETAM STREET
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COLUMBIA
SUITE 235
WILDE LAKE VILLAGE GREEN
(301) 997-8131

CUMBERLAND
P.O. BOX 3275
(301) 722-0300

WESTMINSTER
85 EAST MAIN STREET
(301) 848-5300

May 26, 1983

Lawrence A. Salomone, P.E.
19108 Hempstone Avenue
Poolsville, Maryland 20837

Dear Mr. Salomone:

This is in response to your letter of May 13, as well as conversations you have had recently with members of my staff regarding the proposed Poolsville Wastewater Treatment Plant. I can certainly understand your frustration in this matter, for it is obvious that you have spent a good deal of effort to research this situation, and it is also obvious that you are particularly well-qualified to comment on this issue.

You have asked my office to assist you by putting you in touch with those who are reviewing the Clean Water Act. On your behalf, I have therefore written to Representative Robert A. Roe, Chairman, Subcommittee on Water Resources, of the Public Works and Transportation Committee. I am informed that this subcommittee will be considering amendments to the Clean Water Act, and I have asked that his staff review some of your documents and put your name on the list of interested parties to this legislation.

Your dissatisfaction with the current grants program is shared by many, including some of my colleagues in the House, who have begun to question whether the program needs to be funded at such a high level year after year. There are also those who share your concern that in some localities the standards may be unnecessarily high and result in systems that are simply more than a locality needs or can pay for. On both sides of the issue there are those who argue that the program is overly complex. I have enclosed some Issue Briefs from the Library of Congress that I know will be of interest to you, and you can be sure that I shall be back in touch with you when I have heard from Congressman Roe.

With best regards,

Sincerely,

Beverly B. Byron

Beverly B. Byron, M.C.

CLEAN WATER: EPA MUNICIPAL CONSTRUCTION GRANTS PROGRAM

ISSUE BRIEF NUMBER IB80049

AUTHOR:

Claudia Copeland

Environment and Natural Resources Policy Division

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CONGRESSIONAL RESEARCH SERVICE

MAJOR ISSUES SYSTEM

DATE ORIGINATED 04/10/80
DATE UPDATED 11/08/82

ISSUES AND POLICY QUESTIONS

Interest in the construction grants program and concern for its future raise three key questions: Are the water cleanup goals of the Act being achieved through expenditures under this program? What effect will shrinking appropriations, increasing need for funds, and inflation have on those goals? How should the sizable investments be weighed against competing national priorities?

The 1972 legislation perhaps underestimated the magnitude of the water cleanup task mandated for municipalities and industries, in turn leading to underestimation of the time and resources necessary to achieve the ambitious goals of the Act. Despite the $30 billion obligated and $20 billion expended, the Nation is still a long way from reaching the objective in the Clean Water Act of restoring and maintaining "the chemical, physical, and biological integrity of the Nation's waters." Although there have been some notable local improvements -- largely due to combined industrial and municipal source cleanup -- the municipal sewage treatment program has not yet accomplished much nationwide. Less than 10% of the projects funded actually are complete and contributing to water quality improvement. In terms of the municipal sources which this program addresses, EPA Administrator Costle stated in late 1979, "For every Federal dollar that is already at work cleaning up our water, another $11 have been invested in the construction of plants that have yet to process a single kilogram of wastewater."

While $56 billion is EPA's most recent estimated "need" for constructing secondary and higher-than-secondary treatment facilities, that is not the full picture. Other categories of "need" for meeting all of the Act's requirements raise the total to an estimated $233 billion and include elements such as rehabilitation of old sewer lines, treatment of combined sewer overflows, and control of separate stormwater flows. (The category of separate stormwater sewers -- although it continues to be included in EPA's needs assessment -- has not been eligible for Federal funding under the Act since 1977.) Past eliminates of nationwide needs have been as high as $500 billion. Public spending of the magnitude potentially required for municipal needs represents substantial demand on the Federal budget, at a time of severe overall pressure on the budget.

President Carter had been on record as being committed to spending $45 billion for wastewater treatment projects over the 10 years from 1978 to 1987. Over the remainder of this period, appropriations would have to average $4.7 billion annually in order to meet that commitment. However, during recent consideration of 1981 amendments to the Act, P.L. 97-117, Reagan Administration spokesmen talked about limiting Federal assistance to $2.4 billion annually for the next 10 years and ending Federal involvement thereafter.

However, inflation rates in the construction industry are averaging 12% and for some time have been nearly that high in the economy as a whole, as measured by other economic indicators. Inflationary pressures result in a given number of dollars buying less and less pollution abatement. EPA has said that the added effects of inflation recently have consumed the entire annual appropriation, leaving virtually no residual funds to reduce needs on

a net basis. At current rates of appropriations and inflation, municip treatment needs to comply with the statute never will be fully met, accordin to EPA. Even with zero inflation and no changes in rules or performance requirements, some states estimate that at current authorized funding levels, it would take 20 years to complete the mandated cleanup process.

Closely related to concerns about funding new construction is the fact that EPA's own data indicate that as many as 50% of the Nation's wastewater treatment facilities fail to operate properly, due to factors such as improper system design and installation, poor operator training, and inability in some cases to attract qualified personnel. There is no effective inspection system, either Federal or State, reviewing the construction or operation of these systems. The GAO recently reported that 87% of the plants investigated in a random sample in 10 States were violating their discharge permits. In GAO's view, 31% were in serious violation. These problems have led some persons to question the value of investments already made in operating units. Another area of concern examined by GAO is user fees, with which municipalities are supposed to support ongoing operation and maintenance, as well as future equipment replacement. Based on surveys of municipalities in 10 States, GAO reported that most municipalities are not charging adequate user fees to cover both current and future costs. The result, according to GAO, is that some users are receiving a subsidy, while the systems are unable to maintain financial integrity and self-sufficiency.

Moreover, Federal expenditures under the construction grants program do not reduce the degrading impact of urban and rural stormwater runoff. These and other so-called nonpoint sources of water pollution are estimated to be 50% or more of total pollutant loads of lakes and streams. Estimates of the cost of abating nonpoint pollution are rough; for urban runoff alone, estimates range from $70 billion to $500 billion. The Clean Water Act provides for local, State, or regional planning and implementation of measures to control nonpoint sources. The Act does not authorize direct expenditures to abate those types of problems, however, as it does for municipal point source wastes. Thus, it is unlikely that all of the goals of the Act can be achieved solely by present pollution control requirements affecting industries and municipalities and at the present level of Federal funding.

The municipal construction grants program represents by far the largest Federal expenditure under this Act and, in fact, totals 74% of EPA's budget ($3.3 billion out of $4.75 billion in FY81 under P.L. 96-526). Yet it is clear that the program is not working well: Federal and State program management have been widely criticized, while inflation consumes a larger portion of the annual appropriation, and estimated municipal needs are not decreasing. The water quality goals of the Act are far from being achieved, and some persons are concerned that the failures of the municipal program may wipe out other achievements of the entire clean water effort. Anticipating reauthorization of the Clean Water Act, early in 1980 EPA began a policy assessment called the 1990 Strategy, intended to recommend legislative and administrative options for improving the grants program, achieving cost-effective water cleanup, and maximizing progress towards the Act's goals. In view of current fiscal pressures on this and other programs supported by government, Congress may choose to reexamine the municipal grants program and ask what should be done. In doing so, it might consider various options, including continuing the program as is, seeking new technological solutions to wastewater problems, stretching out the program's deadlines in order to improve technical understanding of the causes and

One issue of growing concern is the financial impact of the grants program on State and local governments. The 75% Federal funding available since 1972 has been a substantial inducement to many communities. A number of them have begun to conclude, however, that the costs of operating and maintaining (O&M) new facilities may represent 65-70% of total costs, placing a harsh and often unanticipated burden on local citizens. This is a particular problem with the sophisticated AWT systems designed to meet more stringent water quality requirements.

There have been proposals to provide Federal funds for O&M costs. EPA has taken the position that under the Act O&M costs are the community's responsibility and ordinarily are not a burden, compared with other municipal costs. Nevertheless, former Administrator Costle testified that EPA recognizes that these costs are increasing and in some cases the costs are quite high. Despite the concern that some communities may need aid, it is feared that making Federal funds available for O&M expenses would become a perpetual drain on the Federal budget. In view of current economic conditions and Federal budget-cutting efforts, that prospect pleases few persons.

Sewage treatment systems may also impose direct expenses on local citizens through the fees for hooking up a residence to new sewer lines. Such fees or charges can amount to hundreds of dollars. At present, Federal funding cannot be used to pay for these interconnection fees.

LEGISLATION IN THE 96TH CONGRESS

1. Repeal of industrial cost recovery. In October 1980 Congress enacted legislation that repealed the industrial cost recovery (ICR) provision of the Act (P.L. 96-483). The 1972 FWPCA included the ICR provision to assure that industries discharging effluents into municipal treatment plants repaid their proportionate share of the Federal construction cost of treating industrial wastes. However, industrial users and some municipalities criticized the ICR program as being unduly burdensome. As a result, the 1977 Amendments modified the ICR provision, called for a study of the program, and imposed an 18-month moratorium on collecting ICR charges. In December 1979 Congress agreed to legislation to extend the moratorium until June 30, 1980 (P.L. 96-148). Subsequently, however, Congress passed the legislation entirely repealing the ICR provison. P.L. 96-483 also terminated Federal grant assistance for treatment of industrial discharges after Nov. 15, 1981, and required an EPA study of the effect of this action This particular restriction, which was an amendment by Senator Stafford, has been termed the Industrial Cost Exclusion (ICE) provision. The EPA report was submitted to Congress March 15.

P.L. 96-483 reauthorized through FY82 several sections of the Act that expired in FY80, including grants to States to administer water pollution programs and to conduct areawide waste management planning. This law also authorized $20 million in construction grant monies to clean up PCB pollution in the Hudson River. Finally, P.L. 96-483 extended the allotment period for FY79 grant funds for an additional year.

2. Deferral of FY80 funds. In an effort to balance the overall Federal deal budget, in April 1980 the Carter Administration proposed a budget

WATER QUALITY:- IMPLEMENTING THE CLEAN WATER ACT

ISSUE BRIEF NUMBER IB79091

AUTHOR:

Claudia Copeland

Environment and Natural Resources Policy Division

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CONGRESSIONAL RESEARCH SERVICE

MAJOR ISSUES SYSTEM

DATE ORIGINATED 08/21/79
DATE UPDATED 11/29/82

For the last three years Congress has voted not to fund the program at the level requested by the Administration. In the FY81 appropriations measure (P.L. 96-526), Congress appropriated $3.3 billion for construction grants; this was $400 million less than the requested amount. As of February 1981 the program had an unobligated balance of $5.3 billion -- that is, monies appropriated but not yet committed to be spent for specific projects. Yet by July 1981 the unobligated balance had been reduced to $2 billion, as a result of actual obligations and particularly as a result of congressional rescission of $1.7 billion in unspent monies in P.L. 97-12.

Early in 1981 the Reagan Administration examined the grants program and offered legislative proposals intended to reduce the Federal Government's long-term commitment to building municipal sewage treatment plants, as well as to focus the program on solving the Nation's most serious existing water quality problems. These and other proposals for revising the grants program are discussed below.

Recent legislative concern has focused on particular aspects of the program. One concern centered on the allotment process, which gives States 24 months to obligate construction money before reallotment of unspent funds occurs automatically. It has been argued that some States, facing that deadline pressure, probably would choose to fund low-priority projects to avoid losing their allotment, a situation that would undercut the goals of the Clean Water Act, according to EPA. There is little evidence to substantiate this concern firmly, however. By the end of FY79 all States except Ohio were able to obligate their remaining funds; Ohio lost $39 million through reallotment at that time.

Industries and municipalities frequently have argued that the costs of achieving more stringent levels of water pollution control, particularly the requirements for using BAT, greatly exceed the water quality benefits that will be derived. Similar questions also have arisen about the costs associated with the municipal construction grant program. EPA's most recent survey of the nationwide cost of compliance with the Act identified $120 billion in funding "needs" to construct municipal treatment works in the U.S. Because of the Federal funds going into those grants, some persons question whether it is cost-effective to invest in sewage treatment facilities capable of achieving treatment performance more stringent than secondary levels, or what is termed advanced wastewater treatment (AWT). It is argued that in many cases costly AWT plants are being built while small incremental water quality benefits are realized, particularly in view of the larger nonpoint source pollution problems which remain. The General Accounting Office has issued reports criticizing AWT requirements and urging greater flexibility in the law in order to match treatment and water quality needs.

Partly in response to congressional criticism, EPA now is performing a two-level review for project applications in connection with the Act's 1983 municipal requirements: Those involving AWT, using high technology and highly capital and energy-intensive processes, or those based on advanced secondary treatment (AST), falling between secondary and AWT and thus having smaller incremental costs than AWT. This represents an effort to identify projects where protection of water quality truly justifies building more costly plants. EPA's 1980 survey of wastewater treatment facility needs estimated that 12% of projects will require AST, while 3% will require full AWT to be in compliance with the Act. By the end of FY79, EPA headquarters had completed review of 38 advanced treatment projects and estimated that $35 million in construction costs had been saved as a result. EPA regional offices had reviewed 169 additional projects where construction cost savings

CLEAN WATER ACT: CURRENT ISSUES AND ADMINISTRATION PROPOSALS

MINI BRIEF NUMBER MB82205

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THE LIBRARY OF CONGRESS

CONGRESSIONAL RESEARCH SERVICE

MAJOR ISSUES SYSTEM

DATE ORIGINATED 02/11/82
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2. Technological requirements/BAT. The Clean Water Act established two specific pollution cleanup deadlines for industry and municipalities. It required industry to achieve so-called Best Practicable Treatment Technology (BPT) by mid-1977 and more stringent Best Available Technology (BAT) by mid-1984. As a result of a 1976 consent decree and 1977 amendments to the law, a key focus of the BAT standards will be limiting toxic waste discharges. Because EPA has not yet issued the specific BAT discharge limits -- making it very difficult for industries to install necessary treatment technology by mid-1984 -- a number of them already have proposed extending that deadline until 1987 or 1988.

A more difficult issue related to BAT requirements is whether the more stringent control technology is needed uniformly throughout the Nation or whether some modification would be desirable. It is pointed out, for example, that studies performed by EPA, industry, and municipalities have determined that BPT technology does a better job than had been anticipated in removing many toxic materials. Thus, in some cases, BPT alone may achieve levels of treatment adequate to meet applicable water quality standards. Studies do indicate, however, that BPT alone is less successful in removing certain toxics, including such heavy metals as cadmium. Critics of the current uniform BAT approach contend that it amounts to "treatment for treatment's sake," particularly in view of the cost of achieving more stringent discharge limits, and that it should only be applied where it is necessary for water quality purposes. Moreover, research has found that some industries do not discharge the toxic substances regulated by EPA under the BAT program or discharge certain toxic wastes only in trace amounts, leading to a view that BAT is unnecessary to control discharges from those industries.

Based on some of these concerns, a number of industries have urged EPA to seek legislative change that would permit waivers from BAT requirements for toxic pollutants. Current law prohibits EPA from allowing waivers or variances for toxics.

Proponents of retaining the law's uniform BAT requirements argue that, despite the apparent success of BPT in removing many toxic wastes, BAT should be applied as insurance for remaining toxic materials, including any that might be discharged by a plant in the future as a result of manufacturing process change. Moreover, these persons argue, if, by modifying BAT requirements, discharges of toxics in trace amounts occurred, that would be contrary to the Act's philosophy that no one has an inherent right to pollute, especially where technological controls are available. Uniform technological standards also have been supported because they tend to promote economic equity among companies within a particular industry category and because they may foster development of new technologies.

Administration proposal (sec. 2 of S. 2652, H.R. 6670). This section extends the current deadline for industrial compliance with BAT and best conventional technology (BCT) effluent guidelines from July 1, 1984, to July 1, 1988. It also extends until July 1, 1991, the present 3-year deadline extension for dischargers using innovative technologies to achieve BAT.

Although many industry groups had pressed the Administration to seek BAT and BCT waiver authority, the proposed amendments do not contain such a revision. It its analysis of the legislation, EPA stated that establishment of a waiver system would be "premature," since the majority of BAT and BCT

REFERENCE 2

POOLESVILLE SEWERAGE FACILITIES PLAN

C-240479-01

COMMENTS AND QUESTIONS
REGARDING PROPOSED
POOLESVILLE SEWERAGE FACILITIES

June 30, 1982

Prepared by

Lawrence A. Salomone
19108 Hempstone Avenue
Poolesville, Md. 20837

20-955 O—84——97

SUMMARY OF FINDINGS

POOLESVILLE SEWER AND WATER USER CHARGE COULD INCREASE FROM $2.75 TO OVER $8.50

CAUSE:

1) Construction of a new Poolesville Wastewater Treatment Plant
2) Upgrading and Rehabilitation of Existing Sewer Collection System

PRIMARY PURPOSE OF CAPITAL IMPROVEMENTS:

To provide for residential and commercial development projected in Poolesville Master Plan [1].

APPROACH:

Important issues in Sewerage Facilities Plan need clarification [1]. Extensive inflow/infiltration into existing collection system may cause design problems. User fee may increase greatly [1].

ENVIRONMENTAL IMPACT OF EXISTING TREATMENT PLANT:

Water Quality Data collected by the Montgomery County Dept. of Environmental Protection indicate effluent being discharged into Dry Seneca Creek by the Poolesville treatment plant is not a health hazard nor a cause of water quality problems nor a threat to the drinking water supply for Washington, D.C. [4].

COST OF CAPITAL IMPROVEMENTS REQUIRED FOR RESIDENTIAL AND COMMERCIAL DEVELOPMENT:

The Town of Poolesville currently has a combined water and sewer rate of $2.75 per 1000 gallons of metered water. This user rate could become $8.50 per 1000 gallons of metered water as shown below:

Item	Current System Poolesville User Cost per 1000 gal. of Metered Water (1)	Expanded System Projected Poolesville User Cost per 1000 gal. of Metered Water (2)	Current WSSC User Cost per 1000 gal. of Metered Water (3)
Water System	$2.27	$4.54*	$ .82
Wastewater Treatment Plant and Collection System	$ .48	$3.96	$1.62
Combined Water and Sewer Cost Rate	$2.75	$8.50	$2.44

* Doubling the capacity of the water supply system could result in a user cost that is twice the current Poolesville user cost. This estimate should be verified by the Commissioners of Poolesville.

1. INTRODUCTION

1.1 GENERAL (Excerpted from [1]*)

Since 1964, the town of Poolesville has operated its own wastewater collection and treatment system which is completely independent of the WSSC. (The WSSC serves other communities in Montgomery County.) Consequently, on August 20, 1976 the State of Maryland initiated a moratorium on new building permits and sewer service authorizations because residential development was proceeding too rapidly and a condition of inadequate treatment of wastewater at the Poolesville plant existed. In October of 1980, the Commissioners of Poolesville adopted a revised Master Plan which recommended that immediate improvements be made to the sewerage system to support an interim population of 5,800, with further improvements to support an ultimate town population of 7490 to be made at some unspecified time in the future. The town of Poolesville has received a combined step 2-3 Construction Grant to cover the Federal and State share of costs associated with design and construction of the required sewerage treatment plant.

1.2 PURPOSE

Information regarding the need, approach and costs for the proposed sewerage treatment plant and rehabilitation of the existing collection system has been difficult to obtain. Transcripts of public hearings held to discuss the proposed sewerage treatment plant and the town budget show that the concerns of all the residents present were not adequately addressed or their questions completely answered [2]. Also, information in the local newspapers has been incomplete. As a result most Poolesville residents are not aware of the risks and changes in the water and sewer user cost rate associated with the proposed sewerage treatment plant and collection system. Figure 1-1a provides a local paper's editorial dated June 17, 1982, regarding the proposed sewerage treatment plant. The letter to the editor written to provide the readers of the local paper the complete cost information which was published on June 24, 1982 is shown in Figure 1-1b.

The purpose of this document is to provide the Commissioners of Poolesville comments and questions regarding the proposed treatment plant and collection system and allow one month from receipt of this document (July 30, 1982) for a response. In this way more time will be available for a response than is generally available during a public hearing.

1.3 SCOPE

To accomplish the purpose stated in Section 1.2, information was obtained from the following sources:

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* Numbers in brackets refer to references presented at the end of this document.

Figure 1-1a. Editorial from Local Paper

Hurray for Poolesville

The Commissioners of Poolesville are to be congratulated for getting the taxpayers of Maryland as well as of the country at large to finance the overwhelming majority of the town's new water treatment and sewage systems. The result is that tax rates will remain unchanged in spite of the $418,000 capital improvements budget.

The $418,000 may sound like peanuts to the Montgomery County Council in Rockville, but it is an awful lot of money in Poolesville.

With the local commissioners managing to do their work without raising sewer fees, water fees, or property taxes, we would suggest that they might have much to teach, while the county council might have much to learn.

Figure 1-1b. Letter to the Editor to Provide Complete Cost Information

Poolesville capital improvements

In the June 17, 1982 issue, it is stated that "the Commissioners of Poolesville are to be congratulated for getting the taxpayers of Maryland as well as of the country at large to finance the overwhelming majority of the town's new water treatment and sewage systems" ("Gazette" editorial). The information in the Kamber Engineering, Inc. report which is entitled "Final Sewerage Facilities Plan, Supplement For Poolesville and Vicinity" and received by the Dept. of Environmental Protection on Aug. 6, 1981 does not support the statement that the overwhelming majority of the town's new water treatment and sewerage systems will be paid for by the Maryland taxpayers and the country at large. The present Poolesville residents appear to be assuming the risk (technical and management) and financial burdens for the new water treatment and sewerage systems.

The Kamber Engineering, Inc. report (Table 4.1, pg. 4-2) provides the following summary of costs for the selected plan:

Item	Total Costs	Est. Fed. & State Grant	Est. Local Share
SBAST Treatment Plant	$2,118,700	$1,810,550	$382,050
Collection System	$2,447,000	$393,750	$2,053,250

This cost information shows that the Poolesville residents will be assuming over 50 percent of the total capital costs for this project. Furthermore, the report states that the user cost to the present Poolesville residents will be $2.27 for the new treatment plant and collection system. Poolesville residents now pay a user cost of $2.75 for both water and sewer services. Based on the costs provided by Kamber Engineering Inc., the new user rate after the treatment plant and collection system is installed is expected to be over $4.50. These cost figures suggest that, unlike other small towns in the United States, the present residents of Poolesville will pay for the major capital improvements required for residential and commercial development in the Poolesville area.

Addressing the question of risk to the present Poolesville residents, consider the following statement taken from a report by the U.S. General Accounting Office (CED-81-94) dated June 15, 1981. The Environmental Protection Agency states that "the municipality that accepts a construction grant is responsible for the administration and successful accomplishment of the project." The method of treatment selected for the town's new water treatment plant has only been used at the demonstration facility at Culver, Ind.

If there are any difficulties associated with implementing this innovative technology or if there are any increases in cost, the present Poolesville residents will assume the responsibility for "successful accomplishment of the project."

I commend "The Gazette" for publishing this letter and informing its readers of the published costs and risks associated with the new treatment plant and collection system planned for Poolesville.

Lawrence A. Salomone
Poolesville

a) The office of Congressman Michael Barnes, the Montgomery County Office of Environmental and Energy Planning, the Montgomery County Division of Pollution Control and the General Accounting Office.

b) Telephone conversations with federal, state and county officials familiar with the proposed Poolesville sewerage facilities treatment plan and

c) References cited in the Appendix.

A review of the available information was made and this document prepared which provides comments and questions regarding the proposed sewerage treatment plant and collection system. The concerns and questions can be divided into the following categories:

a) Need
b) Approach
c) Cost and
d) Management of Proposed Project

Using this breakdown the comments and questions for each category will now be presented.

2. NEED

2.1 COMMENTS

Kamber Engineering, Inc. [3] states that "failure (of the existing Poolesville treatment plant) to meet the effluent discharge limitations and overflows are a potential health hazard, and are a cause of water quality problems. The treatment plant discharges to Dry Seneca Creek and hence to the Potomac River which is a source of drinking water supply for Washington, D.C." Water Quality data collected by the Montgomery County Department of Environmental Protection do not support this conclusion [4]. Examination of this water quality data obtained from monitoring stations upstream and downstream from the Poolesville Sewerage Treatment Plant, PSTP (see Figure 2-1 for locations) reveal:

a) The water quality of Dry Seneca Creek is rated PERMISSIBLE using the Water Quality Index (WQI) developed by Brown, McClelland, et al of the National Sanitation Foundation [4]. The Water Quality Index is used to describe the average water quality of each of the County's streams. Table 2-1 provides a summary of stream water quality for Dry Seneca Creek and the WQI for 1978 through 1980. Comparison of the indicators used to evaluate water quality with the criteria established by the Maryland Water Resources Administration's Water Pollution Regulations 08.05.04.01 though 08.05.04.12 shows that the average water quality is acceptable (see table 2-1).

b) The water quality of Dry Seneca Creek is not significantly affected by the effluent being discharged by the existing Poolesville treatment plant (see Table 2-2). The data from upstream and downstream monitoring stations show that the river using natural processes is able to minimize the effect of effluent being discharged by the existing Poolesville treatment plant so that its water quality is not significantly affected. An evaluation made by the Maryland Dept. of Health and Mental Hygiene confirms this conclusion [5].

c) The geometric mean total coliform density (MPN/100 ml) and geometric mean fecal coliform density (MPN/100 ml) are higher upstream (station 20040) and downstream at Montevedio Rd. (Station 20020) than at the downstream monitoring station (Station 20030) close to the existing Poolesville treatment plant (Table 2-2). Monthly water quality data [4] also show that at times there is poorer quality water upstream and further downstream than at the downstream location close to the existing Poolesville sewerage treatment plant. Construction of a new Poolesville sewerage treatment plant would not be expected to reduce the effect of the sources of pollution upstream from Poolesville. If the regulatory agencies want to change the WQI for Dry Seneca Creek from PERMISSIBLE to GOOD a regional approach will be required.

The water quality data collected by the Montgomery County Department of Environmental Protection indicates that Poolesville's failure to meet the effluent discharge limitations is not a health hazard, a cause of water quality problems nor a threat to the drinking water supply for Washington, D.C. Therefore, the purpose and need statement in the Kamber Engineering Report [3] for the proposed treatment plant should be changed to read "A new treatment plant and rehabilitation collection system is required in Poolesville to aid in

Figure 2-1. LOCATION OF MONITORING STATIONS FOR 1980 IN REGION II, SENECA CREEK WATERSHED
from [4]

Table 2-1. Summary of Stream Water Quality

Dry Seneca Creek
(from [4])

	Criteria*	
Water Temperature (°C)	Maximum Water Temperature is 24.2°C for trout streams	10.6
Dissolved Oxygen (MG/L)	Minimum is 5.0 MG/L	10.5
pH	Allowable range is 6.0 to 8.5 standard units	7.0
BOD_5 (MG/L)	—	2.7
NO_2 & NO_3 AS N MG/L	—	2.2
Total P AS PO_4 MG/L	—	1.04
Turbidity MG/L (FTU)	Not to exceed 50 Jackson Turbidity Units (monthly average) and 150 JTU at any time	5.9
Total Coliform MPN/100 ml	—	2383
Fecal Coliform MPN/100 ml	maximum allowable for water contact recreation is 200 and for partial body contact is 1000	337
Total Residue MG/L	—	132
Water Quality Index (WQI) Rating 1978	Permissible Range of WQI Rating is 50.0 to 69.9	68.9
1979		64.7
1980		63.4

* Maryland Water Resources Administration's Water Pollution Control Regulations 08.05.04.01 through 08.05.04.12.

Table 2-2. Mean Water Quality Indicators for 1980 in Region II, Seneca Creek Watershed (from [4])

	Station 20040 Upstream	Effluent PSTP	Station 20030 Downstream	Station 20020 Montevedio Rd
Temperature °C	9.7	12.7	10.4	11.7
Mean Dissolved Oxygen (mg/ℓ)	11.0	13.8	9.8	10.6
Mean pH	6.9	7.3	7.0	7.2
Mean BOD_5 (mg/ℓ)	2.0	45.2	3.4	2.6
Mean Nitrite - Nitrate Nitrogen (mg/ℓ as N)	1.64	1.68	3.07	1.97
Mean Total Phosphorus (mg/ as PO_4)	0.34	30.6	5.33	1.9
Mean Turbidity (FTU)	4.4	24.2	7.5	5.8
Geometric Mean Total Coliform Density (MPN/100 mℓ)	10808	—	5002	12834
Geometric Mean Fecal Coliform Density (MPN/100 mℓ)	2561	58.0	1690	1918
Total Residue (mg/ℓ)	82	486	173	143
Suspended Solids	—	54.3	—	—

removing the state of Maryland moratorium for Poolesville (referred to in Section 1.1), to allow residential and commercial development for the Poolesville area and to meet effluent discharge standards determined by law.

2.2 QUESTIONS

Based on Section 2.1, the following information is requested from the Commissioners of Poolesville:

1) Provide the water quality data that documents the environmental need for the proposed Poolesville Sewerage Treatment Plant.

2) Present EPA regulations do not allow funding for sewerage treatment plants that are required primarily for residential and commercial development. Why then was a combined step 2-3 construction Grant awarded to the Town of Poolesville?

3. APPROACH

3.1 COMMENTS

The cost information for the SBAST Treatment System and Collection System provided in the Kamber Engineering Inc. report [3] (figure 1-1) and in Reference [1] shows that at least 50 percent of the cost for this 4.5 million dollar project will be assumed by the present residents of Poolesville. It should be emphasized that 84 percent of the rehabilitation and upgrading of the existing collection system for development purposes will be paid for by the Poolesville residents, i.e., $2,053,250.

Unlike other small towns in the United States, the present residents of Poolesville, Maryland taxpayers, and the country at large will pay for the major capital improvements required for residential and commercial development in the Poolesville area. The Upper Bear Creek Metropolitan District, (UBCMD) serving an area near Evergreen Colorado, provides an arrangement for major capital improvements required for development which can serve as a model for Poolesville, MD.

Developers of a new subdivision, Troutdale Village, will construct and pay for the water and sewer lines required for Troutdale. After water and sewer lines have been built to serve the Troutdale development, the lines will be deeded to the District and the purchasers of homes in the Troutdale subdivision will be subject to taxes for the obligations of the Sanitation District to pay for sewer bonds. They will pay for water use through monthly service charges. Present residents in the rest of the District will pay NOTHING for the service for Troutdale.

Another concern regarding the approach chosen by the Commissioners of Poolesville and Kamber Engineering, Inc. involves the following statement from Reference [3], "The submittal of the final Sewer System Evaluation Survey (SSES) Report, which will identify the extent of the Infiltration/Inflow (I/I) problem and recommend corrective action, will be separate from the remainder of the Facilities Plan in order to avoid delay in implementation of badly needed treatment improvements." This statement suggests that the sewerage treatment facilities could be designed and constructed before the existing collection system is completely rehabilitated and the plant will be built based on an assumed I/I flow of 150,000 gallons per day [1, 3].

I/I reductions of up to 80 percent will be necessary to reach the 150,000 gpd I/I flow figure used for planning the facilities [1]. Considering that previous attempts to rehabilitate the collection system had no recognizable effect [3] on reducing I/I flows which average (monthly) at 230,000 gpd, with a peak of 709,000 gpd [1], inability to achieve the assumed level of reduction could lead to a reduction in the capability of the plant to treat planned domestic waste flows [1]. This would reduce the number of potential users thereby increasing the user fee that is now projected.

Considering that even under the best conditions 25 percent of the waste flow at the new facility will be contributed by I/I [1] and the I/I now experienced in

the existing system, significant quantities of grit may reach the plant thereby affecting its performance and increasing the user cost to the residents of Poolesville.

3.2 QUESTIONS

Based on section 3.1, the following information is requested from the Commissioners of Poolesville:

1) Why not ask those developers, who a Commissioner said are interested in developing further the Poolesville area [6], to assume the responsibility for the major capital improvements required a) to remove the Poolesville moratorium on new building permits and sewer service authorizations? and b) for residential and commercial development? Using this approach the expertise and experience of the development companies can be used to ensure the successful accomplishment of the project.

2a) Provide schedule for implementation of the selected plan for the proposed treatment plan and rehabilitation of the existing treatment plan.

2b) Discuss contingency plans if delays are caused by regulatory reviews, difficulties in reducing I/I flow to 150,000 gpd, and financial, legal, political and environmental factors.

3) What measures will be taken to prevent the proposed treatment plant being designed and constructed based on a maximum I/I flow which cannot be achieved by the rehabilitation work on the existing collection system?

4. COST

4.1 COMMENTS

The user fee resulting from additional residential and commercial development in the Poolesville will be determined by:

a) Combined water and sewer rate existing when major capital improvements required to remove the moratorium initiated by the Sate of Maryland are completed.

b) User charge associated with debt service and Operations and Maintenance (O&M) for the planned wastewater facility for present flow conditions.

c) Cost of intensive sewer rehabilitation required to achieve I/I flow used for design of proposed treatment plant.

d) Additional costs resulting from conditions not accounted for in the estimated costs.

e) The debt service and O&M costs associated with drinking water supplies required to remove the moratorium and serve a population capacity equal to that of the proposed treatment plant. Note that the planned development cannot occur until this cost is reflected in the user fee. Without adequate water supplies, the present Poolesville residents will be paying for a treatment plant and collection system that is designed for a population that is approximately twice the 1982 population of 3000 and a population that is expected by the year 2003. Considering that Poolesville residents frequently face water shortages and that no extensive or highly productive aquifers exist in Montgomery Country [4], further attempts to increase the Poolesville water supply should prove costly.

The Town of Poolesville currently has a combined water and sewer rate of $2.75 per 1000 gallons of metered water (Item "a" above). This fee includes debt service for the old wastewater plant and new town wells, along with the associated operations and maintenance costs [1]. It should also be pointed out that the present user fee of $2.75 is subsidized by general tax funds to the extent that the user fee would be over $5.00 if this was not done [7]. By accepting federal and state grants for the proposed project, this practice will no longer be allowed. Consequently the actual cost for water and sewer services will be reflected in the user fee. The Facility Plan estimates that the user charge for the present residents associated with the debt service and O&M for the planned wastewater facility will be $2.27 (Item "b" above). Using Kamber Engineering Inc.'s cost figures and assumptions from Reference [3], the user charge for the entire system (Items "b" plus "c" above) is $3.96. Therefore, the impact of the proposed sewerage treatment plant and rehabilitation/upgrading of the existing collection system on the Poolesville user cost rate can be seen in Table 4-1. Also, the current WSSC user cost rates are shown for comparison purposes.

Table 4-1. User Cost for Sewerage Facilities

Item	Current System: Poolesville User Cost per 1000 gal. of Metered Water (1)	Poolesville User Cost per 1000 gal. to Expand System (2)	Expanded System: Projected Poolesville User Cost per 1000 gal. of Metered Water (3)	Current WSSC User Cost per 1000 gal. of Metered Water (4)
Water System	$2.27	Item "e"	$2.27 + Item "e"	$ .82
Wastewater Treatment Plant and Collection System	$ .48	$3.96	$3.96	$1.62
Combined Water and Sewer Cost Rate	$2.75		$6.23 + Item "e"	$2.44

If a user fee is determined based on items "a" through "e" above, it is easy to see that the cost to the Poolesville residents that will result from the planned capital improvements being proposed for residential and commercial development will be even more prohibitive--the final user fee could very easily exceed the maximum allowed by Federal law based on a percentage of the mean annual salary of the present Poolesville residents.

4.2 QUESTIONS

Based on section 4.1 the following information is requested from the Commissioners of Poolesville:

1) Provide the final user fee expected after all the capital improvements necessary for additional residential and commercial development have been completed. The final user fee should reflect the cost items a through e listed in section 4.1 and any additional cost items deemed appropriate.

2) Provide the breakdown and assumptions for each cost item that determined the final expected user fee.

3) Provide an evaluation of the cost of intensive sewer rehabilitation as it relates to the benefit provided residents of Poolesville who are or will ultimately be using the system.

5. MANAGEMENT OF PROPOSED PROJECT

5.1 COMMENTS

In a public hearing in 1981 a Commissioner of Poolesville stated that the federal government (EPA) will assume the responsibility that the innovative technology being planned for the proposed treatment plant will be effective in meeting the sewerage treatment needs of the Town of Poolesville. The following statement from Reference [8] suggests that this statement is not correct. The Environmental Protection Agency states that "the municipality that accepts a construction grant is responsible for the administration and successful accomplishment of the project." Therefore if there are any difficulties associated with implementing this innovative technology or if there are any increases in cost, the present Poolesville residents will assume the responsibility for "successful accomplishment of the proposed project."

The Town of Poolesville is a small town. The majority of the 5 Poolesville commissioners are people who have full time private occupations and serve the Town in addition to carrying on their private businesses. None of them are engineers and none of them have any special knowledge of the technical aspects of sewerage treatment. Consequently it is not realistic to expect that they will be able to assume the responsibility for the administration and successful accomplishment of the proposed project. Previous attempts by the Town of Poolesville to manage capital improvement projects have been unsuccessful. Present residents are now paying for a judgment against the Town of Poolesville resulting from a suit filed by a developer involved in development in the Poolesville area prior to 1976. Also, the Town of Poolesville is operating a park, that it constructed, despite the fact that Montgomery County refused to sanction the park for County activities because it fails to meet the County code for recreational areas of this type.

The Town of Poolesville is an "island" in a sea of farmland and 5 acre zoning requirements, but no town can afford to be an island when it involves constructing and operating water and sewer systems that meet present federal and state standards. It is not feasible to think that Poolesville residents (even if the town grows to 5800 people) will ever be able to afford the user cost associated with their own water and sewer system if existing regulations are to be followed. Montgomery County (and the WSSC) should be allowed to provide the long-term solution to this problem. The proposed facilities plan will not meet the ultimate needs of present and future Poolesville residents. There are too many issues in the Facilities Plan which need further clarification.

5.2 QUESTIONS

Based on section 5.1, the following information is requested from the Commissioners of Poolesville:

What steps are being taken to ensure the successful accomplishment of the proposed project?

6. SUMMARY

Based on the available data (sources indicated in appendix), the following additional information is requested from the Commissioners of Poolesville:

NEED

1) Provide the water quality data that documents the environmental need for the proposed Poolesville Sewerage Treatment Plant.

2) Present EPA regulations do not allow funding for sewerage treatment plants that are required primarily for residential and commercial development. Why then was a combined step 2-3 Construction Grant awarded to the town of Poolesville?

APPROACH

1) Why not asked those developers, who a Commissioner said are interested in developing further the Poolesville area [6], to assume the responsibility for the major capital improvements required a) to remove the Poolesville moratorium on new building permits and sewer service authorizations and b) for residential and commercial development? Using this approach the expertise and experience of the development companies can be used to ensure the successful accomplishment of the project.

2a) Provide schedule for implementation of the selected plan for the proposed treatment plan and rehabilitation of the existing treatment plan.

2b) Discuss contingency plans if delays are caused by regulatory reviews, difficulties in reducing I/I flow to 150,000 gpd, and financial, legal, political and environmental factors.

3) What measures will be taken to prevent the proposed treatment plant being designed and constructed based on a maximum I/I flow which cannot be achieved by the rehabilitation work on the existing collection system?

COST

1) Provide the final user fee expected after all the capital improvements necessary for additional residential and commercial development have been completed. The final user fee should reflect the cost items a through e listed in section 4.1 and any additional cost items deemed appropriate.

2) Provide the breakdown and assumptions for each cost item that determined the final expected user fee.

3) Provide an evaluation of the cost of intensive sewer rehabilitation as it relates to the benefit provided residents of Poolesville who are or will ultimately be using the system.

MANAGEMENT OF PROPOSED PROJECT

1) What steps are being taken to ensure the successful accomplishment of the proposed project?

7. CONCLUSIONS

The available information (see appendix for sources) suggests:

1) The ability of the existing treatment plant to meet current effluent requirements is significantly affected by excessive I/I which presently accounts for better than 60 percent of the flow to the treatment plant during wet weather conditions. By reducing I/I to an acceptable limit through rehabilitation work on the existing collection system, the frequency of non-compliance for the existing Poolesville Sewerage Treatment Plant will be reduced.

2) Despite the "poor" quality of the Poolesville effluent being discharged into Dry Seneca Creek, the effect on the water quality of Dry Seneca Creek appears to be minimal based on water quality data in reference [4].

3) Poolesville's failure to meet the effluent discharge limitations is not a health hazard, a cause of water quality problems nor a threat to the drinking water supply for Washington, D.C. Therefore, the primary purpose and need for the proposed treatment plant appears to be to achieve the residential and commercial development projected in the Poolesville Master Plan.

4) Arrangements should be made with those developers interested in the Poolesville area to assume the responsibility for the capital improvements required for residential and commercial development. Using this approach the expertise and experience of the development companies can be used to ensure the successful accomplishment of the proposed project.

5) The rehabilitation of the existing collection system should be completed before the treatment plant is constructed to establish the actual I/I rate for design purposes. Otherwise, a reduction in the capability of the plant to treat planned domestic waste flows would be expected.

6a) The impact of the proposed treatment plant and rehabilitation/upgrading of the existing collection system on the Poolesville user cost rate is significant (see table 4.1).

6b) The final user charge expected after all the capital improvements necessary for additional residential and commercial development (items a thru e in section 4.1) should be determined by the Commissioners of Poolesville and provided to the appropriate local, state and federal agencies to ensure that existing regulations are met with respect to costs. Note that a SBAST treatment plant proposed for Jonesville/Jerusalem is not being built because of the high user cost.

7) Montgomery County (and the WSSC) should be allowed to provide the facilities required to meet the Poolesville water and sewer needs if deemed necessary. The available water quality data [4] indicates that a regional solution will be the most effective and no small town will bear the long-term

20-955 O—84——98

financial burdens associated with maintaining its own water supply and sewer system.

Finally, it is important to understand the basis for the effluent discharge standards set by law for the type of treatment plant presently serving the Town of Poolesville. The effluent discharge limitations of 30 mg/ℓ BOD_5 and 30 mg/ℓ suspended solids have been determined by law and not by the ability of the river to accept the effluent without any significant change in the river's water quality. Water quality data collected by the Montgomery County Department of Environmental Protection [4] indicate that the Poolesville Sewerage Treatment Plant effluent is not significantly affecting the water quality of Dry Seneca Creek. Therefore, there does not appear to be any environmental or health justification for the proposed long-term financial burden being considered for the current residents of Poolesville.

APPENDIX - REFERENCES

[1] Charles W. Gilchrist, "Comprehensive Water Supply and Sewerage Systems Plan, 1982 Annual Update Montgomery County, Maryland," Memorandum to Neal Potter, President Montgomery County Council dated April 29, 1982, 194 pp.

[2] EPA, Water Program Division, Telephone conversation on June 24, 1982.

[3] Kamber Engineering, Inc. "Final Sewerage Facilities Plan, Supplement for Poolesville and Vicinity," Report to Commissioners of Poolesville, Received by Dept. of Environmental Protection, August 6, 1981.

[4] Montgomery County Department of Environmental Protection, "Water Quality of Streams in Montgomery County, Maryland," A Technical Report by the Water Resources Section, Division of Pollution Control, December 1981. Also, more recent water quality data obtained from the STORET water quality data handling system and provided by Montgomery County Division of Pollution Control, June 25, 1982.

[5] Montgomery County Division of Pollution Control, Private Communication, June 25, 1982.

[6] Transcript of Public Hearing to Discuss Poolesville's Budget, June 1982.

[7] Transcript of Public Hearing to Eliminate Ceiling on Tax Rate, 1980.

[8] Eschwege, H., "Wyoming Wastewater Treatment Facility Proves Unsuccessful," Report by the U.S. General Accounting Office, No. CED-81-94, June 15, 1981.

REFERENCE 3

19108 Hempstone Ave.
Poolesville, MD 20837

May 15, 1983

Mr. Charles Dempsey
Acting Inspector General (A-109)
U.S. E.P.A.
Office of the Inspector General for Audits
401 M St.,SW
Washington, D.C. 20460

Dear Mr. Dempsey:

We appreciated the opportunity on April 8,1983 to meet with Mr. R.W. Thieme, Mr. Dick Rodenhouse and Mr. Burt Anker of your staff and to discuss the Poolesville Sewerage Facilities Plan (Project C-240479-02).

Based on our discussion there appears to be legal, technical and economic grounds for withholding final approval of the Poolesville Construction Grant. Some of the pertinent issues include:

1. The environmental need for the proposed wastewater treatment plant is non-existent or very minor;

2. Present and future costs have been grossly underestimated;

3. A large imbalance between the high costs of the proposed plant and the minor environmental benefit exists;

4. Contrary to E.P.A. requirements,the proposed treatment plant is planned for construction before the major inflow and infiltration problem of the collection system is solved (1 million gallons per day during storms - three times the normal flows to the existing treatment plant);

5. With the environmental need for the proposed plant being non-existent or very minor, the Poolesville Construction Grant will be providing funds essentially for development and expansion purposes which is contrary to existing regulations;

6. The shortage of available potable water to meet the needs of the current residents suggests that our health and safety will be jeopardized further by construction of the proposed wastewater treatment plant with its demand for twice as much water as is currently available and

7. The selection of an activated sludge treatment proces is too sophisticated and too costly to operate and maintain for a small town like Poolesville, MD. Furthermore, existing regulations require the use of the present system,if possible, to meet the required effluent discharge limitations. Improvements to the existing lagoon to satisfy the required effluent discharge limitations were recommended by the previous engineering consultant to the Town of Poolesville.

Because of these issues, Poolesville residents are deeply concerned about proceeding with the proposed project. Enclosed is a

Citizen Petition that is signed by over five hundred (500) Poolesville residents opposing the E.P.A. Construction Grant for the new Poolesville wastewater treatment plant. This overwelming response is significant when one considers:

1. Eighty-five percent (85%) of the residents approached during a one week period signed the petition;

2. Poolesville, Md consists of approximately one thousand (1000) households and

3. Generally, town officials are elected with between 130 and 350 votes.

Poolesville residents are depending on the Office of the Inspector General to provide a timely, independent and objective review of the Poolesville Sewerage Facilities Plan and to have the authority to reach a decision that ensures their physical and economic welfare.

Sincerely,

Lawrence A. Salomone

Lawrence A. Salomone
Resident of Poolesville

Bob Watson

Robert A. Watson
Resident of Poolesville

Enclosure

cc: Mr. Earl Quance, P.E. (Enclosure only)
Maryland Office of Environmental Programs
Construction Grants Program
201 West Preston St.
Baltimore, MD 21201

REFERENCE 4

State of Maryland

DEPARTMENT OF HEALTH AND MENTAL HYGIENE
ENVIRONMENTAL HEALTH ADMINISTRATION
201 WEST PRESTON STREET
BALTIMORE 21201
PHONE • 301 383 2740

NEIL SOLOMON, M.D., PH.D.
SECRETARY

DONALD H. NOREN
DIRECTOR

May 21, 1975

The Honorable Eugene E. Halmos, Jr.
President, Commissioners of Poolesville
P. O. Box 158
Poolesville, Maryland 20837

Dear Mr. Halmos:

This Department has conducted a thorough review of documentary material submitted by the Town of Poolesville, Montgomery County government, and other interested parties. It would appear that the dispute between the Town and the County is not directly concerned with present or potential health hazards, but rather with differences of local governmental opinion regarding inclusion of Poolesville's sewage treatment plant expansion in the County Comprehensive Ten Year Water and Sewerage Plan.

Whether or not the expansion of the Poolesville Sewage Treatment Plant should be included in the County Comprehensive Ten Year Water and Sewerage Plan appears more appropriately to be a key planning question. Since the inclusion or not of the Poolesville Sewage Treatment Plant in the said plan does not presently or perspectively pose a health hazard which would compel the Secretary of Health and Mental Hygiene to take action at this time, it does not appear that a revision of the County Plan by the Secretary to include the proposed expanded sewage treatment plant, as aforesaid, would be proper. Therefore, this office, with the concurrence of Dr. Neil Solomon, Secretary of Health and Mental Hygiene, will not order a revision of the County Plan to include the expansion of the Poolesville Sewage Treatment Plant.

If Poolesville and Montgomery County could reach an understanding on the rate at which development can take place in the Poolesville area, then the Town could simply make application to the Montgomery County Council for a change in the updated General County Plan.

Sincerely yours,

Donald H. Noren

Donald H. Noren, Director
Environmental Health Administration

DHN:bb
cc: Mr. Dickran Hovsepian
Thomas J. Walker, Jr., Esq.
Stanley J. Nadonley, Esq.
John B. Walsh, Jr., Esq.
Roy P. Lindgren, M.D.
Mr. H. Clayton Ervine

REFERENCE 5

WATER QUALITY INDEX
MICRO COMPUTER TRS-80
James O. Mathis
Programmer Analyst

Will you input NO_2&NO_3 Nitrate? Yes ✓ No ___ Convert to NO_3? Yes ___ No ✓

Will you input temperature deviation? Yes ___ No ✓ Standard Temp. C? ___
If No - calculate by 1) County, 2) Area, or 3) Station? 1

ID Number? ___ Station #? ___ Name? Dry Spring Creek Cross

1. 296 FEC COLI	? 337.689	<200 SWIMMING <1000 PARTIAL BODY CONTACT	29.7415	Poor
2. 286 PH	? 7.12621		91.895	Excellent
3. 289 BOD 5	? 2.32802		77.61	Good
4. 291 NITRATES	? 2.18829		83.9204	Good
5. 269 PHOSPHATES	? .538066		52.5349	Permissible
6. 304 D TEMP	? 10.5921	-1.2479	86.9334	Good
7. 277 TURBIDITY	? 7.68744		79.9945	Good
8. 139 TOT SLDS	? 137.245		80.9512	Good
9. 178 DO % SAT	? 90.4139 (Input)	(Conv.)	95.3092 WQI	Excellent Noun WQI
DETERMINATIONS				
TRUE WQI = ___	___ (Noun WQI)		68.8396 (This Sample)	Permissible

FOR ALL SAMPLINGS.

The Water Quality Index (WQI) developed by Brown, McClelland, et al., of the National Sanitation Foundation, is used to describe the average water quality of each of the County's streams, or portions thereof, evaluated in this study. The reason for using the WQI is that long and careful research has shown that the WQI compares very favorably with the evaluation of water quality by many experts having many years of experience in the field. For further information regarding the development and explanation of the WQI, see U.S. publication EPA-907/9-74-001 (February 1974)--Water Quality Index Application in the Kansas River Basin.

A comparison of descriptive ratings and WQI is as follows:

WQI:	0 - 24.9 /	25.0 - 49.9 /	50.0 - 69.9 /	70.0 - 89.9 /	90.0 - 100
Verbal Rating:	bad /	poor /	permissible/	good /	excellent

___ WATER QUALITY INDEX
(ID No.)

COPY

REFERENCE 6

Lawrence A.Salomone
19108 Hempstone Ave.
Poolesville, MD. 20837

March 20,1983

Mr. Charles Dempsey
Acting Inspector General (A-109)
U.S. E.P.A.
Office of Inspector General For Audits
401 M St., SW
Washington, D.C.20460

RE: Poolesville, MD - Construction Grant
Project C-240479-02

Dear Mr. Dempsey:

This letter is in response to our telephone conversation on March 17,1983 and Mr. William M. Bulman's (of E.P.A. Region 3) letter to me dated March 15,1983. After reviewing Mr. Bulman's letter it is unfortunate that he has chosen to ignore the major discrepancies in the answers provided by E.P.A., the State of Maryland, the Town of Poolesville and their engineering consultant to my questions. Likewise, he has made it clear that he is not interested in the additional information that Poolesville residents have collected during the last nine months which shows that:

1. The environmental need for the Poolesville Sewerage Facilities Plan (specifically the proposed SBAST Treatment Plant) is non-existent or very minor,

2. The cost figures used to complete the financial capability tracking sheet do not agree with those figures in the transcripts from public testimony, and

3. Poolesville residents have not been given the full picture of the financial impact of implementing the Poolesville Sewerage Facilities Plan.

Appendix A provides a sample of the information that will be provided in a meeting as I discussed with Mr.E. Bradley and Mr. R.W. Thieme.

After my discussions with these members of your staff, I am encouraged that you will give us the opportunity to provide the results of our nine-month investigation to you and/or members of your staff in a meeting. The Poolesville homeowners,that I am writing for, are hopeful that you can provide an independent audit of the Poolesville project. Otherwise, we fear that Poolesville,MD will be added to the list of small towns that have received a Federal construction grant and now have defective sewerage treatment systems and long-range financial burdens.

As per my conversation with Mr. R.W. Thieme, I will expect to hear from you by March 25,1983.

Sincerely yours,
Lawrence A. Salomone
Lawrence A. Salomone

Appendix A

As a sample of one of the issues that will be discussed in a meeting consider the following: Mr. Bulman in his letter of March 15, 1983 states: "you again raised the issue of costs for the proposed system. Enclosed is a copy of our latest correspondence from the Town's engineers, dated December 1, 1982, which details the engineer's estimates for existing and future costs. We have reaffirmed these figures by telephone with the consultant as a result of your latest letter...We have no authority or responsibility in such a local matter as the current operation of the water and sewer funds. We are completely satisfied with the figures derived by the Town's consultant concerning estimates of future user costs..."

From these statements it is clear that Mr. Bulman does not recall that completion of the E.P.A. Financial Capability Tracking Sheet(that he requested from the Town's engineering consultant in his letter of October 25,1982) requires"a breakdown of the currently combined water and sewer charges nor realize that the numbers used to complete this E.P.A. form do not agree with public testimony and published information.

The Financial Capability Tracking Sheet is used to ensure that Federal guidelines are met with respect to the financial impact of the proposed wastewater treatment plant on Town residents. Based on the figures provided the total user charges after this project goes on line(per year) should not exceed(.0175 x $23,344) $408. It is therefore the E.P.A.'s responsibility to resolve the discrepancies in existing and future user costs shown in Tables 1 and 2 respectively and to ensure that the figures used are correct. With close to $2,000,000 of Federal money involved one might expect that the E.P.A. has authority and responsibilty in such a local matter as the current operation of the water and sewer funds.

Table 1
Existing User Cost
for Water and Sewer Systems

Source	User Cost per 1000gal.
Town's engineering consultant (Attachment 1)	$3.83 for FY 82
Town's Certified Public Accountant (Attachment 2)	$5.20 for FY 79
Town's water and sewer fund budget and published information (Attachment 3)	$6.22 for FY 82

Table 2
Future User Cost for Expanded
Sewer System

Source (1)	Increase to Annual Sewer Charge (2)	Total Sewer User Charge per year (projected from available data) (3)
Town's engineering consultant as seen in Attachment 1	$52	$250
Town's engineering consultant as stated in public hearing on August 10,1981 (Attachment 4)	$90 to $150	$412 to $472
Other small towns and available information	$200 to $500	$522 to $ 822

Despite the large discrepancies shown in Tables 1 and 2, Mr. Bulman chose to reaffirm the cost figures by telephoning the source of the information. As a professional engineer, I know that the best way to resolve significant discrepancies is to obtain information from more than one source. I believe that the information provided in Tables 1 and 2 serves as an independent check of the pertinent figures and indicates that an audit of the Poolesville project is warranted. Column 3 of Table 2 also shows that the financial impact of the Poolesville project exceeds federal guidelines ($408).

Finally, Attachment 1 indicates that the financial impact of the proposed wastewater treatment plant construction and the rehabilitation of the existing sewer system will be to increase the annual sewer user cost by $0.68 per 1000 gal. Does the E.P.A. really believe that a $4.5 million Sewerage Facilities Plan (that includes tertiary wastewater treatment for double the present Poolesville population) can be implemented in a town of about 1000 households at a user cost of $0.68 per 1000 gal.? Inflationary factors alone can cause a increase in the user cost of this order of magnitude.

December 1, 1982
WBED-04

U.S. EPA, Region III
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Attn: Mr. William Bulman, Chief
Delaware/Maryland/Virginia/DC Branch

Re: 3WM20
Existing and Projected Sewerage System User Charges for the Town of Poolesville
Grant No. C-240479-02

Dear Mr. Bulman:

As per my December 1, 1982 telephone conversation with Andrew Uricheck, please find enclosed a revision of the November 9, 1982 Financial Capability Tracking Sheet for the referenced project. In reviewing this user fee analysis with the Town's accountant, an error in our computations was noted.

The November 9, 1982 letter stated that in order for the Town to recover the actual operating costs of both the water and sewer systems, during FY 82, a user fee of $3.29 per thousand gallons, or $2.22 per thousand gallons for sewer and $1.07 per thousand gallons for water would have been necessary. The corrected value is $3.83 per thousand gallons, or $2.59 per thousand gallons for sewer and $1.24 per thousand gallons for water. While the average household in Poolesville paid approximately $211 for water and sewer service last year (based upon an average daily consumption of 210 gpd and a user rate of $2.75 per thousand gallons), the actual cost of providing that service was $293.

A recomputation of the financial impact of the proposed wastewater treatment plant construction and the rehabilitation of the existing sewer system resulted in an increase of the annual sewer user costs by $0.68 per thousand gallons from $2.59 to $3.27 per thousand gallons. The projected total annual user cost after implementation of the project would now represent 1.07 percent of the median household income, or an increase of 0.22 percentage points.

We regret that our previous [illegible] and hope that this does not cause any [illegible] review [illegible]. Please let us know if you need any further [illegible] clarification.

Sincerely,

Dennis M. Kember, P.E.

DMK/kl

enclosure

cc: John C. Milnor, OEFP
Earl S. Quance, OEP
Andrew R. Uricheck, EPA
Commissioners of Poolesville

Financial Capability Tracking Sheet

1. Name of Project: Poolesville, MD

2. Grant Number: C-240479-02

3. Type of Review (check one): Facility Plan _____
Step 3 Application _____
Part B Review _____
Other (explain) Step II grant/design stage

4. Median Household Income: $ 23,344* Base Year 1980

5. Existing User Charges (per month): $ 16.50 (per year): $ 198
Base Year 1982

6. Total User Charges after this project goes on line (per month): $ 20.83 (per year): $ 250
Base Year 1982

7. Total Annual Wastewater Service Cost: $ 250 Base Year 1982

8. Local Financial Impact (Item 7 - Item 4): % 1.07

9. Applicable High Cost Benchmark (%) (circle one):

1.0% 1.5% (1.75%)

*Washington, DC-Maryland-Virginia SMSA

POOLESVILLE, MARYLAND
TOWN HALL

In Re Public Hearing:

Proposed Water Rate Increase

The matter of a Public Hearing on Proposed Water Rate Increase came on for hearing on March 19, 1979, at 8:00 p.m., o'clock, when were present on behalf of the Commissioners:

APPEARANCES

Town Commissioners:

Charles W. Elgin, Sr., President
Philip G. Harris, Sr.
Mary Lu Moyer
Robert Rauch
Carl Alton Brown

Also Present:

Richard McKernon, Esquire
Nancy I. Fost - Town Clerk & Treasurer
Geanie Stokes, Secretary
Ted Mercer and Robert Fuhank, CPA's

an area that's being considered as a revision to provide the redress, okay. We don't have it. It's an oversight. But, these things take time, but we are in the process of trying. We've got a draft in circulation now amongst the Commissioners for their comments. When we have that finalized, we'll present it to the public for their comments. These sort of things will be coming up: we're trying to get them one at a time and we just -- just give us the benefit of the doubt. We're not up here doing nothing. We are working. So, just bear with us.

MR. SHARP: I appreciate that, but I was just curious to know what the -- system is.

MR. PRICE: I was just wondering what would the rate be, the proposed Budget if the water system paid for itself? ANSWER IS ON PGS. 70 & 71

PRESIDENT: You really want to know that? Mr. Eubanks, Mr. Mercer?

MR. MERCER: This year --- I'm going to have to figure. I'll get that information for you -- approximately three fifty to four dollars.

MR. RAUCH: It also depends upon how many capital improvements were scheduled in a given year.

MR. HARRIS: That's assuming that everybody maintained the same level too.

I don't think that there is any way to predict the

County paper, whatever. But, in addition, we did also send 70
out an individual letter to every ---

MR. SHARP: That wasn't my point of the question. The point of the question was, where I came from, you had to designate by referendum the official paper and I was just -- no, this is my only point. I didn't know.

PRESIDENT: Excuse me, Mr. Halmos.

MR. HALMOS: Let me make a comment for the Poolesville Bulletin. Both the Montgomery County and United States Postal Service have used the Poolesville Bulletin as a means of advertising official business. Legally, there is a requirement as I'm sure you know that a certain amount of paid circulation -- it's only two hundred which would be pretty ridiculous -- our circulation has twenty two hundred. Legally we are not a newspaper of record according to the Postal Service.

But, I say that both the County and the United States Government are a quasi-government agency have considered us sufficiently legal to advertise in it for whatever that's worth.

PRESIDENT: If there are no further comments or questions -- excuse me, Mr. Mercer, you have ---

MR. MERCER: Yes sir, I just wanted to answer the gentleman's question insofar as what the rate would be to include capital improvements and principal and debt as

proposed for the Budget for the year ending June 1980, it would be five dollars and twenty cents. 71.

Assuming there was no subsidy from the general fund.

PRESIDENT: The meeting -- the hearing, rather, will be --- For your information, the hearing will be held open for five days. Anyone who wishes to send in any written comment and then it will be closed and the Commissioners will make a decision and by formal resolution will adopt a water and sewer rate.

Thank you all for coming.

WHEREUPON, the hearing concluded at 9:50 p.m., o'clock.

Poolesville Sanitary Commission
Water-Sewer Rates

Poolesville

Annual Front Foot Charges	
Water	None
Sewer	None
Total	0
Cost per 1,000 gallons	
Water	
Sewer	$2.74
80,000 gallons/year	$220.00
Subsidy (current budget)	
$92.55 per person, for family	$277.65
Total yearly cost	$497.65

USER RATE PER 1000 GAL. $= \frac{497.65}{80}$

$= \$6.22$

(Note: Table based on:

A family of three persons, owning a lot with 100 feet of road frontage, consumming an average of 80,000 gallons of water per year.

The charges shown for Poolesville water users in the accompanying table include a cost not shown directly on tax or water-user charges: An annual "subsidy" transferred to the water and sewer fund from the town's General Fund.

In the budget approved last June for the current Fiscal Year (1983), Town Commissioners included a $325,000 item to cover this subsidy.

That figures out to $92.55 cost per capita against all Town residents — or $277.65 per year for a family of three, on the basis of the current Town population of about 3,560 persons.

REFERENCE: "THE BULLETIN" DATED OCTOBER 30, 1982

COMMISSIONERS OF POOLESVILLE
WATER & SEWER FUND BUDGET
For the Year Ending June 30, 1983

PROPOSED: June 7, 1982

Estimated Cash Balance, July 1, 1982			$162,966
Add: Grant From General Fund			$325,000
Less:			
Operating Budget:			
Revenue:			
Consumer User Charges	$ 210,000		
Interest Income	10,000		
Total Revenue		$220,000	
Expenses:			
Salaries - Clerical	$ 17,774		
Salaries - Maintenance	29,837		
Taxes - Social Security	3,190		
Employee Benefits	7,248		
Employee Training	1,000		
Water Purification Chemicals	24,000		
Electricity	55,000		
Gas	800		
Trustee Fees	525		
Insurance	8,300		
Interest	98,532		
Accounting & Auditing	7,750		
Legal Fees	6,000		
Office Supplies	2,200		
Plant Supplies & Testing	11,000		
Repairs	39,000		
Truck Operating	3,600		
General Engineering	2,000		
Depreciation	64,850		
Total Operating Expenses		382,606	
Loss From Operations		- $162,606	
Add Back Non-Cash Items			
Depreciation and Amortization		64,850	
Cash Loss From Operations			(97,756)
Capital Improvements:			
Water System:			
Well #6 and Water Lines	$ 250,000		
Water Meter Replacement	2,500		
Water Storage Facility Study	17,500		
Total Water System		$270,000	
Sewer System:			
Sewer Line Replacement	$ 125,000		
New Treatment Plant	844,000		
Less(Federal & State Grants	(906,359)		
Total Sewer System		- 62,641	
Total Capital Improvements			(332,641)
Debt Retirement			(50,054)
Estimated Cash Balance, June 30, 1983			$ 7,515

Grafts Lux
C-240479-2
9/25/81

PUBLIC HEARING

BEFORE THE COMMISSIONERS OF POOLESVILLE

- - - - - - - - - - - - - - - - - - X
In the Matter of: :
POOLESVILLE STEP 1 :
SEWERAGE FACILITIES PLAN :
- - - - - - - - - - - - - - - - - - X

Poolesville, Maryland
Monday, August 10, 1981

The above-entitled matter came on for public hearing at 7:40 p.m. before The Commissioners of Poolesville:

Charles W. Elgin, Sr., President
Alton Brown
Phillip Harris
Mary Lu Moyer

Also present:

Richard McKernon, Town Attorney

Town Engineers:

Dennis Kamber
Ken Hosto
Stu Sibold
Ed Barth, III

John Milnor, Office of Environmental Programs

Roland Schmidt, Office of Environmental Programs

So the actual local share of costs, the difference in local share of costs in that 20 percent is really very small.

MR. MILNOR: John Milnor, Office of Environmental Programs.

To help answer this man's question back here, the user charge per thousand gallons at present flow, if this plant went on line tomorrow, these people in this town who are hooked up would pay $2.27 per thousand gallons. Can you tell them what it would cost them per quarter or per month? What's the average?

MR. BOSTO: I can compute that, yeah.

MR. MILNOR: I know I use so many thousand gallons every quarter. And I want these people to be able to multiply that $2.27 so they know what it costs them every year.

MR. KAMBER: $90 to, say, $100 to $150 a year.

What's included in your bill now are the operating costs.

MS. MOYER: Some of it is the water system.

MR. BOSTO: You now pay $2.75 per thousand gallons of water consumed. That figure is composed of retirement of debt on the water system, sewer system, sewerage treatment facilities, and operating costs for both. I don't have the breakdown of what that is.

REFERENCE 7

19108 Hempstone Ave.
Poolesville, MD 20837

May 21, 1983

Mr. Charles Dempsey
Acting Inspector General (A-109)
U.S. E.P.A.
Office of Inspector General for Audits
401 M St.,SW
Washington, D.C. 20460

Re: Poolesville, MD - Construction Grant
Project C-240479-02

Dear Mr. Dempsey:

Thank you for your letter of May 19, 1983. We appreciate your keeping us advised of the status of the investigation of the Poolesville project.

The Town of Poolesville held a public hearing on May 16, 1983 to discuss the proposed tax increase for the year ending June 30,1984. During the public hearing, additional information became available concerning water and sewer costs. Enclosed is a copy of the budget for the year ending June 30, 1984 and the account of the hearing reported in the May 18, 1983 edition of the Gaithersburg Gazette. Transcripts are available from the Town of Poolesville.

Highlights of the public hearing included:

1. In their first public statement giving a specific water and sewer rate increase due to the new plant, the Commissioners of Poolesville stated that the rate for water and sewer use will increase $0.25 per thousand gallons from $2.75 per thousand gallons to $3.00 per thousand gallons. They estimated that the total annual water and sewer bill for the average household will increase $20 to $30 per year.

2. Mr. Robert Eubank, auditor for the Town of Poolesville, stated that in order to have recovered the actual operating and maintenance expenses of the water and sewer systems without a transfer of funds from the General Fund, the rate should have been $9.23 per thousand gallons. This figure reflects an annual debt service of$150,000 to $160,000, operation and maintenance costs and capital improvements. If the capital improvement costs are depreciated, the user fee of $9.23 per thousand gallons reduces to $5.60 per thousand gallons. Note the difference between these rates given by the town accountant and the user fee of $3.83 per thousand gallons used as present costs in the affordability analysis (See letter From Mr. Earl Quance to Mr. Lawrence Salomone dated December 9, 1982, paragraph 2,line 5 and letter from Dennis Kamber of Kamber Engr. to Mr. Wm. Bulman of E.P. A., paragraph 2, line 6).

We hope that this testimony by the Town's auditor is useful and that it provides additional documentation that the water and sewer costs have been underestimated. Furthermore, when the cost figures provided by Mr. Eubank are used, the likelihood of the costs for the proposed Poolesville Sewerage Facilities Plan exceeding E.P.A. affordability guidelines becomes obvious.

Sincerely,

Lawrence A. Salomone

Lawrence A. Salomone
Resident Of Poolesville

Robert A. Watson

Robert A. Watson
Resident of Poolesville

Enclosures

The Gazette

Wednesday, May 18, 1983

Petition signed by 500 hits treatment facility cost data

by Barbara Davis

Opposition to Poolesville's proposed wastewater treatment plant appears to be mounting as a growing number of residents express apprehension about the project as the late summer construction date draws nearer.

About 15 residents acted over 500 signatures on a petition objecting to the $1.6 million Environmental Protection Agency grant which supplies over half of the funding for the project.

Kathryn Zajdel, initiator of the petition, said that she had been following the planning of the proposed facility and decided it was time to find out where the townspeople really stood on the issue.

The 500 residents, who live in the town's two major subdivisions, Wesmond and Westerly, endorsed blocking the federal grant on the basis that the project's present and projected costs have been "grossly underestimated."

The petition also expressed concern that a gulf exists between the public interest and that of private landowners whose property may be eligible for developemnt if construction of the new plant lifts the current state-imposed growth moratorium for lack of adequate water and sewer services.

The petition states that the citizens are suspicious of the environmental justification for pumping federal dollars into maintaining "aptly named" Dry Seneca Creek according to federally prescribed water quality codes.

Emphasizing that the purpose of the petition was not to undermine the commissioners' work, Zajdel said that a federal investigation "wouldn't hurt." If everything is "on the up and up (town officials) will come through with flying colors," Zajdel said. "If not we will find out. Either way, the residents of Poolesville will benefit."

Zajdel echoed the complaints of other opponents of

(See PETITION, page 2)

Petition hits facility cost data

(Continued from page 1)

the project that there had "definitely been a lack of information" from town officials about how the cost of the facility is translated into cost to the town's residents.

On the heels of the petition, the Commissioners of Poolesville mailed out a newsletter to all residents of the town, defending the proposed facility on the basis that the current system is inadequate and not in compliance with state and federal regulations. According to the letter, the town could be subject to a $25,000 per day fine for noncompliance.

In their first public statement giving a specific water and sewer rate increase, the commissioners proposed a rise of 25 cents per 1,000 gallons over the current rate of $2.75, to a level of $3. They estimated that the total annual water and sewer bill for the average household will climb $20 to $30 per year.

As they have stated in the past, the commissioners reiterated that the cost of new water and sewer lines to serve areas that may be developed in the future will be absorbed by the builders.

In yet another arena, the project's most vocal antagonist, Lawrence Salomone, asked town consultants at the week's public tax hearing to calculate the current water fee that would recover the total cost of the system, including the general tax fund subsidy to the water and sewer fund.

Town accountant Robert Eubanks responded with $9.23 per 1,000 gallons, which reflects an annual debt service of $150,000 to $160,000 on a general obligations bond, capital improvements, and operating and maintenance costs. He noted that the bulk of the debt service on the bond was interest which was deductible by residents on their federal income tax.

Dennis Kamber, president of the town's engineering consultant firm, interjected that the actual cost would be $5.60 per 1,000 gallons per household when noncash expenses such as $65,000 per year for depreciation of future improvements were factored into the computation.

Salomone then pointed out that the effective current rate published by town officials in a document submitted to the state was $3.83 per 1,000 gallons per household and asked for clarification of the discrepancy between this figure and the $5.60.

Eubanks said tha the higher of the two figures included funding prior debt service for the existing town debt. He added that if all previous bonds were subtracted from $5.60, the result would be $3.83 if everything by the existing debt was funded by user fees. The debt on the current system is paid from the water and sewer budget.

Comparing the rate structure of the current system with that of the proposed plant, Town Commission President Charles W. Elgin Sr., noted the new facility would be funded exclusively with user fees, which include debt retirement, while the onld one is supported by both user fees and tax revenues.

Kamber said that the actual operating costs of the new facility plus the $25,000 in new indebtedness would provide the basis for a fees of $3 per 1,000 gallons.

After nearly an hour of discussion in public hearing on maintaining the current property tax rate which generates revenue for the town budget, Salomone contended that he had heard "no answers that resolve the discrepancies. We start with $9 and remove costs until we get down to $3.83. Still there is no clear explanation."

A number of things have changed the picture from the preliminary estimates to where the town government is now, Elgin countered. The town expected to receive 87.5 percent funding for the project. Instead, 97 percent of the $2.26 million facility's cost will be subsidized by state and federal grants, he pointed out.

Another factor that lowered the cost to residents, according to Elgin, was the state public works loan at a low interest rate of 6.09 percent for 30 years.

Still pending are the results of an internal audit of Environmental Protection Agency files by the agency's inspector general that was sparked by Salomone's request for a federal probe, of the town's sewerage facilities plan.

COMMISSIONERS OF POOLESVILLE
WATER & SEWER FUND BUDGET
For the Year Ending June 30, 1984

PROPOSED: May 16, 1983

Estimated Cash Balance, July 1, 1983			$ 280,947
Add: Grant From General Fund			225,000
Less:			
Operating Budget:			
Revenue:			
Consumer User Charges	$ 210,000		
Interest Income	16,000		
Total Revenue		$ 226,000	
Expenses:			
Salaries - Clerical	$ 12,073		
Salaries - Maintenance	39,522		
Taxes - Social Security	3,457		
Employee Benefits	8,254		
Employee Training	1,000		
Water Purification Chemicals	20,000		
Electricity	48,000		
Gas	500		
Trustee Fees	525		
Insurance	10,500		
Interest	95,869		
Accounting & Auditing	7,500		
Legal Fees	3,000		
Office Supplies	3,500		
Plant Supplies & Testing	12,000		
Repairs & Maintenance	35,000		
Truck Operating	4,000		
General Engineering	6,000		
Depreciation	64,850		
Total Operating Expenses		375,550	
Loss From Operations		$ 149,550	
Add Back Non-Cash Items			
Depreciation and Amortization		64,850	
Cash Loss From Operations			84,700
Capital Improvements:			
Water System:			
Well #6 and Water Lines	$ 200,000		
Total Water System		$ 200,000	
Sewer System:			
Sewer Line Replacement	$ 821,000		
New Treatment Plant	1,609,464		
Less Federal & State Grants	(2,287,602)		
Total Sewer System		14,2862	
Total Capital Improvements			342,862
Debt Retirement			51,836
Estimated Cash Balance, June 30, 1984			$ 26,549

MERCER, EUBANK & COMPANY
CERTIFIED PUBLIC ACCOUNTANTS

COMMISSIONERS OF POOLESVILLE
GENERAL FUND BUDGET
For the Year Ending June 30, 1984

PROPOSED: May 16, 1983

Estimated Cash Balance, July 1, 1983			$ 260,465
Add:			
Collections of Prior Year Accounts Receivable			
Revenue			
Local Taxes:			
Real Property	$ 258,225		
Public Utilities	7,865		
Ordinary Corporations	1,866		
Total Local Taxes		$ 267,956	
County Shared Taxes:			
Income Tax	$ 48,200		
Property Tax Grant	722		
Total County Shared Taxes		48,922	
State Shared Taxes:			
Franchise	$ 354		
Horse Racing	2,000		
Highway Gasoline & License	40,000		
Total State Shared Taxes		42,354	
Licenses & Permits		300	
Other Revenues:			
Federal Revenue Sharing	$ 3,651		
Montgomery County Revenue Sharing	50,000		
Total Other Revenues		53,651	
Other Local Revenue:			
Tennis Court Lighting	$ -0-		
Rental Income	2,400		
Interest Income	24,000		
Miscellaneous Income	300		
Total Other Local Revenue		26,700	
Total Revenue			439,883
Cash Available For Budget Year			$ 700,348
Less:			
Operating Expenditures			
Legislative:			
Salaries - Clerical	$ 6,036		
Taxes - Social Security	404		
Employee Benefits	825		
Advertising	585		
Dues & Subscriptions	1,700		
Printing & Duplicating	-0-		
Code Organization	20,000		
Total Legislative		$ 29,550	
Elections - Printing & Duplicating		-0-	
Law - Legal Fees		18,000	
Planning & Zoning		-0-	
Financial Administration:			
Salaries - Clerical	$ 6,037		
Taxes - Social Security	404		
Employee Benefits	825		
Printing & Duplicating	200		
Office Supplies	4,000		
Telephone	3,300		
Accounting & Auditing	7,500		
Insurance	700		
Total Financial Administration		22,966	

MERCER, EUBANK & COMPANY
CERTIFIED PUBLIC ACCOUNTANTS

COMMISSIONERS OF POOLESVILLE
GENERAL FUND BUDGET
For the Year Ending June 30, 1984

PROPOSED: May 16, 1983

Operating Expenditures Continued			
Municipal Building:			
Utilities	$ 2,200		
Insurance	2,200		
Supplies	1,500		
Repairs & Maintenance	4,300		
Total Municipal Building		$ 10,200	
Streets and Storm Drainage:			
Salaries - Maintenance	$ 13,174		
Taxes - Social Security	883		
Employee Benefits	2,201		
General Engineering	2,600		
Repairs & Maintenance	5,000		
Truck Expense	6,500		
Street Lighting	54,401		
Total Streets and Highways		84,759	
Recreation:			
Park Maintenance	$ 18,000		
Utilities	1,000		
Total Recreation		19,000	
Total Operating Expenditures			$ 184,475
Grant To Water and Sewer Fund			$ 225,000
Debt Service (Principal & Interest)			$ 6,388
Cash Balance Before Capital Improvements			
Capital Improvements:			
Streets and Highways	$ 40,000		
Maintenance Tractor	-0-		
Computer	3,000		
Municipal Buildings	-0-		
Town Truck (Net of Trade)	10,000		
Total Capital Improvements			53,000
Estimated Cash Balance, June 30, 1984			$ 231,485

MERCER, EUBANK & COMPANY
CERTIFIED PUBLIC ACCOUNTANTS

REFERENCE 8

ATTACHMENT A

6

State of Maryland

DEPARTMENT OF HEALTH AND MENTAL HYGIENE
ENVIRONMENTAL HEALTH ADMINISTRATION
P.O. BOX 13387
201 WEST PRESTON STREET
BALTIMORE, MARYLAND 21203
PHONE • 301-383-2740

I. SOLOMON, M.D., PH.D
SECRETARY

DONALD H. WOREN
DIRECTOR

August 15, 1977

The Honorable Samuel Zattiero
President
Town of Poolesville
P.O. Box 158
Poolesville, Maryland 20837

Dear Mr. Zattiero:

The Environmental Health Administration has made a determination that the Drinking Water Supply System serving the Town of Poolesville is inadequate to serve the needs of its residents.

Therefore, in accordance with Article 43, Section 387C (d) 3, no further building permits are to be issued for construction which will result in an increased demand on this system until an uninterruptable adequate supply of safe drinking water can be provided to all residents.

Sincerely yours,

Donald H. Woren, Director
Environmental Health Administration

DHW:sjl

Enclosure

cc: Dr. Benjamin D. White
Mr. James D. Cline
Mr. Earl S. Quance
Mr. Mike Wojton
Dr. J. Brett Lazar

ATTACHMENT A

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

IN THE MATTER OF	• SECRETARY OF HEALTH AND MENTAL
THE POOLESVILLE DRINKING WATER SUPPLY SYSTEM	• HYGIENE
Serve on:	
The Honorable Samuel Settiere Mayor of Poolesville P. O. 158 Poolesville, Maryland 20837	• ENVIRONMENTAL HEALTH ADMINISTRATION • 201 West Preston Street • Baltimore, Maryland 21201

***

ORDER

THE POOLESVILLE DRINKING
WATER SUPPLY SYSTEM

WHEREAS, the State of Maryland, Department of Health and Mental Hygiene, pursuant to the powers, duties and responsibilities vested in and imposed upon, the Secretary of Health and Mental Hygiene by the provisions of Article 43, Section 387 et seq, Annotated Code of Maryland, as delegated to the Director, Environmental Health Administration, has conducted an investigation and has determined that deficiencies in the facilities of the existing drinking water supply system including but not limited to an inadequate source of supply cause inadequacies to exist in the quantity of water supplied to the residents of Poolesville and thereby constitute a menace to the health safety and comfort of the public.

It is this 17 day of August 1977 therefore ORDERED by the Director, Environmental Health Administration that:

1) The Town of Poolesville enter into a Plan for Compliance with the Environmental Health Administration for upgrading of the existing water supply system within 60 days. This Plan for Compliance shall include but not be limited to:

ATTACHMENT A

8. a study of the ground water resources of the vicinity of Poolesville so as to determine any limitation on availability of water for potential development.

DATE:

August 19, 1977

SECRETARY OF HEALTH AND MENTAL HYGIENE

By Donald H. Noren

Donald H. Noren
Director
Environmental Health Administration

Approved as to form and legal sufficiency

this 17 day of August 19 77

Francis Di Dato

ASSISTANT ATTORNEY GENERAL

REFERENCE 9a

Lawrence A. Salomone
19108 Hempstone Ave.
Poolesville, Md. 20837

February 27,1983

Mr.William M. Bulman, Chief
Delaware/Maryland/Virginia/DC Branch
US E.P.A. Region 3
6th & Walnut Streets
Philadelphia, PA 19106

Dear Mr. Bulman:

As a result of your efforts, we have received information from Mr. E. Quance of the Maryland Office of Environmental Programs regarding the Poolesville Sewerage Facilities Plan. We have reviewed this data and it indicates:

1. The E.P.A. is providing the majority of funding to implement a 4.5 million dollar sewerage facilities plan to maintain the water quality of a DRY creek. Note that the Poolesville wastewater treatment plant discharges into Dry Seneca Creek. Dry Seneca Creek has a 10yr. 7 day low flow of 0.35 cfs. The Poolesville Town leadership agree that the environmental need for this project is non-existent or very minor (see editorial from Western Montgomery Bulletin dated Feb.26,1983 that is enclosed.).

2. Information regarding annual operational costs to run the present secondary treatment system and the future tertiary treatment system has been inconsistent and does not agree with public testimony given on these issues. Variations of over 60% have been reflected in the data.

Based on these unexplained discrepancies and possible misuse of Federal funds, we request:

1. A Federal investigation to verify that the intent of Federal legislation regarding funding for projects of this type are being strictly followed.

2. An independent audit of the Poolesville Water and Sewer Fund to resolve differences in reported current sewerage user fees (Present Plant) and projected user Fees (Proposed SBAST Plant)

We ask your assistance in this matter. Since Construction bids are due out in Spring, 1983, we request a response as soon as possible. We would appreciate a response by March 14, 1983.

Yours truly,

Lawrence A. Salomone

Lawrence A. Salomone

Bob Watson

Bob Watson
17209 Whites Rd.
Poolesville,MD 20837

FEB. 26, 1983

THE WESTERN MONTGOMERY BULLETIN

Published at Poolesville, Md. on each Saturday. Circulated in Poolesville, Barnesville, Beallsville, Dickerson, Quince Orchard, Dawsonville, Big Woods, Martinsburg, Jerusalem, Darnestown, Potomac, Gaithersburg, Germantown & Rockville.

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EDITORIALS

Sewer Program – For The Fish?

Some has said that you can learn a great deal, if you just listen.

We followed that precept last Saturday morning, during a local visit by the area's new Congresswoman–Mrs. Beverly Byron.

And we learned, from the mouths of two local men who were trying to get Mrs. Byron on their side in their persistent battle against the Town's sewer upgrading plans – something quite new :

They said that real purpose of upgrading and expanding the Town's sewage treatment plant is very simple: The whole thing is begin done solely to improve the water quality in Dry Seneca Creek for the benefit of fish, and to improve the "swimmability " of the stream itself.

They added – for Mrs. Byron's benefit – that these objectives (plus adding to land values) seem to be a pretty ridiculous reason for spending several million dollars of Federal, State and local money.

We are amazed at these ridiculous charges and allegations:

In the many years that we and others have been following and urging the upgrading of the Town's sewer system, we never even once thought about the welfare of the fish, or swimmers (what swimmers?).

In our simplistic approach, we have always believed that the improvement and expansion was necessary to handle, safely and efficiently, the sewage produced by the existing community, as well as to provide for some modest, controlled and much needed future growth.

Of course there's no question that improving the quality of the affluent discharged to the Creek from the Town's plant will benefit the local area. In fact, we have seen some State reports over the years indicating that there are, even now, more fish – such as they are – in the stream than there have been for a century or so. That's largley because the Town has been augmenting streamflow by a couple of hundred thousand gallons of water per day, and has improved its quality. After all, that is the main purpose of the current facility - and it has done its job.

We've never heard, though, of anyone using the Creek as a bathing beach, anywhere, any time (expect maybe for wading). It is entirely too rocky, too shallow, and inappropriate, for such purposes.

Unfortunately, wild charges those made to Mrs. Byron are symptoms of a particular tendency among people who like to boast of their technical and scientific knowledge: They delight in seizing on some obscure point, taking it out of context, and trumpeting their "discovery" in efforts to damage someone else's efforts.

Fact is that stream improvements is included in the list of benefits from the sewer work that Town engineers submitted in the Town's successful application for funding. But this was lasted as a logical and common sense outcome of the planned work–and very definitely as secondary or tertiary benefits, not the principal one.

As to involving Mrs. Byron – we think she has the sense to believe that the homework has been done on this project at all levels, that it is a good one, an affordable one – a town affair, and should be

REFERENCE 9b

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 CHESTNUT BUILDING
PHILADELPHIA, PA 19106

In Reply Refer to: 3WM22

MAR 15 1983

Mr. Lawrence A. Salomone
19108 Hempstone Avenue
Poolesville, MD 20837

Dear Mr. Salomone:

This letter is in response to your letter dated February 27, 1983 (and co-signed by Mr. Watson) concerning your continued unhappiness with the EPA construction grant given to the Town of Poolesville for the purposes of constructing a sewage treatment plant and other improvements to the sewer system.

Even though most of your questions have already been answered on numerous occasions by EPA, the State of Maryland, the Town of Poolesville, and their engineering consultant, I will again attempt to answer them to your satisfaction.

The first issue that you raised concerns whether or not we are funding a project to protect a dry creek, even while acknowledging that the ten year/seven-day flow of Dry Seneca Creek is 0.35 cfs. By definition, any stream that has a ten year/seven-day flow greater than zero is not a dry stream.

Secondly, you enclosed an editorial from The Western Montgomery Bulletin proposing to show that the Poolesville town leadership agrees that the environmental need for this project is non-existent. Since the Town of Poolesville is the grantee for this project and not the local newspaper, I fail to see any relevance to the Bulletin's editorial position on this issue.

Thirdly, you again raised the issue of costs for the proposed system. Enclosed is a copy of our latest correspondence from the Town's engineers, dated December 1, 1982, which details the engineer's estimates for existing and future costs. We have reaffirmed these figures by telephone with the consultant as a result of your latest letter.

Fourthly, you have asked for a Federal investigation to verify that Federal legislation intent was being followed for this project. I can assure you that this project would not have been funded initially if it did not meet the intent of the federal legislation. This project has been repeatedly reviewed by EPA and the State as a result of your previous letters, and we do not see the justification for another Federal investigation.

Fifthly, you asked us for an independent audit of the Poolesville Water and Sewer Fund. Apparently, you have a total misconception of the role of the Federal government in general, and EPA in particular, in this project. We have no authority or responsibility in such a local matter as the current operation of the water and sewer funds. We are completely satisfied with the figures derived by the Town's consultant concerning estimates of future user costs, and the State will be reviewing the Town's user charge system as a routine requirement of the construction grant program prior to initiation of construction.

Lastly, but far most importantly, is your statement of a "possible misuse of Federal funds." We take this statement very seriously. You did not raise this issue in your previous letters to us. There is no information in our records, including your most recent letter, which leads us to believe that Federal funds have been misused. If you have specific information which you are using as the basis for your allegations, we urge you to send your information directly to the EPA Inspector General at the following address:

Mr. Charles Dempsey
Acting Inspector General (A-109)
U. S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

We have sent to the Inspector General copies of your February 27, 1983 letter and a copy of this letter, pending submission of further information, or for his independent action if he considers any to be appropriate.

Sincerely yours,

William M. Bulman

William M. Bulman, Chief
Delaware/Maryland/Virginia/DC Branch

Enclosure

cc: Mr. Bob Watson
Mr. Charles Dempsey, EPA
Mr. Earl S. Quance, OEP
Mr. Dennis Kamber, Kamber Engineering, Inc.
Ms. Mary Lu Moyer, Commissioners of Poolesville

20-955 O—84——100

December 1, 1982
WTSD-04

U.S. EPA, Region III
6th and Walnut Streets
Philadelphia, Pennsylvania 19106

Attn: Mr. William Bulman, Chief
Delaware/Maryland/Virginia/DC Branch

Re: 3WM20
Existing and Projected Sewerage System User Charges for the Town of Poolesville
Grant No. C-240479-02

Dear Mr. Bulman:

As per my December 1, 1982 telephone conversation with Andrew Uricheck, please find enclosed a revision of the November 9, 1982 Financial Capability Tracking Sheet for the referenced project. In reviewing this user fee analysis with the Town's accountant, an error in our computations was noted.

The November 9, 1982 letter stated that in order for the Town to recover the actual operating costs of both the water and sewer systems, during FY 82, a user fee of $3.29 per thousand gallons, or $2.22 per thousand gallons for sewer and $1.07 per thousand gallons for water would have been necessary. The corrected value is $3.83 per thousand gallons, or $2.59 per thousand gallons for sewer and $1.24 per thousand gallons for water. While the average household in Poolesville paid approximately $211 for water and sewer service last year (based upon an average daily consumption of 210 gpd and a user rate of $2.75 per thousand gallons), the actual cost of providing that service was $293.

A recomputation of the financial impact of the proposed wastewater treatment plant construction and the rehabilitation of the existing sewer system resulted in an increase of the annual sewer user costs by $0.68 per thousand gallons from $2.59 to $3.27 per thousand gallons. The projected total annual user cost after implementation of the project would now represent 1.07 percent of the median household income, or an increase of 0.22 percentage points.

[illegible] our [illegible]
and hope that this [illegible] not cause [illegible]
[illegible] let us [illegible] if you [illegible]
of [illegible]tion.

Dennis M. Tanner, P.E.

DMT/kl

enclosure

cc: John C. Milnor, OEPP
Earl S. Quance, OEP
Andrew R. Uricheck, EPA
Commissioners of Poolesville

Financial Capability Tracking Sheet

1. Name of Project: Poolesville, MD

2. Grant Number: C-240479-02

3. Type of Review (check one): Facility Plan _____
Step 3 Application _____
Part B Review _____
Other (explain) Step II grant/design stage

4. Median Household Income: $ 23,344* Base Year 1980

5. Existing User Charges (per month): $ 16.50 (per year): $ 198
Base Year 1982

6. Total User Charges after this project goes on line (per month): $ 20.83 (per year): $ 250
Base Year 1982

7. Total Annual Wastewater Service Cost: $ 250 Base Year 1982

8. Local Financial Impact (Item 7 - Item 4): % 1.07

9. Applicable High Cost Benchmark (%) (circle one):

1.0% 1.5% (1.75%)

*Washington, DC-Maryland-Virginia SMSA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III – 841 Walnut Sts.
Philadelphia, Pa. 19106

SUBJECT: Poolesville, Maryland - Construction Grant Project C-240479-02

DATE: MAR 15 1983

FROM: Greene A. Jones, Director
Water Management Division (3WM00)

TO: Charles Dempsey
Acting Inspector General
U. S. EPA (A-109)
Washington, DC 20460

Two Maryland citizens, Mr. Lawrence A. Salomone and Mr. Bob Watson, have made accusations of a "misuse" of EPA Title II Construction Grant funds by the Town of Poolesville, Maryland, in a letter to us dated February 27, 1983 (copy enclosed).

We have no information in our office which would support this allegation. However, in a letter dated today, we have invited Messrs. Salomone and Watson to supply your office with any specific information that they may have.

We will provide your office with any additional information that we receive from Messrs. Salomone and Watson.

Enclosure

cc: P. Ronald Gandolfo (3AI00)
Lawrence Salomone
Bob Watson

REFERENCE 10

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 CHESTNUT STREET
PHILADELPHIA, PENNSYLVANIA 19107

In Reply Refer to: 3WM20

OCT 25 1982

Re: C-240479-01
Poolesville, MD

Kamber Engineering Company
2301 Research Blvd.
Rockville, MD 20850

Dear Mr. Kamber:

In the aftermath of the evening meeting involving town officials, your firm, EPA, Maryland and other interests in Poolesville on August 11, 1982, I have received from Mr. Lawrence A. Salamone, a Poolesville resident, further inquiries concerning the referenced project. Mr. Salamone's questions were wide-ranging and generally followed along the same lines of those he asked in his letter report of June 30, 1982.

I have read your responses (dated August 11, 1982) to Mr. Salamone's questions. In my view, your answers were factually correct with respect to the various aspects of the municipal permits and construction grants programs, and on other aspects your answers also had every appearance of being responsive to the questions to the extent possible given the current stage of this Step 4 project. I point this out because I am about to ask a variation of a question you have already addressed.

My concern is basically focused on project affordability. I am well aware that at this stage you can supply nothing more than estimates of user costs (as you said on page 7 of your response). I am also aware that Poolesville's current water and sewer charges are not separated and in fact may be supplemented by using general funds. Nevertheless, I would ask that you supply your best reasonable estimates of current and prospective sewer user costs and use those estimates to complete a financial capability analysis on the enclosed form. I realize this will require an estimation of the breakdown of the currently combined water and sewer charges, but I believe such a breakdown is needed for planning purposes even if a worst-case assumption is used.

The form is extremely brief and we have partially completed it in advance (questions 1, 2, 3, 4, and 9). The local median income level is a Standard Metropolitan Statistical Area figure from our data (#4) and the cost benchmark (#9) is from EPA affordability guidance and is linked to the median income level. In this case, the median figure of $23,344 dictates a benchmark of 1.75 percent. You should use a different median

income figure if you have data showing a different number is appropriate, but the benchmark will not change unless the median figure drops below $17,000.

In supplying the remaining figures, I would expect that you will add statements which condition or qualify your estimates. Please call me or Andrew R. Uricheck (215-597-9966 or 9783 respectively) if you have any questions about the form.

For the record, I would like to add my view of another related issue, one that I understand was raised and discussed at the August 11 meeting. The Poolesville wastewater treatment project provides reserve capacity with the usual possibility of additional development in the service area. Allegedly, a certain amount of such development would eventually require expansion of the local potable water system. If so, prudence would dictate that the cost of the effects of that expansion be considered. However, it is my view that the decision on how to levy such costs among existing and prospective potable water users is a local decision and is not in any way linked to the user charge system required by the construction grants program or the Clean Water Act.

Again, let us know if you have any questions.

Sincerely yours,

William M. Bulman

William M. Bulman, Chief
Delaware/Maryland/Virginia/DC Branch

cc: John C. Milnor, OEP
Earl S. Quance, OEP
Andrew R. Uricheck, EPA
Mary Lu Moyer, Town of Poolesville

Financial Capability Tracking Sheet

1. Name of Project: Poolesville, MD

2. Grant Number: C-240479-02

3. Type of Review (check one): Facility Plan _____
   Step 3 Application _____
   Part B Review _____
   Other (explain) Step IV grant/design stage

4. Median Household Income: $ 23,344* Base Year 1980

5. Existing User Charges (per month): $_____ (per year): $_____
   Base Year _____

6. Total User Charges after this project goes on line (per month): $_____ (per year): $_____
   Base Year _____

7. Total Annual Wastewater Service Cost: $_____ Base Year _____

8. Local Financial Impact (Item 7 - Item 4): %

9. Applicable High Cost Benchmark (%) (circle one):

   1.0% 1.5% (1.75%)

*Washington, DC-Maryland-Virginia SMSA

REFERENCE 11

Toms Brook - Maurertown Service Authority
"Sewer and Water Services to Our Community"
East Creek Road / Post Office Box 87
TOMS BROOK, VIRGINIA 22660

October 21, 1982

Mr. Larry Salomone
19108 Hempstone Avenue
Poolesville, MD 20837

Dear Larry:

It was a pleasure meeting you and the family a few weeks back. I hope you enjoyed our neck of the woods and that you'll plan a return visit in the very near future.

It was interesting to learn that you are also involved with a local sewer authority. As a member of the Board for the Toms Brook - Maurertown Service Authority, I thought I'd briefly share with you the major problems that we have encountered:

A. The system was grossly overdesigned - total daily capacity is 189,000 gallons and we are only using 50,000. Also, an independent engineer has specifically identified approximately $260,000 worth of unnecessary design work.

B. Serious cost over-runs - in addition to being overbuilt, final charges far exceeded original estimates.

C. We are currently attempting to close both a FMHA Loan ($398,700) and grant ($91,900). It amazes me that the government will offer large sums of money to a small community and expect that the local community board members be knowledgeable in the proper disbursement of these funds.

Please see the enclosed articles from two of our local newspapers. You will note that the system was pushed upon the community and that only half of those required to hook-up have in fact done so.

I leave you with one thought. Before any discussion is made to expand your system, be absolutely certain that you are given the full picture - from accurate cost estimates of exactly what you will be getting to the individual who is specifically responsible for heading up the project. Also, in using FMHA Funding, it is entirely possible that they will require mandatory hook-ups for everyone in the service area, a point that has sadly divided our community.

Best of luck.

Sincerely,

RJC

Richard J. Church

RJC/ds

Enclosures

Current Rate Schedule:

$10.25 - Water - First 1000 Gallons
1000 - 3000 Gallons - $5.13/1000

$10.00 - Sewer - First 3000 Gallons
Next 3000 Gallons - $1.67

REFERENCE 12

REPORT BY THE U.S.

General Accounting Office

Wyoming Wastewater Treatment Facility Proves Unsuccessful

In 1973 a wastewater treatment facility was designed principally to treat wastes from a cheese manufacturing plant in the small Wyoming town of Thayne. Today, the $1.15 million failing facility partially treats only 106 sewage hookups in Thayne, while the cheese plant discharges its highly concentrated, untreated wastes directly into a local waterway.

The project also has been beset by such problems as poor design, construction, and plant operation; inadequate program and financial monitoring by the Environmental Protection Agency; and ineffective program management by Thayne.

GAO is making several recommendations about the project's financial activities.

CED-81-94

May 5, 1981

Mr. Henry Eschwege
Room 6146, GAO Building
441 G. Street N.W.
Washington, D.C. 20548

Re: Draft Report regarding Thayne, Wyoming
Wastewater Treatment Facility

Dear Mr. Eschwege:

I am writing to you to provide comments on behalf of the Town of Thayne, Wyoming to the GAO regarding the draft of the GAO proposed report regarding the wastewater treatment facility in the Town of Thayne, Wyoming.

The specific responses of the Town to this draft report are contained in the comments provided with this letter, and in the responsive comments prepared by the Town's engineer, Tudor Engineering. The Town requests that both the enclosed comments and the comments submitted by Tudor Engineering be included together with this letter as the Town's reponse to the draft report. The purpose of this letter is to provide some background information regarding the history of the project which is not contained in the draft report.

The Town of Thayne is a small town and has been a small town since its incorporation. Most of Thayne's citizens are long-time residents of the Town. The Mayor and council members are people who have full time private occupations and serve the Town in addition to carrying on their private businesses. None of us are engineers or accountants, and none of us has any special knowledge of the technical aspects of sewage treatment. We are small town people trying to provide for the needs of our neighbors and our community. Neither I nor any of the present members of the Town Council were serving as Mayor or members of the Town Council when the wastewater treatment project was begun. Thus, we do not have first hand knowledge of discussions and meetings which took place in the early years of the sewage treatment project. All of the members of the present town government do have considerable general knowledge of the problems and failures of the plant as initially constructed, as it has been a matter of considerable public concern in the Town of Thayne for a number of years.

Council, perhaps mistakenly, relied upon the experts in DEQ and EPA to openly and fairly advise the Town as to what was necessary to meet the statutory and regulatory requirements of these agencies. The Town relied on these agencies and had no reason to do otherwise.

Now the Town is left with a sewer system it never needed and doesn't want, and the problem of the cheese factory wastes is still unresolved. The Town of Thayne would like nothing better than to give the entire system back to the state and federal governments and return to the use of septic tanks, but that unfortunately is not possible. The Town is faced with continuing problems with the defective collection system and no money to pay for repairs to this system. The Town is faced with perpetual costs of operation and maintenance of the sewage treatment facility. Trying to be good neighbors, the people of the Town of Thayne have been burdened with objectionable odors, a defective sewage treatment system and long-range financial burdens. I hope your report will clearly document these facts.

The Town requests that the comments submitted with this letter, as well as the comments from the Town's engineer, be included as part of the comments of the Town of Thayne in repsonse to your draft report.

On behalf of the members of the Town Council, I thank you for the opportunity to provide these comments to your agency.

Very truly yours,

Charles Dana

Charles Dana, Mayor

On page 9 of the draft in the third paragraph there are statements regarding assurances which were given to the Town that the sewage treatment facility would work. There were representations made by both the EPA and the DEQ that the spray field treatment system would work, and the Town of Thayne relied upon the specific representations of these regulatory agencies in approving the system which was constructed.

The extracts of the clean water act and EPA regulations set forth on page 9 of the draft bear no relationship to the actual course of events which took place between the Town and EPA. The Town agreed to build the sewage system it didn't need in reliance on the representations of EPA and DEQ that the project would work. EPA and DEQ specifically reviewed and approved the design of the initial treatment system and the Town was never advised by these agencies that although they were telling the Town what kind of system to build and how to build it, they would have no responsibility for any design deficiencies or other problems with regard to the treatment system.

[GAO COMMENT: We state on p. 8 that we could find no support for Thayne's contention that EPA insisted that Thayne adopt the sprayfield system.]

The statements on page 9 regarding the level of treatment prior to application to the spray field demonstrate the kinds of political pressure with which the Town of Thayne was being whipsawed by various government officials and agencies, which pressures had little relationship to the legitimate needs of the people of Thayne or the possibility that the treatment facility would be capable of performing adequately.

[GAO COMMENT: None.]

On page 11 it is noted that the SVCC discharged wastes substantially in excess of the design capacity of the original Town facility. The Town agrees that this took place consistently after the ownership of the facility changed hands and was one of the two major causes of the failure of the system. The Town takes exception to the statement that "excess BOD loadings such as these measurements show can cause problems". The Town believes that the excess discharge levels from the cheese factory did cause problems and disputes the statement in the draft report that the problems from such overloading were only potential.

[GAO COMMENT: We are not disagreeing that SVCC's discharges did in fact cause problems. The purpose of the statement Thayne takes exception to was to explain how excess BOD loadings at any treatment facility can affect the facility's operation.]

Mr. ROE. Please proceed.

TESTIMONY OF LAWRENCE A. SALOMONE, POOLESVILLE AREA CITIZENS, POOLESVILLE, MD., ACCOMPANIED BY BOB WATSON

Mr. SALOMONE. Thank you, Mr. Chairman. Accompanying me today is Bob Watson.

Mr. Chairman and members of the committee, my testimony concerns the construction grants program and its impact on towns. As background, consider the following: in 1979, then EPA Administrator Kostel stated for every Federal dollar that is already cleaning up our water, another $11 have been in construction of plants that have yet to process a single kilogram of waste water. As a result, many towns, for example, Manassas, and Manassas Park, Va., and Thayne, Wyo., have received funds from the Federal construction grants program and now they have defective sewage treatment systems and/or long-range financial burdens.

EPA's own data indicate that as many as 50 percent of the Nation's waste water treatment facilities fail to operate properly due to such factors as improper system design and installation and poor operator training. A major issue of growing concern to me, as well as to some of your colleagues, is the financial impact of the grants program on State and local governments, particularly the cost to local governments to operate and maintain these new facilities. It should be clear that the construction grants program is not working well. Perhaps now is the time for reconditioning and fine tuning so that the available funds can be used more effectively to protect the environment. For this purpose, I am providing you with information regarding the need, approach, and costs for a proposed sewage treatment plant in Poolesville, Md. This information will serve to illustrate why the construction grants program should be fine tuned. The town of Poolesville, population 3,500, in upper Montgomery County, Md., is seeking a new federally funded $2 million tertiary treatment plant that will allow the town to approximately double in size.

A large number of citizens is challenging the town board of commissioners on the wisdom of building the plant, calling it too big, too costly, too sophisticated, and unnecessary. Seven years of water quality data show that the environmental need for the plant is nonexistent or very minor. The EPA is providing over $2 million to maintain the water quality of an intermittent creek, named Dry Seneca Creek, as fishable and swimmable.

Present and future costs seem to have been grossly underestimated. The town auditor stated in a public hearing that present water and sewer costs are about $5.60 per thousand gallons. Yet the town's engineer and the commissioners of Poolesville have used $3.83 per thousand gallons as the present water and sewer costs in the affordability analysis required by EPA, Region 3, and the State of Maryland.

Regarding future costs, the Poolesville Town Board made no public statement of the financial impact of the proposed project of the town residents until the release of the May 13, 1983, newsletter, almost 2 years after the August 10, 1981, public hearing required by law for this project. The town board stated in this news-

letter that the proposed tertiary treatment plant, which would serve about twice the present population of Poolesville, can be built, operated and maintained for a mere 25 cents per thousand gallon increase to the current water and sewer rate. In addition, the shortage of available funds for potable water to meet the needs of the current residents suggests that our health and safety will be jeopardized further by construction of the plant with its demand for twice as much water as is currently available.

Also the proposed treatment plant is planned for construction before the major inflow and infiltration problem of the collection system is solved, that is 1 million gallons per day during storms, three times the normal flows to the existing treatment plant.

Despite the legal, technical, and economical reasons for not awarding the Poolesville grant, and the fact that a small percentage of the projects funded actually are complete and contributing to water quality improvement, EPA Region 3, the Office of the Inspector General of the EPA, and the State of Maryland supported an inappropriate technology for the Poolesville situation. Although an environmental impact statement should have been required for this project, an environmental impact statement was not required by the Office of the Inspector General and EPA Region 3.

The Poolesville situation is symptomatic of a much deeper problem with the way the construction grants program is being administered. The costs and environmental benefits of using the proposed technology are significantly out of balance. Water quality data should be used if available and good water quality monitoring programs should be established to keep decisionmakers from making costly decisions based on the lack of information or on misinformation. The EPA and the States should make the right selection in streams uses that these are realistic and attainable uses. The Clean Water Act should be amended to provide that compliance orders shall include a cost-benefit analysis.

Future costs of federally funded wastewater treatment plants are frequently underestimated. The user charge system required by the Clean Water Act should reflect all of the components that will be necessary to maintain the financial integrity and self-sufficiency of the system. The Clean Water Act should be amended to insure that all relevant costs are included in the user charge system to insure that the affordability analysis is performed using representative cost figures.

The Federal Government, under the Clean Water Act, should not continue to offer large sums of money to small communities and expect that the local community board members are knowledgeable in the proper disbursement of these funds. Some of the postmortems done on towns with defective treatment systems and long-term financial burdens show that towns cannot always rely on the advice of their engineering consultants and the EPA.

Treatment plants have been overdesigned and the treatment process selected have not been compatible with the ability of the community to operate and maintain the system. The Clean Water Act should be amended to enhance accountability.

This concludes my statement.

Mr. ROE. We want to thank you, Mr. Salomone, for your valued testimony.

Basically, I think what you are saying then in the particular illustration that you brought to our attention is that the folks just did not get the facts straight at the outset; is that correct? The information was incorrect?

Mr. SALOMONE. It was incorrect in the initial stage and it has been incorrect to this day. And there is no mechanism in the construction grants program to insure that the errors and discrepancies that you would see in the backup documents are eliminated. I attended the hearing, the public hearing that was required by law, and observed the representative from the State of Maryland ask the town for the cost of the system. He wanted to know what the new user fee would be. They did not know and yet there was no mechanism to follow up, to ever find that out. If the citizens of Poolesville had not taken the initiative to demand an answer, we would not have gotten to the point that we see the discrepancy of $5.60 versus $3.83 that we see today. Before then, we did not have a discrepancy because they did not have any cost figures. Now we have pushed them and they have given cost figures, but the cost figures used in the affordability analysis are different than what the CPA for the town and the engineer have testified in public hearings for the town and what they used in the affordability analysis.

Mr. ROE. The gentleman from Oregon.

Mr. SMITH. Thank you, Mr. Chairman.

Mr. Salomone, in what capacity are you here? Do you represent Poolesville area citizens and how is that done? Are you here as an individual?

Mr. SALOMONE. As an individual representing those citizens who are concerned about this project.

Mr. SMITH. I see, OK.

Well, it is new to me, I guess, but for a community to say, no, we do not want a Federal grant, it is just backward somehow. I always thought communities applied for Federal grants, you know. So I am interested in that.

I guess my question, and taking the lead of the chairman's position or thought, would not a dollar for dollar match with respect to an EPA loan extract the same kind of requirement that you want?

Mr. SALOMONE. I think the question of the mechanism for funding a project is not really the point that should be made. I think we have to back up a bit and look at the way they established the need, the approach, then we get to the costs. Before you get to the costs, whether it be a loan procedure or an outright grant, you have to look at how they establish need today. And in the case of Poolesville, we have an intermittent creek, most times of the year you can straddle the creek, you can also see the bottom of the creek, the pebbles because it is so clean. The water quality data collected by Montgomery County supports that and yet they have decided to fund the grant on the grounds of environmental need.

Mr. SMITH. Well, I am suggesting that would not Poolesville be very much more careful about appropriating $1 million of their own money rather than spending it on a $2 million grant, that is my point.

Mr. SALOMONE. What I have observed in other towns, and what I have heard today also supports that the commercial interests for

development in many of our towns in the country suggests that the pressures to grow are such that despite the prudence in rejecting an illogical approach, you may still go down that path until it is too late.

In the case of Poolesville, the information with respect to cost was so sketchy that there would not be the awareness on the part of the residents until it was too late.

Mr. SMITH. Thank you, Mr. Chairman.

Mr. ROE. Mr. Moody?

Mr. MOODY. Why are they making such a poor decision at the local level?

Mr. SALOMONE. Well, we have provided information which indicates that the president of the commission has land that was originally scheduled to be developed which now, because of the shortage of water and sewer, there is a moratorium on the town. Also, there are those few individuals in town that feel that the growth for the town is the way to go. They are the ones directing in this case.

Now, with the policies of the Clean Water Act being so vague with respect to the balance between environmental benefit and costs, the general interest gets confused with the private interests in this case, and it is very difficult to sort out the two.

Mr. MOODY. Are you saying that most of the citizens of the town do not want to build a system which would accommodate growth but that few people do who control the council or whoever makes the decision?

Mr. WATSON. I am Bob Watson. I think the real issue is not growth or no growth. I think most of us in Poolesville want other people in Montgomery County to share our town and to live in it. It is a nice place, it has got a good school system and it needs to grow. What is missing all the way up to the highest level of the EPA is not the grant of money to build a plant but the estimate of the operating costs and the effect of those operating costs when we citizens will have to pay the bill. When the town of Poolesville is allowed to put out a document to everybody in town saying that the cost of this new plant is going to be 25 cents per thousand increase and the highest levels of the EPA and Inspector General's Office support that, something is wrong with the system. We know in fact we are going to be talking in terms of a $5 to $8 increase. Is that right, Larry?

Mr. SALOMONE. Yes; they went so far as to say that the cost will go down as the development occurs. I would also like to make a very important point of why we raised this issue and why we are perhaps setting a precedent for coming—suggesting turning away a grant. That is if the construction grants program funds a tertiary treatment plant for Poolesville, then that money is not available for those towns who really need it to clean up a more environmentally hazardous condition, and that is the point. It is not growth versus nongrowth.

Mr. MOODY. Is not the State supposed to, in its priority lists, supposed to make those kinds of decisions? Is not that what the State's priority listing is all about? Avoid that very thing where you send money to towns that do not need it very much and deny towns that really do?

Mr. SALOMONE. I cannot speak for why the State has funded this.

Mr. MOODY. Poolesville is on the State priority?

Mr. SALOMONE. Yes. However, my review of the available information, and I encourage others to do the same, leaves you with the conclusion that you cannot understand why.

Mr. MOODY. Have you asked State decisionmakers?

Mr. SALOMONE. That is correct.

Mr. MOODY. What did they say, why was Poolesville put on and other States left off?

Mr. SALOMONE. The State of Maryland declares all surface waters as class I. So you are required to maintain them fishable, swimmable. Consequently, while this stream has acceptable water quality when there is water in the stream, when you get to the 10-year, 7-day low flow, essentially in this case, 20 garden hoses worth of flow, you cannot meet the criteria of a class I water. Consequently, they consider that necessary.

Mr. MOODY. In other words, there is no separate standard for creeks that are dry, as dry as the one you described?

Mr. SALOMONE. Yes and that gets back to my statement that if you are going to have it a goal of the Clean Water Act to make all surface waters fishable, swimmable, we should insure that the use is realistic and attainable.

Mr. ROE. Would the gentleman yield?

Mr. MOODY. Surely.

Mr. ROE. You also made a comment, as I recall it in your testimony, that somewhere in the order of magnitude of $1 million may be needed to correct the infiltration problem.

Mr. SALOMONE. That is the flow, the million gallons per day is the flow. When the normal flows are about a third of that.

Mr. ROE. That is what I am saying. So there is a very heavy infiltration problem involved having nothing to do with this tertiary situation?

Mr. SALOMONE. That is correct, and my recommendation would be if we are looking for effective use of our Federal funds, is to fix the collection system. Then we see what flows are going to the system and we may find that the existing secondary treatment system can handle the flows. But why go in just as you pointed out earlier, build a fancy plant and still perhaps be overrun because of the inflow and infiltration problems?

Mr. ROE. I am trying to get into the record though, on the basis of your testimony where the infiltration was concerned, that would also have a bearing on the size of what a tertiary treatment may be. If you do not get to solving the basic problems of the system you are simply adding to it, therefore, building a larger tertiary treatment plant to handle the rainwater.

Mr. SALOMONE. That is correct.

Mr. ROE. That is what I want to get on the record. So that is part of it.

Mr. SALOMONE. Right. And also though, it is important to point out that there is not adequate water supply to meet the design capacity of this plant.

Mr. ROE. If the gentleman would yield further, it seems to me that one point you are making is that we ought to look into the present conditions and provisions of the law to determine whether there should be a test written into the law that infiltration be con-

sidered in any expansion and that should have a priority in any part they are going to clean up and that is the point I think you are leading to.

Mr. SALOMONE. That is correct.

Mr. WATSON. Mr. Roe——

Mr. ROE. The gentleman from Wisconsin?

Mr. WATSON. I was really pleased to hear your comment that the funding from the grants program should address multiple issues, not just one single issue and that is what we have run up against in Poolesville. Business, and industrial proponents saw a chance to get some quick money right now. They are afraid the money might get away from them by taking the proper approach. The proper approach is to fix the I&I first, so you know what your final I&I is. You see, they already built this—designed this plant based on what, 80 percent reduction in I&I, Larry?

Mr. SALOMONE. 150,000 gallons per day is the design inflow and infiltration rate.

Mr. MOODY. Even though they have not checked that number?

Mr. SALOMONE. That is correct, and in cases of severe storms it exceeds a million gallons per day.

Mr. WATSON. So they have designed a plant, they have no idea what the I&I is going to be and Poolesville right now in the summer cannot barely deliver 200,000 gallons of water per day. The EPA is funding a 600,000 gallons per day treatment plant. If we, in fact, in Poolesville have to support a 600,000 gallon per day tertiary treatment plant, with 10-10, 10 milligrams per litre—5 day biological oxygen demand, 10 milligrams per litre of total suspended solids with only the current residents using 200,000 gallons of potable water, our costs per thousand gallons are going to be through the roof. Growth is going to be gone, our homes are going to be gone and we are going to be added to the list of towns that EPA has devastated. But we are going to be different in one way and that is we have documented this to the highest levels of EPA, the highest levels of the State of Maryland and the U.S. Congress and they are still going ahead with it. Even the Inspector General's Office, talking with Larry 2 days ago, said this plant may cost $1 million more than we think it is, but do not worry about it. It is 97-percent funded by the Federal Government. Larry said that is an awfully cavalier attitude to take toward Federal money.

Mr. MOODY. Not only that, the downstream operating costs are going to be on your back.

Mr. SALOMONE. That is correct; 75 percent or more inducement to towns, is quite attractive on first look. However, when the EPA walks away and you have a concrete monument that you have to operate and maintain, that is when the problem just begins.

Mr. MOODY. So you say they put the cart before the horse. They built the plant without knowing the exact need on the I&I side of things?

Mr. SALOMONE. That is correct, they also have selected an innovative technology that is an activated sludge system, when a previous engineer for the town suggested using the present lagoon system and making the necessary modifications in the system to handle the more critical design flows that occur during the

summer months. And yet they have taken the Cadillac approach because they feel it is giving them the capacity that they want.

Mr. WATSON. You will notice when the town took the Cadillac approach they got 400,000 gallons more treatment capability than if they took the lagoon approach.

What we are saying is if you are going to expand the town let the new people in the town pay for a sewage plant that will support them and a water supply if it is adequate. Do not allow the present residents to be manipulated into building a concrete monument. We will then have to beg other people to use it to get our unit cost down to where we can keep our homes. And we have gone to the highest levels and they said: "no; build the oversized plant."

Mr. MOODY. Have you availed yourself of the normal political channels to get redress? Have you addressed your State legislatures and addressed your Federal Congressmen to deal with EPA and your State legislators to deal with your State government and so forth?

Mr. WATSON. Absolutely.

Mr. SALOMONE. Yes; and we always got a very good response at the beginning. A few days later or weeks later when they respond, they come back, it is a local issue. And yet there is Federal money.

So I believe it is more than just a local issue.

Mr. MOODY. You do recognize the economies of scale will sometimes dictate that it makes sense to overbuild early in the phase because you do expect growth—expensively retrofit systems to allow to handle growth that occurs later. That you would not deny, would you?

Mr. SALOMONE. No question that 20-year design life is reasonable when you are building a facility.

The question is, and I repeat, Is the need there and is the approach reasonable? The technology that they are using is not appropriate because ultimately the cost to operate and maintain this innovative technology, the tertiary treatment plant, will far exceed the more simplified lagoon-type approach that was recommended by the previous engineer.

Mr. MOODY. Thank you.

Mr. ROE. Let me ask you this question if the gentleman will yield.

When you were talking about the remedies, do the bulk of the people in the town feel this way, do you think?

Mr. SALOMONE. Yes; I believe so.

Mr. ROE. Well, there is matching money involved and that has to come out of some place. Is that coming out of a bond ordinance?

Mr. SALOMONE. Yes. But, remember, it is innovative so, at first pass, the capital improvement costs for just the treatment plant comes to almost 97 percent Federal.

Mr. ROE. You are using innovative technology section of the bill is what you are saying?

Mr. SALOMONE. That is correct so that is only a 3-percent component for the town of Poolesville.

Mr. ROE. How is it going to raise that?

Mr. SALOMONE. There is a bond.

Mr. ROE. There is a bond issue, but you have redress under the law, the bond issue. Has the bond issue already been passed?

Mr. SALOMONE. There was not a bond issue in this town.

Mr. ROE. How are they going to——

Mr. SALOMONE. They applied for a loan.

Mr. ROE. From the State?

Mr. SALOMONE. From the State, and they received the loan.

Mr. WATSON. You have got to remember that misinformation for the user cost of this thing is the whole key. People in the town are being told it is not going to cost anything, it is all free Federal money, that the town is going to be able to grow. But prudence would indicate that this town is going to be under tremendous financial strain once this humongous plant is implemented. It is good to have a 20-year growth cycle but you should not use a treatment technology that will not allow you to grow without having the full 20-year cycle in place when you first start. You can expect no economies of scale, because you are only going to have 200,000 gallons a day going through a plant designed for 600,000 gallons a day. This is based on the water supply in the town of Poolesville. That may be the most we will ever be able to grow and we will be stuck with that monument. Why this has happened is that the law does not allow you to look at water, sewer, inflow, and infiltration and other areas of the environment all in one piece. The sewer people will not listen to us. They—EPA—say we are not looking at water. Water authorities—HUD—will not look at the sewer problems.

Mr. SALOMONE. Yes; that is a very important point. They would not add the water component to the user charge that they used to review the affordability.

Mr. MOODY. And your State environmental agency, whoever it is that sets these priorities, they are not willing to look at it as a total system either?

Mr. SALOMONE. No; they are not

Mr. WATSON. John Milner is in charge of that.

Mr. ROE. Where does it stand now?

Mr. SALOMONE. The report from the Inspector General's office, the EPA, has suggested that they should go ahead. Consequently permits should be issued shortly by the State of Maryland and the bid documents will go out subsequently.

Mr. MOODY. You cannot convince the local decisionmakers of your case?

Mr. SALOMONE. When the information is so sketchy and misinformed, it is very difficult.

Mr. MOODY. And you are saying that misinformation is being abetted and increased by EPA itself?

Mr. SALOMONE. They are certainly supporting the positions that began with the town of Poolesville, their engineer, and the State of Maryland.

I should also point out that, like many other local governments, the town board are composed of laypersons. Consequently, they do not have the technical expertise to understand the differences and to be aware of the problems we are talking about today.

Mr. MOODY. But no one has given them a future cost estimate that has the numbers that you have indicated? No one has shown them that? I mean lay people can understand dollars and cents.

Mr. SALOMONE. Twenty five cents per thousand, would you get upset with 25 cents per thousand? That is the only cost figures that they have provided, 2 years after the public hearing.

Mr. MOODY. What do you think the number really is?

Mr. SALOMONE. I think the tripling that we have seen in Ocean County, N.J., I think is very realistic, and as a lower bound, perhaps it is double.

Mr. MOODY. So 50 to 75 cents would be your guess?

Mr. SALOMONE. No. I would say if we are paying $5.60 per thousand gallons we are going to see something over $10 per thousand when it is all done, and we have a system that is complete with respect to water supply, collection system, and the treatment process.

Mr. MOODY. But you cannot get anyone in official position to issue that number and say that is the estimate?

Mr. SALOMONE. That is correct.

Mr. MOODY. But based on your own professional knowledge, is that where you get the number?

Mr. SALOMONE. I have experience in this area, yes. However, I might add that my role in this effort has been more as an investigative reporter because the information that I am communicating to you today is in published documents, and I simply put the story together and the construction grants program does not have the mechanism to put the story together. There are too many people looking at very small parts of the project but no one has the overview of the system. But the end product, namely the user charge system, is a result of the full picture and it usually occurs when it is too late.

Mr. ROE. Well, I think, if I can offer the suggestion, we are working on revising the law. That is the purpose of your testifying.

On the other hand, you have a situation existing that is imminent unless somebody does something, and it seems to me that we know that we will finish the hearings by the 17th or thereabouts of November, and we have to write this bill. So before this bill comes out to the floor, probably it will not be until February or March of next year. I think the Senate is working along paralleling our efforts too, as you know.

So that remedy that we may come up with, and understand what you are talking about, in legislative law is going to take time to finish and put into law. In the meantime, your freight train is going down the track, so to speak. It seems to me that if you have gone through those particular situations, that every level of government, that your only course is to go into the courts.

Mr. SALOMONE. I understand. However, attempting to get us off that track is not really the purpose why we are here today.

Mr. ROE. No, I understand that.

Mr. SALOMONE. We feel that this is unique because you can observe the construction grants program step by step in that backup documentation, and it will give our lawmakers an opportunity to see why it is not working rather than just merely talking generalities.

Mr. ROE. And that is how we are looking at your testimony. Very fine.

Any further questions?

Well, you know what you will have to do and we know what we are going to do.

Mr. WATSON. Mr. Roe, one quick thing.

I think the fact that you have, I think it is 1.75 percent affordability requirement in the construction grants program which says, if we look at the median income of the town, the costs per citizen shall not exceed 1.75 percent of the median income. That is fantastic. That should be there and I fully support it. But you can just see through many, many small towns, local engineers, local businessmen get together and they subvert the affordability analysis as we have seen in the town of Poolesville, we have seen in Thayne, Wyo., and the real costs do not seem to come out until the final bills hit the citizens.

Mr. ROE. Well, it certainly should be a point of view where EPA ought to be dealing with the true cost because they are the ones that are providing. There is the point Mr. Salomone was making, they are providing this Federal money involved. And, you know, we are legislators and we set the law and we expect them to follow the law. And they are to look to the cost-benefit ratios as they go through and certainly if the public hearings are going to be of any value at all, the facts that should be presented in public hearings are the facts as they are, not some misguided estimates. And I think that is the point you are making and very well so.

Mr. WATSON. We are extremely fortunate to have Larry Salomone, who has had tremendous private experience in civil engineering, he is working toward his doctorate in civil engineering. Because of his background, we have been able to draw on water quality experts and water quality data that is not normally available. We have been able to draw on water supply data that is not normally available. All this documentation. And we are extremely lucky that we had competent people to support us, and still we are seeing EPA and the law as it is written, allowing the town to go ahead on this collision course of disaster, saying this is the way to go. The businessmen want the growth—600,000 gallons per day sure, is more than 200,000 gallons per day. This is our big chance. You see this in the local newspaper, this is our big chance. If this money goes away, we are never going to get it back. That is the carrot. You give the people this carrot. If you say no, you are going to lose $2 million. They are afraid to come out and say hey, maybe there is a better way.

Mr. ROE. If the gentleman would yield?

I would agree with what you are saying, having been a mayor of a community myself, so I realize that on both sides of the aisle.

But what I am trying to get across to you, that in this instance, this system has not worked in the direction in which the citizens would like to have it work, and they have not got the redress. The only redress they have is to go back to the courts, that I can see.

If there had been 25 percent bonding involved, then you have to have local approval of a bonding ordinance, you could have forced it to a referendum. But as you are saying, if it is an innovative technology, then 97 percent of the money is being provided through Federal, and the balance through the State, and you are denied the right to speak to the issue as citizens of the community, through the usual process. It is a very unique situation.

Mr. WATSON. The real issue would be easy. It could be very easy for us to get a referendum if the true operating cost of this plant were made known. EPA has failed us, and the law has failed us, to allow a situation where they can come out to the people and tell them it is going to cost 25 cents per thousand, then allow them to go down the pike, not realizing that it is a disaster.

That is where the error is in the construction grants program.

Mr. ROE. Well, I am not so sure that there is an error. This is a very unique case. There is not that many. There might be other problems in different areas of the country, but when you start saying 10, 15, 20,000, 50,000 cases, and you have 2 or 3,that is something, you have a very unique situation. But out of this testimony comes another issue, and you have stated that, and so did Mr. Salomone, and the point of view of the high level flow is a million gallons a day, and we are spending money to build plants that are designed, in effect, to do one of two things.

Either they are oversized to accommodate the infiltration, and/or they just open the floodgates, and let it run through the plant. So something has to be done to tighten up that section.

It would seem to me that EPA, et al., is responsible, and would have looked at that issue. We are coming back and saying that we have been fighting with the other side of the Capitol on that issue, and other people, we are coming back and saying that infiltration and elimination of combined sewers, and the other elements that we discussed today, are an integral part of the sewage disposal system, and ought to be considered as an engineering problem.

It is not a question of a figment from somebody's imagination, but unfortunately we are not dealing with that many engineers around.

So what I am trying to get across to you is I do not see any remedy, other than our feeling sorry for each other at this moment. We would like to know how to help you, but we do not have the remedy at our fingertips at the moment.

It seems to me that if you are going to remedy this issue locally, you have to force it to referendum, or go to court.

Now, if you cannot get the people to support you in the consent of the Government, then the case stands unto itself.

We, on the other hand, have benefitted from your testimony because you have given us a case history that we have to look into, and you have given us some new thoughts and ideas, as to what we should be writing into law, and that we should be considering before any of these grants are made.

See what I am trying to get at?

Mr. MOODY. Would the Chairman yield?

You can see how it is hard for us to write a law that would head off every instance of local poor decisionmaking. It is hard for us to pierce the corporate veil, so to speak, to go into second guess every decision that is being made, and you are coming up with a case that appears to be very poor decisionmaking, but you say it is being abetted by misinformation from EPA, and that is a concern of mine.

You also say that the Inspector General agrees that this thing is going to cost a lot more. Why do you not close the loophole, and

cannot the Inspector General acknowledge that they can be plugged in somehow?

Mr. SALOMONE. In practice, if you would examine the staff of the Inspector General, it is quite small. Consequently, what I have observed in their review, it took 5 months, in your copy, Mr. Chairman, there is a copy of the report, and it is approximately seven pages. They have essentially taken the previous report issued by the State, and the town engineer, and just passed it along to us, and as you see, they did not even use their letterhead, the authorship of the report is not clear.

If that report gets separated from the letter of transmittal, there is no way to know the author of that document. So it is a very poor report professionally, and it just perhaps, due in part to the lack of time on the part of these individuals that had to prepare the report.

I think that opens up a very important point, that what I have observed in the construction grants program, both in Poolesville, as well as in other towns, is that when the town residents see that they are getting a Federal grant, they believe the EPA is protecting their interest from a technical viewpoint, in terms of the selection process, and the affordability aspects.

But yet when you take a closer look, the EPA is actually relying on the engineering consultants for the town, and the town board for making the decision.

Mr. MOODY. Which has an ax to grind.

Mr. SALOMONE. That is correct, and in many small towns, you are also attracting engineers who are very dependent on the local business for their livelihood, so you are getting the local viewpoint also.

Mr. MOODY. You are getting a local viewpoint, which is not objective.

Mr. SALOMONE. That is right, and also experienced in terms of the national problem, perhaps. So consequently, the bottom line is that no one is really looking at the overview in terms of need, approach, and cost.

Mr. MOODY. Well, since we cannot second guess local decisions, effectively at all, we are just trying to write generic legislation on the assumption that local decisionmaking will be generally good.

Can you come up with some specific suggestion how the law should handle, maybe on a fail safe way, a situation as rare as it is, as you describe it, what would you suggest as a law, the generic law, read to avoid what mess you feel you are in?

If you do not have can answer now, maybe you can communicate with us later.

Mr. SALOMONE. I will indicate that it involves establishing the need, and having a major component of the law being the balance, an analysis of cost versus benefit. And that they be required to prove that there will be environmental gains in this creek, or whatever surface water they are discharging into, because if you are going to spend millions of dollars, and not see millions of dollars worth of environmental benefit, then perhaps another approach is the more prudent way to go.

Mr. MOODY. You are aware that the environmentalists have stoutly resisted cost-benefit analysis on the ground that its method-

ological loopholes, and ends up being quite subjective, and also it is extremely expensive to administer properly, and it takes a lot of resources to analyze. So they prefer instead the system, the fishable, swimmable, standards approach, and now we are talking about cost-beneficial, in a sense of minimizing cost to research standards. They do not ask us to make the standards a variable, to which is what you are asking, really.

Mr. SALOMONE. Yes, and I believe that is important, because regardless of how the financial mechanism you eventually establish, loan versus grant, unless you are using those funds effectively, you will never have enough money to clean up our Nation's waters.

So it is important to have a component in the program that establishes the water quality of some of our major surface waters, so we know how well we are doing, and where we will go, as we add effluent to the surface waters, and without bringing the pendulum back from the early days of the EPA, when we looked at it from that viewpoint entirely, unless we bring that pendulum back, we will be spending money for surface waters that do not require it. That is the need.

Mr. MOODY. Your generic suggestion would be to reinstitute cost-benefit calculations, is that how you would solve your—is that the legislative recommendation that nets out of all of this?

Mr. SALOMONE. That is the first part of it. The second part would involve the approach, and that is not necessarily going to an advanced treatment process, when a secondary treatment alternative is more compatible with the town, in terms of operation and maintenance and compatible with not diminishing the water quality of the creek.

Mr. MOODY. You are saying tertiary treatment is unnecessary?

Mr. SALOMONE. I believe so. When you look at the water quality of this creek, when there is water in it, the only reason you have to go to a more advanced system other than the lagoon that we have now is when the flows are at a 20 garden-hose-level.

Mr. MOODY. So there should be some volume trigger within those standards perhaps?

Mr. SALOMONE. Yes, most definitely.

Mr. MOODY. That is an important suggestion, I think worth looking at.

Mr. SALOMONE. And I might add from a generic point of view with respect to the costs, the user charge system should be required to have all the components in it so that when we are looking at the affordability analysis as they do before they approve these types of projects, it has everything it will take to make it a viable system and your point about having collection system, treatment process and water availability should be part of that too because you cannot design a plant unless there is potable water in the area. So the cost to provide those components should be included in the user charge system, and that will help result in representative cost figures.

Mr. MOODY. So you have three. Would you mind writing us, at least me, I would like to see it, a letter just briefly outlining those three generic suggestions now that we have refined what you are getting at. I think your testimony is interesting and extremely provocative. But if you could boil that down to those three points, with

backup argumentation, I would really appreciate seeing in writing the crystallization of what you are saying.

Mr. SALOMONE. I think that the last two pages of my testimony reiterate that, those points, and the documentation provided to the subcommittee would be the backup for those recommendations also. I can supplement it if you feel it would be helpful.

Mr. MOODY. It would be helpful to me if you would just focus on those three things only and give us a brief letter.

Mr. SALOMONE. Yes.

[The following was received for the record:]

LAWRENCE A. SALOMONE
19108 Hempstone Ave.
Poolesville, MD 20837

November 13, 1983

Congressman Jim Moody
1721 Longworth Building
Washington, D.C. 20515

Dear Congressman Moody:

Thank you for your interest in my testimony before the House Subcommittee on Water Resources on November 1, 1983. As you requested, I have prepared an addendum to my testimony that focuses on:

1. Cost - Benefit Analysis,
2. Volume trigger for receiving waters within existing standards,
3. User Charge System required by the Clean Water Act.

The backup argumentation for the generic suggestions that I stated in my testimony on November 1, 1983 is also provided in the addendum.

In preparing my response, I have chosen to emphasize two fundamental points that are essential to achieving the overall goal of the Clean Water Act. They are:

1. The restoration and maintenance of our Nation's waters is an engineering problem that requires efficient and cost-effective <u>systems</u> not just efficient and cost-effective treatment <u>plants</u>;

2. Private and public funds available to restore and maintain our Nation's waters are limited. Consequently, a balance must be achieved between the cost to improve the parts of the wastewater treatment system and the environmental benefit to the receiving surface waters. Otherwise, some environmental hazards will exist uncorrected because of the lack of available funds.

The addendum is divided into the following sections:

1.0 General
2.0 Statement of Problem
3.0 Example of Problem
4.0 Discussion of Solutions
5.0 Recommendations

Based on the argumentation provided in these sections, the generic statements that are suggested for amendments to the Clean Water Act are:

1. Category A - Cost-Benefit Analysis
   A1. "Water quality standards for a receiving water shall be consistent with the size, flow and uses of the receiving water,"

A2. "Water quality monitoring programs shall be established to assess progress towards achieving the goal of the Clean Water Act, to administer priority stream segments and to establish a priority system for restoring and maintaining the Nation's surface waters,"

A3. "Funds appropriated under the Clean Water Act shall not be awarded for a wastewater treatment plant until the necessary collection system improvements are completed if the collection system improvements are needed to provide effective and economical operation of the wastewater treatment plant."

A4. "Flexibility in establishing water quality standards and in defining secondary treatment shall be permitted if undetectable environmental impact will result."

2. Category B - Volume Trigger for Receiving Waters
"For purposes of the Clean Water Act, the term, 'navigable waters' shall exclude waters that do not support a diversified fish, shellfish or wildlife population and have a ten-year, seven-day low flow of less than 0.5 cubic feet per second."

3. Category C - User Charge System Required By the Clean Water Act
"The user charge system required by the Clean Water Act shall reflect all the components that will be necessary to maintain the financial integrity and self-sufficiency of the wastewater treatment system."

I hope that this additional information meets your needs. If I can be of any further assistence, please contact me.

Sincerely,

Lawrence A. Salomone

Lawrence A. Salomone

Enclosure

cc: Mr. Joseph A. Italiano
Editor,
Committee on Public Works and Transportation
Room 2165 Rayburn House Office Building
Washington, D.C. 20515

Congressman Robert A. Roe, Chairman
Rayburn House Office Building
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Washington, D.C. 20515

19108 Hempstone Avenue
Poolesville, Maryland 20837

Addendum
Statement of

Lawrence A. Salomone
Poolesville Area Citizens

For The

House Committee on Public

Works and Transportation

Subcommittee on Water Resources

On The Construction Grants Program

Of The Clean Water Act

November 1, 1983

Addendum

Statement Of

Lawrence A. Salomone
Poolesville Area Citizens

Before The

Subcommittee on Water Resources
House of Representatives

November 1, 1983

1.0 General

This addendum supplements the testimony of Lawrence A. Salomone before the Subcommittee on Water Resources, House of Representatives on November 1, 1983, and it should be inserted after line 2961 on page 126 of Mr. Salomone's testimony. It is prepared in response to a request made by Congressman Jim Moody during the hearing. The addendum focuses on generic suggestions made as part of the testimony of Mr. Salomone that involved:

1. Cost-Benefit Analysis,
2. The problems associated with constructing a treatment plant before major inflow/infiltration problems in the collection system are solved,
3. Volume trigger for receiving waters within existing standards, and
4. User charge system required by the Clean Water Act.

The generic suggestions and the backup argumentation that were requested are provided in the sections that follow.

2.0 Statement of Problem

The overall goal of the Clean Water Act is "to restore and maintain the chemical, physical and biological integrity of the Nation's waters." To achieve this goal, efficient and cost-effective wastewater treatment systems are required.

The Clean Water Act must reflect the fact that the restoration and maintenance of our Nation's waters is an engineering problem that requires efficient and cost-effective systems not merely efficient and cost-effective wastewater treatment plants. Wastewater treatment systems consist of:

1. Potable water that becomes wastewater,
2. Collection system for wastewater,
3. Treatment plant to process wastewater, and
4. Surface water to receive effluent from the treatment plant.

The efficiency and effectiveness of the wastewater treatment system is dependent on the efficiency and effectiveness of its components. Also, it is important to understand that the funds available to improve our Nation's wastewater treatment systems are limited.

Therefore, a balance between the cost to improve the parts of the wastewater treatment system and the environmental benefits to the receiving surface water must be achieved. Otherwise, some environmental hazards will exist uncorrected because of the lack of available funds. Some of the post mortems performed on towns with federally-funded defective treatment plants and/or long-term financial burdens clearly show that these fundamental points are not adequately reflected in the law and understood by the EPA and the States which are asked to enforce the law.

3.0 Example of Problem

The Poolesville, MD case history illustrates the importance of using a systems approach to improve wastewater systems and of achieving a balance between the cost to improve a wastewater treatment system and the environmental benefit to the receiving water. Consider the existing Poolesville Wastewater Treatment System and the deficiences in the approach funded by the EPA and the State of Maryland:

Potable Water Supply

Description - There is a shortage of available potable water to meet the needs of the Town of Poolesville (Pop. 3500). The Town needs 3 to 5 wells and a one million gallon water storage tank to meet the design flow of the treatment plant funded by the EPA and the State of Maryland. All efforts by the Town Board to obtain federal funds to expand the water supply system have failed.

Approach - The EPA and the State of Maryland jeopardized further the health and safety of current residents by funding a treatment plant with its demand for twice as much water as is currently available. Also, the EPA and the State of Maryland refused to include the costs to expand the water supply system in the affordability analysis required for the new treatment plant. The affordability analysis was therefore performed using unrealistic cost figures.

Collection System

Description - The Poolesville collection system has a major inflow and infiltration problem (i.e., 1 million gallons per day during severe storms -- three times the normal flows to the existing treatment plant). The ability of the existing treatment plant to meet its effluent discharge limitations is affected significantly by the inflow/infiltration problem. The cost to rehabilitate and upgrade the collection system has been estimated to be $2,447,000.

Approach - The new treatment plant has been designed for an 85% reduction in the inflow/infiltration rate. Also, the new treatment plant is planned for construction

before the major inflow and infiltration problem of the collection system is solved. By not requiring that the collection system improvements be made before the new treatment plant is constructed, the EPA and the State of Maryland may find that the new treatment plant is oversized if the reduction in the inflow/infiltration rate is achieved or undersized if the reduction in the inflow/infiltration rate is not achieved.

Treatment Plant

Description - The Town of Poolesville is currently using a lagoon to treat its wastewater. Improvements to the existing lagoon to satisfy the required effluent discharge limitations were recommended by the previous engineering consultant to the Town. This approach was less costly (i.e., less costly to build and less costly to operate and maintain).

Approach - The EPA and the State of Maryland supported an inappropriate technology for the Poolesville situation - a sequence batch activated sludge system. The selection of an activated sludge treatment process is too sophisticated and too costly to operate and maintain for a small town such as Poolesville, MD. Furthermore, the environmental benefits to the receiving water, Dry Seneca Creek, have not been demonstrated when an activated sludge treatment process is used.

Receiving Surface Water

Description - The Poolesville treatment plant discharges its effluent into an intermittent creek named Dry Seneca Creek. Dry Seneca Creek as the name implies is dry during periods of drought. During non-drought periods, seven years of water quality data show that its water quality is above existing water standards. Background pollutants from neighboring farms and septic systems (non-point sources) cause at times the water quality to be lower upstream than downstream from the existing Poolesville treatment plant. This suggests that the water quality of Dry Seneca Creek may not be significantly improved by constructing a new treatment plant in Poolesville, Md. A large imbalance exists between the high costs of the new tertiary treatment plant and the non-existent or minor environmental benefit to Dry Seneca Creek.

Approach - The EPA and the State of Maryland ignored the size, flow, water quality and uses of Dry Seneca Creek when it established effluent discharge limitations for the Poolesville treatment plant. It gave equal priority to Dry Seneca Creek and the Potomac River and set a design condition based on a theoretical model that was inappropriate for an intermittent creek. For the ten-year, seven-day low flow condition the waste

stream from the Poolesville plant constitutes essentially all of the flow for the creek. The goal of fishable/swimmable for Dry Seneca Creek during the ten-year, seven-day low flow condition is meaningless, and it results in a more costly, inappropriate technology to be used in Poolesville, MD. If the EPA and the States are to get the most environmental benefit for the dollar and prevent environmental hazards from existing because of the lack of funds, this imbalance(among the use of the creek, environmental goal and cost)cannot be tolerated.

4.0 Discussion of Solutions

In 1972 Congress made the fundamental decision that water pollution control efforts should be based primarily on technology-based effluent standards. Water quality standards, reflecting quality of receiving waters, were relegated to a secondary role. While a technology - based standard is easier to administer, this approach, that does not consider the size, flow, water quality and uses of the receiving body of water, can result in the costs and environmental benefits being significantly out of balance. This imbalance can cause environmental hazards to exist because of the lack of funds.

The issue should be seen not in terms of whether water quality standards should replace technology - based standards but rather in terms of the extent to which the two basic philosophies can complement each other. Considering this and the importance of using a systems approach to restore and maintain the integrity of our Nation's waters, the following comments are made for each of the parts of a wastewater treatment system:

Potable Water Supply

A test should be added to ensure that potable water is available to meet the design flow of the proposed wastewater treatment plant. If sufficient water is not available, but the water supply will be expanded to meet the design flow of the proposed treatment plant, the costs to expand the water supply system should be included in the affordability analysis and the user charge system required by the Clean Water Act.

Collection System

In Poolesville, Md and in many regions of the Nation, the major problem in meeting local water pollution needs lies not in treatment plant construction but in upgrading their sewage collection systems. EPA estimates that leakage into collection pipelines constitutes 25% of the total existing flow into the Nation's treatment plants. Therefore, sewer rehabilitation, combined sewer overflow correction and sewer collection systems should remain as categories for funding under the Clean Water Act. Also, necessary collection system improvements should be made before the construction of a treatment plant if the improvements are needed to provide effective and economic operation of the proposed treatment plant.

Treatment Plant

Considering the small percentage of projects funded under the Construction Grants Program that are actually complete and contributing to water quality improvement, a test should be added to ensure that the costs and benefits of using the proposed technology are in balance. The Clean Water Act should be amended to provide that compliance orders shall include a demonstration that the environmental benefits of using the proposed technology are in line with the costs (i.e., the costs to build and the costs to operate and maintain year after year).

Receiving Surface Water

The 1972 Water Pollution Control Act called for all the Nation's streams to be "fishable and swimmable where achievable" by 1983. In practice, the "where achievable" phrase is ignored. The EPA and the States should be required to make the right selection of stream uses and that these uses are realistic and attainable uses.

The size, flow and uses of the receiving body of water should be considered in setting effluent discharge limitations and establishing priority lists for federal funds appropriated under the Clean Water Act. For example, intermittent surface waters should be excluded from the Clean Water Act unless the surface water supports a diversified fish, shellfish or wildlife population.

Water quality data should be used, if available, and good water quality monitoring programs should be established to keep decision makers from making costly and inappropriate decisions based on the lack of information or on misinformation. The EPA and/or the States should be required to survey streams to identify priority surface waters.

Accountability

Future costs of wastewater treatment plants are frequently underestimated. To correct this problem the user charge system and the affordability analysis required by the Clean Water Act should reflect all the components that will be necessary to maintain the financial integrity and self-sufficiency of the wastewater treatment system. The user charge system and the affordability analysis should reflect: the debt service and the operation and maintenance (O&M) costs to expand the local potable water system to meet the design flow of the proposed treatment plant, the cost of collection system improvements, remaining debt service for old treatment plant, debt service and O&M costs for new treatment plant, the cost of sludge disposal and the cost to monitor the water quality of the receiving surface water.

The sequence for funding remedial steps to improve and upgrade the various parts of the wastewater treatment system should be an important consideration when determining eligibility for funds appropriated under the Clean Water Act. Funding priorities should be established using a systems approach.

5.0 Recommendations

Based on the argumentation provided in the previous sections, the generic statements that are suggested for amendments to the Clean Water Act are:

1. Category A - Cost-Benefit Analysis

   A1. "Water quality standards for a receiving water shall be consistent with the size, flow and uses of the receiving water,"

   A2. "Water quality monitoring programs shall be established to assess progress towards achieving the goal of the Clean Water Act, to administer priority stream segments and to establish a priority system for restoring and and maintaining the Nation's surface waters,"

   A3. "Funds appropriated under the Clean Water Act shall not be awarded for a wastewater treatment plant until the necessary collection system improvements are completed if the collection system improvements are needed to provide effective and economical operation of the wastewater treatment plant,"

   A4. "Flexibility in establishing water quality standards and in defining secondary treatment shall be permitted if undetectable environmental impact (degradation) will result."

2. Category B - Volume Trigger for Receiving Waters

   "For purposes of the Clean Water Act, the term, 'navigable waters' shall exclude waters that do not support a diversified fish, shellfish, or wildlife population and have a ten-year, seven-day low flow of less than 0.5 cubic feet per second."

3. Category C - User Charge System Required By The Clean Water Act

   "The user charge system required by the Clean Water Act shall reflect all the components that will be necessary to maintain the financial integrity and self-sufficiency of the wastewater treatment system."

This concludes my statement.

Mr. ROE. We want to thank you very much for your valued testimony. It has been enlightening to the committee.

Mr. SALOMONE. We really appreciate the support you have given.

Mr. ROE. And you have some work that you have to do now.

Our next witness is Mr. Robert R. Perry, assistant executive director, Water Pollution Control Federation, accompanied by Mr. Andrew Stevenson, manager, public affairs.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

Prepared Statement of Robert R. Perry, Assistant Executive Director, Water Pollution Control Federation

INTRODUCTION

Good morning, Mr. Chairman, and members of the water resources subcommittee.

It is an honor to appear before you this morning regarding amendments to the Clean Water Act. The Water Pollution Control Federation (WPCF) appreciates your interest in its viewpoints.

Mr. Andrew Stevenson, our government affairs manager, is with me this morning.

REVIEW OF EARLIER TESTIMONY

On August 2nd, WPCF member Paul Freese appeared before this committee to express support for programs authorized by the Act. Table 1 of this statement summarizes WPCF's recommendations in each case.

During his testimony, Mr. Freese was asked several questions by Representatives Ferraro and Stangeland. Detailed answers to those questions were supplied, following hearing. Extra copies of those replies were presented to your staff earlier this morning. We have taken the liberty of highlighting some of the statements in those two letters because I will refer to them in my concluding remarks.

NEW POINTS FOR THE COMMITTEE'S CONSIDERATION

This morning I would like to briefly address 4 issues. I will explain a little more fully WPCF's position on the 2 questions of urban and rural nonpoint source pollution. I will also describe the Federation's position on the industrial pretreatment program. And finally, I will close with a suggestion about the municipal construction grants program.

Urban Nonpoint Source Pollution

For many years, congressional supporters of the clean water program have been concerned about the significance of urban nonpoint source pollution. There are two forms of urban NPS: stormwater flows and combined sewer overflows. Both discharge large quantities of pollutants into receiving waters.

Successive U.S. EPA needs surveys have refined the estimated costs of controlling stormwater. Table 2 shows EPA estimates for controlling discharges from combined sewer overflows and from separate storm sewers. By any measure, conventional treatment of stormwater would require an extremely large sum of money...approximately 4 times the cost of our remaining conventional needs.

Congress needs to know where urban NPS is a serious national problem, and how to best control it. We are still waiting for conclusive answers to all of these questions. At the present time, federal funds and programs supporting urban NPS control match the relative national importance of the problem.

U.S. EPA's Nationwide Urban Runoff Program provides 3 reasons why more information on urban NPS is needed:

1. No definite yardstick. There are no formal "wet weather" water quality criteria for stormwater pollutants.[1]

2. No concensus on how to use a yardstick. Individual analyses using potential measures of water quality have not yet been completed. We do not know if the measures are valid or accurate.[2]

3. No way to make reliable generalizations. It is not yet possible to generalize from the few studies that have been done, because the important stormwater factors vary greatly from site to site.[3]

Highlights of the preliminary NURP report are summarized in the August 2nd WPCF statement. Highlights of the draft version of the final report are contained in Table 3 of this statement. They support the conclusion that urban NPS merits further study.

In view of these points, WPCF suggests that this committee authorize continued research into the urban nonpoint source pollution issue and defer any legislative changes until we have answers to three questions:

Where is urban stormwater a pollution problem?
When is it a problem?
What can be done to correct the problem?

Rural Nonpoint Source Pollution

Three years ago, WPCF examined 3 major sources of rural nonpoint source pollution: (1) nutrients from conventional farming; (2) sediments and salts from irrigated farming; and (3) sediments from commercial forestry operations. After examining the evidence, WPCF concluded a national program of control could not be effectively developed without more information on the phenomena. Copies of the position were supplied to this committee on August 2. We believe the conclusion is still valid today.

With few exceptions, rural nonpoint sources are not susceptible to "end-of-the-pipe" treatment. Most controls have to be applied by the people whose activities create this type of pollution--tree harvesters, farmers, ranchers,

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[1] Preliminary results of the Nationwide Urban Runoff Program (hereafter cited as NURP); Volume I; March 1, 1982; U.S. Environmental Protection Agency; Page 4.5 ff.

[2] NURP, Volume I; Chapters 4 and 5.

[3] NURP, Volume I; pp. 4-5 through 4-7.

and others. Therefore, successful control programs demand much more person-to-person communication than point source programs. Instead of dealing with one metropolitan treatment authority, it is necessary to deal with many individuals.

Federal agencies can and do provide valuable technical assistance. They also help finance research and demonstration projects. Section 208(j) authorizes the Secretary of Agriculture to conduct such a program, for example. WPCF suggests that no further federal initiatives are needed at this time, given the range of programs that are already operating.

The state of our knowledge about rural nonpoint sources is summarized in the conclusion to our position paper:

> "NPS pollution may be the most difficult form of surface water pollution to control. Our knowledge of when and where it makes serious contributions to local water problems is spotty. It is hard to construct useful generalizations about sedimentation or pesticide problems because the unique characteristics of each situation seem to determine the solutions posed for each case. Part of our overall problem with non-point-sources is ignorance: we need to know more about the pollutants, how they move, what they do while they are moving. We are not completely sure how to measure them. We do not agree on how they can be modeled mathematically. Another part of our problem is social, or perhaps political: we do seem to know enough to say at this point that building treatment facilities is not an economical option."

One other aspect of the rural nonpoint source problem deserves this committee's consideration. In the Federation's August 2nd testimony, we stated that there are many situations in which the potential benefits of NPS control are mutually exclusive. The fact that you have to trade one benefit (or set of benefits) for another adds complexity to the problem of creating a federal control program. Who decides what benefits to promote and which to forego? Here are two examples of the kinds of trade-offs that have to be made.

Groundwater recharging is one benefit. Slowing the rate of "eutrophication" or aging in lakes, ponds, and streams is another. Still a third benefit is maintaining a varied streambank environment of flora and fauna for recreation purposes. Yet, not all of these can be obtained in each case where nonpoint source controls are needed.

Recharging groundwater requires reducing the amounts of surface runoff that travel overland, through a watershed, and into a stream. Reduced surface runoff means streambank environments that depend on water from this source will change. It can also mean that eutrophication in the receiving waters will be faster because the rate and volume of replenishment from overland flows has decreased. Thus there are situations in which a choice can be made to <u>either</u> recharge groundwater <u>or</u> control eutrophication and promote <u>streambank</u> ecology. The choice here is best made at the local, regional, or state level, not at the federal level.

The second example is a bit more complicated. In certain areas, irrigated agriculture depends on controling the level of salts in soils and streams. If the level of salinity in the stream is a problem, control can be effected by making sure more of those salts stay in the soil.

But keeping more salts in the soil may reduce the yield of the crops being grown, if they are sensitive to salt. Controlling the flows that return to a stream from irrigated agriculture may require changing the crops grown in an upstream area so that crops grow" in a downstream area can continue to flourish.

As in the first example, this kind of trade-off is a difficult one to make. It involves the interests of upstream and downstream beneficiaries. Where acutely important, it usually leads to litigation if negotiations do not produce a satisfactory solution. I submit that decisions of this type cannot be made productively at the federal level, involving as they do questions of state water law.

I have used these examples to illustrate the complexity of the rural nonpoint source problem with which it is very difficult to deal. Looking at rural nonpoint source pollution in the broadest perspective, it appears that the most effective control programs will have to be fashioned from the bottom up. That is, they will be crafted out of agreements at the local, regional, and state level, rather than being imposed from the federal level.

Therefore, WPCF recommends continuing the assistance now provided to states. State agencies are best situated to develop the actual controls or to encourage their development at lower levels of government.

INDUSTRIAL PRETREATMENT

This committee has followed the difficult history of industrial pretreatment since 1970. Implementing pretreatment programs that meet the requirements of federal law has been extremely difficult. In fact, one of the most comprehensive pretreatment programs was actually in place and operating before the 1972 Clean Water Act was passed. So the law may have complicated things. I am referring to the program designed and operated by the East Bay Municipal Utility District in Oakland, California.

Why has this provision of the law been so difficult to implement? You have testimony from a long list of witnesses regarding the problems they have had to wrestle with while working on the pretreatment issue. I cannot say that WPCF has a miracle solution to offer you this morning. Instead, I wish to suggest that this committee consider some fundamental revisions to the law. If enacted, these revisions could remove many of the stumbling blocks to industrial pretreatment.

Once again, the Federation's suggestions are based on a position paper adopted in October of 1981. Here are four steps that Congress could take to simplify the pretreatment concept and speed the development of local programs:

No. 1: Create a separate class of direct dischargers for municipal treatment agencies. Apply the principle of parity among dischargers to that class, as compared

with other classes of direct dischargers, rather than to industrial customers of POTWs.

No. 2: Authorize POTWs to develop their own pretreatment standards for industrial customers. Do not require federal standards for indirect dischargers.

No. 3: Authorize POTWs to treat existing and future industrial customers equally, rather than requiring different control levels for new dischargers.

No. 4: Revise enforcement and performance requirements in the law to lay those responsibilities squarely on the shoulders of the municipal authority. Local ordinances for treatment system discharges can and will be strengthened to reflect federal concerns. Local authorities will be able to implement their programs in a step-by-step fashion, controlling the most pervasive pollutants first.

I realize the changes WPCF urges you to consider are far-reaching. I know that amending the law on such a controversial issue will be time-consuming. Yet taking such action would, we believe, have a better chance of breaking the 4-way stalemate between regulatory authorities, treatment agencies, industrial dischargers, and environmental activists than continuing on our present course.

FINANCING MUNICIPAL TREATMENT

To conclude the Federation's testimony, allow me to return to the subject of POTW financing. In the Federation, we use this term to refer to the larger context in which the municipal construction grant program operates. We do so because we believe that Congress's original intention in creating the grants program was to make financing long-term POTW operations easier through a short-term program of federal grants.

Our position on POTW financing is explained in detail in the 1981 position paper and the 1982 sequel to that position. In fact, it was a query from this committee in the fall of 1981 that led to the adoption of the 1982 sequel. Thus the members of this panel should be complimented for stimulating WPCF to elaborate on its original position.

After our August 2nd appearance, we sent letters to Representatives Ferraro and Stangeland summarizing the position and our rationale for it. We have taken the opportunity of this testimony to provide each of you with an extra copy of those letters. The copies are highlighted so that you can scan to the paragraphs that state the essence of our position.

As far as we know, only the Water Pollution Control Federation has taken Congress's original intentions seriously enough to address the question, "How do we complete the construction grants program?" I have recently learned that the National Society of Professional Engineers (NSPE) has acknowledged, in principle, that this program should not be a perpetual subsidy to treatment agencies. We congratulate NSPE for taking this position.

Now, however, we find that many of the organizations appearing before this committee support expanding annual authorizations for the grants program. The level of $5.0 billion a year has been mentioned as an ultimate target for funding.

WPCF believes the program needs to be completed. No one should construe our position on the issue to mean that it is not worth additional authorizations.

The grants program should contribute to the long-term goal of creating self-supporting municipal utilities. Pages 2 through 4 of our September 9th letter to Representative Stangeland document the House's concern with this long-term goal. We believe this goal is in the national interest. It focuses efforts within the grants program on a definite end. It describes a state of responsibility and freedom at the local level that is in the best interests of each community. Through this goal the national and the local interests coincide.

IN CONCLUSION

On behalf of the Water Pollution Control Federation, I appreciate the opportunity to appear before this committee and present our thoughts on programs of the Clean Water Act. Should you have any additional questions for us, we would be pleased to submit corroborating material in person or in writing. Thank you very much.

TABLE 1: Synopsis of WPCF Testimony from August 2, 1983

Subject	Recommendation
Research, Development, and Training	Continue authorizations for the programs in Sections 104, 106, 112, and 517.
Clean Lakes	Continue authorizations for the Clean Lakes Program of Section 314.
Municipal Grants	Set a completion schedule for the program. Endorse the concept of self-supporting municipal treatment. Reaffirm congress's originial intention for the grants program to be a "one time only" opportunity.
Areawide Planning	Continue authorizations for regional and areawide planning programs covered by Section 208.
Nonpoint Source Pollution	Rural nonpoint sources: collect and analyze the information we already have. Find out more about potential control programs and techniques. Urban nonpoint sources: support completion of EPA's Nationwide Urban Runoff Program. Decide whether additional legislation is needed on the basis of conclusions from that program.
Effluent Limitations	Extend the promulgation deadline past the current point of July 1, 1984. Base the exact length of the revised extension on the resources Congress directs to spend on promulgation.
Effluent Compliance	Extend the compliance deadlines for direct industrial dischargers. Consider starting compliance period with promulgation date or with permit revision date.
Ocean Discharge Waivers	Consider ocean discharge of effluents as an alternative to full secondary treatment. Make decisions on the basis of environmental merit.
Water Quality Standards	Consider codifying current regulations only after negotiations between Hill staff experts and EPA regulators have been concluded. The prospect for writing mutually acceptable language appears good.
NPDES Permits	Allow partial delegation of the NPDES permit program. Authorize the use of 10-year permits, subject to the standard re-opener clause.

TABLE 2: Urban Runoff Control Cost Estimates for 1983 and 2000 (in billions of dollars)

Need	1983 Estimate	2000 Estimate
Combined sewer overflows	35.74	35.74
Stormwater runoff	93.21	?
Total	128.95	?

Conclusions:

1. The total estimated need for urban nonpoint source control in 1983 is nearly four times as great as the estimated needs for conventional treatment in urban areas. Needs for conventional treatment in 1983 are $32.84 billion.

2. Since the projected population increase in the U.S. between 1982 and 2000 is 279 million people, the growth of urbanized land can be expected to create a Year 2000 estimated need equal to or greater than the 1983 estimate.

Source:

1982 Needs Survey - Cost Estimates for Construction of Publicly-Owned Wastewater Treatment Facilities; U.S. EPA; Office of Water Programs; December 31, 1982; 430-82-009. Page 6, Table "A" and page 8, Table "B." Pages 24 and 38.

TABLE 3: Selected Conclusions from the NURP Final Report (draft)

No. 1	The storm events which produce urban runoff occur about 100 times each year. They are in progress somewhere in the United States about 10% of the time, at any given time.
No. 2	Regarding drinking water degradation, periodic, short-term exceedance of the 50 micrograms per liter criterion could be tolerated without causing significant health risks.
No. 3	Exceedances that last for 6 to 10 hours (the average duration of a storm) and only happen 2 or 3 times a year do not impair the beneficial use of potable water, even though they do violate the official standard.
No. 4	The general effect of urban runoff on bays and estuaries can now be analyzed at 4 NURP sites: Long Island, NY; Washington, DC; Durham, NH; and Tampa, FL. No results are available yet.
No. 5	The effect of runoff on lakes can be analyzed at 8 NURP sites, using the screening and assessment procedures developed by the program.
No. 6	The effect of runoff on groundwater cannot be studied until screening procedures for groundwater aquifiers are developed.
No. 7	Stormwater management planning need not involve expensive technical studies. A general program can be developed with readily available data and outside experts, if needed. Detailed technical studies can then be done for specific issues and problems. Effective local planning can alleviate the need for costly remedial public works.

Source: Final Report of the National Urban Runoff Program; Volume I; U.S. EPA, Water Planning Division; September 30, 1983. Points are taken, in order, from the following pages: 5-48; 5-48; 5-49; 5-67; 5-72; and 6-1.

Mr. ROE. Please proceed.

TESTIMONY OF ROBERT R. PERRY, ASSISTANT EXECUTIVE DIRECTOR, WATER POLLUTION CONTROL FEDERATION, ACCOMPANIED BY MR. ANDREW STEVENSON, MANAGER, PUBLIC AFFAIRS

Mr. PERRY. Thank you, Mr. Chairman.

Good afternoon, Mr. Chairman, and members of the Water Resources Subcommittee.

It is an honor to appear before you this afternoon regarding amendments to the Clean Water Act. The Water Pollution Control Federation appreciates your interest in its viewpoints.

On August 2, WPCF member Paul Freese appeared before this committee to express support for programs authorized by the act. Table 1 of this statement summarizes WPCF's recommendations in each case.

During his testimony, Mr. Freese was asked several questions by Representatives Ferraro and Stangeland. Detailed answers to those questions were supplied, following the hearing. Extra copies of those replies were presented to your staff earlier this morning. We have taken the liberty of highlighting some of the statements in those two letters because I will refer to them in my concluding remarks.

This afternoon I would like to briefly address four issues. I will explain a little more fully WPCF's position on the two questions of urban and rural nonpoint source pollution. And then I would also touch on industrial pretreatment and the municipal construction grants program.

First of all, urban nonpoint source pollution.

For many years, congressional supporters of the clean water program have been concerned about the significance of urban nonpoint source pollution. There are two forms of urban nonpoint source pollution: Storm water flows and combined sewer overflows. Both discharge large quantities of pollutants into the receiving waters.

Successive U.S. EPA needs surveys have refined the estimated costs of controlling storm water. Table 2 shows EPA estimates for controlling discharges from combined sewer overflows and from separate storm sewers. The total cost is approximately $129 billion. By any measure, conventional treatment of storm water would require an extremely large sum of money—approximately four times the cost of our remaining conventional needs.

The U.S. EPA nationwide urban runoff program provides three reasons why information on urban NPS is needed. And, by the way, this latest report from EPA came out on this within the last 2 weeks. It is a final report of the nationwide urban runoff program, and an excellent report.

No. 1, there is no definite yardstick. There is no formal wet weather water quality criteria for storm water pollutants. We establish and measure water quality on the basis—primarily—of dry weather flow.

There is no concensus on how to use a yardstick. Individual analyses using potential measures of water quality have not yet been completed. We do not know if the measures are valid or accurate.

No. 3, there is no way to make reliable generalizations. It is not yet possible to generalize from the few studies that have been done, because the important storm water factors vary greatly from site to site.

In view of these points, WPCF suggests that this committee authorize continued research into the urban nonpoint source pollution issue and defer any legislative changes until we have answers to three questions:

Where is urban storm water a pollution problem?

When is it a problem?

And what can be done to correct the problem?

The second item, rural nonpoint source pollution.

Three years ago, the federation examined three major sources of rural nonpoint source pollution: First, nutrients from conventional farming; second, sediments and salts from irrigated farming; and third, sediments from commercial forestry operations. After examining the evidence, the federation concluded a national program of control could not be effectively developed without more information on the phenomena.

Federal agencies can and do provide valuable technical assistance. They also help finance research and demonstration projects. The Soil Conservation Service, Department of Agriculture agencies, have long had effective programing in rural nonpoint source pollution.

Section 208(j) of the Clean Water Act authorizes the Secretary of Agriculture to conduct such a program, for example. The federation suggests that no further Federal initiatives are needed at this time, given the range of programs that are already operating.

The state of our knowledge about rural nonpoint sources is summarized in the conclusions to our position paper:

> NPS pollution may be the most difficult form of surface water pollution to control. Our knowledge of when and where it makes serious contributions to local water problems is spotty. It is hard to construct useful generalizations about sedimentation or pesticide problems because the unique characteristics of each situation seem to determine the solutions posed for each case. Part of our overall problem with non-point sources is ignorance: We need to know more about the pollutants, how they move, what they do while they are moving. We are not completely sure how to measure them. We do not agree on how they can be modeled mathematically. Another part of our problem is social, or perhaps political: We do seem to know enough to say at this point that building treatment facilities is not an economical option.

What we are saying, Mr. Chairman, is that we feel that the law as it now stands, the Clean Water Act, has sufficient language to do the things that are necessary in rural nonpoint pollution.

Industrial pretreatment. Why has this provision of the law been so difficult to implement? We have been talking about this since 1970, when Congress was first concerned with Public Law 92-500.

You have testimony from a long list of witnesses regarding problems they have had to wrestle with while working on the pretreatment issue. I cannot say that WPCF has a miracle solution to offer you this afternoon. Instead, I wish to suggest that this committee consider some fundamental revisions to the law. If enacted, these

revisions could remove many of the stumbling blocks to industrial pretreatment.

Once again, the federation's suggestions are based on a position paper adopted in October 1981. Here are four steps that Congress and/or EPA could take to simplify the pretreatment concept and speed the development of local programs:

First, create a separate class of direct dischargers for municipal treatment agencies. Apply the principle of parity among dischargers to that class, as compared with other classes of direct dischargers, rather than to industrial customers of POTW's.

Second, authorize POTW's to develop their own pretreatment standards for industrial customers. Do not require Federal standards for indirect dischargers.

And we recognize all the disagreement with that position—arguments against that position.

Third, authorize POTW's to treat existing and future industrial customers equally, rather than requiring different control levels for new dischargers.

Fourth, revise enforcement and performance requirements in the law to lay those responsibilities squarely on the shoulders of the municipal authority. Local ordinances for treatment system discharges can and will be strengthened to reflect Federal concerns. Local authorities will be able to implement their programs in a step-by-step fashion, controlling the most pervasive pollutants first.

And the fourth item is financing municipal treatment. We gave you considerable information and testimony on this in August. Also in our letters to Ms. Ferraro and Mr. Stangeland we dealt at length on this issue.

After our August 2 appearance, we sent those letters.

I will not go into this further, although I would be glad to discuss it with you or answer questions on our funding position. I guess the basis of our funding position is stated in the first sentence of the third paragraph of page 7 of our testimony. The grants program should contribute to the long-term goal of creating self-supporting municipal utilities.

The federation's positon for many, many years has been that water pollution control, collection, and treatment facilities, should be self-supporting utilities.

Thank you, Mr. Chairman. I will be glad to take any questions.

Mr. ROE. I want to thank you very much for your testimony.

The gentleman from Oregon.

Mr. SMITH. Thank you, Mr. Chairman.

I am wondering, for someone like yourself who believes from the bottom up approach is the best, how that can actually take place, recognizing the political and economic restraints of the communities; how can a bottom up approach be effective?

Mr. PERRY. I think the political constraints may be the most difficult, and I think those are the constraints that you need to deal with. But I think, as a professional organization, we need to state what we feel is the best way that these things can be done.

The public needs to understand the true cost of water pollution control. I think if this were so the problems that were related by the previous witness would not occur. It is difficult to understand why there should be a difference between the cost to the customer

of water pollution control versus the cost of water, electricity, gas, telephone, and all of the utilities that are required in a home today, and why it is absolutely necessary for the Federal Government to fund a portion of a water pollution control program. The Federal Government has been funding this program since, I believe, 1956. Now if the intent of the Federal program is to provide municipalities with a chance to get caught up, and from then on they are on a self-supporting basis, then, since 1956, we have not made much progress. What the federation is saying is that Congress should make a determination that there will be an end to this program, and this is when it will end, and this is how it will end. We have given you a suggestion on how this might be done at, by the way, at the request of this committee. That is where we need to go.

Mr. SMITH. Thank you. You know, I am very impressed with your statement about agricultural nonpoint pollution. That is the first time I have seen it identified in specifics. We have had a lot of testimony that we ought to attempt to eliminate nonpoint pollution. And I think you have delineated between urban and rural nonpoint pollution in an excellent way.

That brings me to the question, in a response to a letter or your letter to Mr. Freese's question, you recommended a center for nonpoint source information. Do you want to expand upon that thought?

Mr. PERRY. I think the idea is simply to bring together the information that has been gathered, the knowledge that has been gathered in State agencies through the years and in our own Federal departments. This is especially true of urban nonpoint as well as rural nonpoint; to bring this together in some manner and to coordinate a national effort on finding answers to these problems.

Again, we have the problem at the Federal level, where we have the Department of Agriculture dealing with this, EPA dealing with this and other agencies dealing with this, and we need to bring this effort together and focus on the problems that confront us all.

Mr. SMITH. You are thinking of a federally funded point or commission or center?

Mr. PERRY. Probably, yes. I think it would have to be a Federal effort.

Mr. SMITH. A federally funded commission to bring all the information together?

Mr. PERRY. Yes. I am not sure commission is the right word, but it should be a federally funded effort of some kind.

Mr. SMITH. Do you have any idea what kind of expenditures?

Mr. PERRY. No.

Mr. SMITH. Thank you, Mr. Chairman.

Mr. ROE. The gentleman from Wisconsin.

Mr. MOODY. Thank you for your very interesting testimony.

The last two witnesses, I am sure you found as interesting as I did, but there we have a case where the bottom up decisionmaking is not working very well. You just suggest bottom up decisionmaking and they are complaining that EPA is not correcting false information that is being disseminated, unless somehow the Inspector General's information can be transmitted—perpetrated through the system. But bottom up decisionmaking, here we have got a

group of decisionmakers who were basically oriented toward growth, in answer to growth proponents in this community, and they are way overbuilding, if their statements are correct. I do not know whether bottom up decisionmaking is necessarily the answer for nonpoint. But I think you would agree, whether or not you agree with that, that local decisionmaking may not work for nonpoint because you may have three or four local jurisdictions, or even State jurisdictions, emptying into the same estuary or the same basin or the same bay. And if you let each set their own decisionmaking, the poorest one gets the freest ride—the one who does the least gets the free ride—Maryland and Virginia dumping, a nonpoint source going into the Potomac Bay, I mean the Chesapeake Bay. We had testimony last week that described this and we had some estuary experts here saying you just cannot let everybody make their own decisions because there is always this temptation to do less and, therefore, the culmination of that is everyone does less. So if my pollutants pollutes your body of water, I am going to be—my incentive is to undercontrol pollution on a nonpoint basis. How do you answer that?

Mr. PERRY. My response would be that in the nonpoint area of pollution, I think the top of the pyramid, so to speak, needs to be the State and interstate agencies. I agree with you that you cannot expect the local communities to deal with nonpoint source. With enforcement, and especially in rural nonpoint source pollution control, the State has got to take a strong hand. All of this in the end comes back to the water quality standards that are going to be required, and how you are going to meet these standards. But in nonpoint, I think State agencies and interstate agencies are the ones that are most familiar with the problems and are most able to deal with them.

Now, the national research effort and the bringing together of all this information that we discussed is a national responsibility.

Mr. MOODY. If I may interrupt you. If the State is the right unit for decisionmaking on nonpoint, then how do you answer the Chesapeake Bay problem?

Mr. PERRY. That would be an interstate situation. There are interstate situations.

Mr. MOODY. How do you get teeth on interstate enforcement?

Mr. PERRY. That is what we need to find out, because very few, if any, of the interstate agencies that we now have have any teeth.

Mr. MOODY. Are you recommending teeth? Your testimony, which I found very interesting and worthwhile, does not seem to dwell on teeth; it seems to dwell on the need for more research and information.

Mr. PERRY. You are correct, it does not deal on enforcement.

Mr. MOODY. But should there not be?

Mr. PERRY. There should be.

Mr. STEVENSON. If I may, Congressman, one of the problems with enforcement, when you are looking at nonpoint source pollution, is that there are no clear agreements among people within the profession as to what might be the best control methods that can be applied in a particular situation. There is even a lack of concensus when we are dealing with a very small, relatively local situation of nonpoint source pollution. And that kind of a lack of concensus is

multiplied many times when you are dealing with something that is in the order of an estuary-wide problem. So what we have tried to describe in our testimony is a path by which if we can bring all of the information together, we may be able to make it possible to decide what the proper control measures are. Once you have got that decision, then you have a basis for extending yourself more strongly into the enforcement area and saying people agree that this is the proper way to solve the problem for the Chesapeake Bay, why have you not done so so far? At the moment, if you tried to make that argument, you will find that each side can call well-respected scientific witnesses and dispute the point that the control method you want to enforce is the proper one.

That seems to be our problem.

Mr. MOODY. That is interesting. I think that is going to continue though. Waiting for a concensus is like waiting for a utopia, I do not think we are going to have it, because there are respectable people on both sides, and there will continue to be, on how you solve it, and it will depend on whose ox is getting gored to some extent which witnesses are called up.

But, in the urban area, for point pollution, you finally despair; you have the same analogous disagreements for years on that. Finally, you have come up with set standards and then you guys, you persons locally figure out what your best technology mix or investment or expenditure mix is to solve the problem. We are only going to require that the outfall have a certain standard. We will not try to second-guess your technology. In nonpoint, you really have that in spades, it seems to me, because you have different soil conditions, different climactic conditions, different characteristics of the receiving body of water; you have different kinds of agricultural situations; different crops; different feedlot situations. We are going to have information overload if we try to come up with a national, or even a regional standard on this is the way to solve nonpoint. It seems to me that has always got to be left locally and some tough trade-offs have to be made, but they are going to have to be made locally, because if we make them nationally we are going to definitely be wrong most of the time. But that standards approach, or have an output restraint, an output constraint that water must not fall below a certain level, and how you do it is up to you. If we wait for the concensus and do all the research that you are suggesting, I think we will never get to the end of the tunnel. I am just sharing that with you.

Mr. PERRY. I do not understand how you can put restraints at the national level. As you point out, the problems are so different in State to State and basin to basin. The problems of the West and irrigated agriculture are so much different than in the East that I do not see any way that you can pass national legislation that is going to solve that.

Mr. MOODY. What if you say that runoff standards have to be x, so much oxygen demand, so much particular matter, so much—you know, you set up these constraints and every region, every water basin is forced to come to terms on how to solve it.

With air pollution control, in Wisconsin, we are under air pollution constraints. They do not tell us how to solve it; we have to crack heads to figure out how to get our air pollution down or we

are going to face loss, or potential loss of Federal highway money, and sewer money, but we are going to have to make those tough technological and economic trade-offs. And that is the only way we are ever going to make progress, it seems to me.

Mr. PERRY. I think what you said is correct except we are a long way from being able to do that, and that is the problem. One of the things——

Mr. MOODY. Does your call for action, which is basically a research agenda, really get us ahead; is it really going to move us forward is my question.

Mr. PERRY. I would hope it would, yes, toward finding the answers that you are saying we need.

Mr. MOODY. I guess my response is the answers are going to be so particularistic to every different situation that you are not going to find an answer that we can legislate nationally.

Mr. STEVENSON. I think I understand your line of reasoning, and the federation would agree with your concern that you cannot legislate a national solution to a problem like nonpoint source.

Mr. MOODY. Not the inputs; you might legislate the outputs, the outcomes.

Mr. STEVENSON. Yes. If you have the time, or if the staff has the time, you will find in the EPA study a national urban runoff program, an evaluation of the different control options that are available to deal with urban nonpoint. It is not rural, but urban. And they do present some particular cases in which they have evaluated the practicality of different controls. So there is a basis being put together for people to make those kinds of decisions. I think the thing that concerns the federation the most is whether or not we can actually say that there is a national problem with urban runoff that demands a new Federal initiative, or whether or not the programs that are currently in the law will make it possible for you to address an urban nonpoint source problem if it is a serious one within your area, or within the watershed that you happen to discharge to. And thus far——

Mr. MOODY. The reason, I think, intuitively, I would say the time has come to say yes on that question is that such a large portion of the waters, the ultimate water quality is now determined by nonpoint that we are pressing harder and harder on point solutions, point control solutions, and if we ignore the other, we are, basically, going to be wasting money. It is a diminishing return, so you can press harder and harder on points, but if you do not address nonpoint, you are really not getting much for your dollar. You have got to coordinate those two, so the time has come, I think, to get serious about nonpoint, and I guess that is what I am in a quandary about, how do we get at it?

Mr. STEVENSON. I think most of the people in the federation agree with that, and I am sure the organization would agree with that. There is no doubt that nonpoint sources outside of an urban area, which you seem to be referring to, more rural rather than urban, are a serious problem.

Mr. MOODY. Really both, but, you know——

Mr. STEVENSON. Well, there is one major difference between urban and rural runoff. Urban is much more conducive to conventional treatment technology. In fact, unless you really want to

stretch a point, urban runoff is, basically, can be considered a point source for the objective of solving it or resolving it.

Mr. PERRY. You can capture it easier.

Mr. MOODY. You have it in a pipe from highways and parking lots and so forth.

Mr. STEVENSON. Precisely. There are conveyances that move it to the receiving waters. That is not the case with rural nonpoint sources, in most instances, and that is why we, as an organization, have difficulty recommending to you particular ways to solve rural nonpoint sources.

Mr. MOODY. But equity requires that we try to because it is not fair to ask the urban areas to do more and more and more and ignore the rural.

Mr. PERRY. We would agree with that.

Mr. MOODY. Thank you, Mr. Chairman.

Mr. ROE. OK. Any further questions?

I want to thank you very much for, again, your splendid testimony. We appreciate your expressing your thoughts to us, and we will look into them further.

Mr. PERRY. Thank you, Mr. Chairman.

Mr. ROE. Thank you very much.

Our next and final witness today is Mr. Geoffrey Stengel, Jr., president of the Envirite Corp.

Mr. Stengel, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

PREPARED STATEMENT OF GEOFFREY STENGEL, JR., PRESIDENT, ENVIRITE CORP.

Mr. Chairman, Members of the Committee, my name is Geoffrey Stengel, Jr. I am President of Envirite Corporation, a Pennsylvania-based firm that specializes in converting hazardous metal finishing wastes into nonhazardous materials. I am pleased to testify on the reauthorization of the Clean Water Act, and in support of H.R. 3282, introduced by Chairman Howard.

On September 15, 1983, Envirite withdrew its Notice-of-Intent to build a new hazardous waste treatment facility in Eastern Massachusetts. The reason we withdrew at this time is that there does not appear to be a clear prospect of sufficient business developing in Massachusetts to justify a new plant, although there certainly are prospects. The major issue is uncertainty on our part as to the success of state and local efforts to establish and enforce treatment standards limiting the discharge of industrial pollutants into the sewer system serving the greater Boston area. Any privately-owned waste treatment facility would find it difficult to compete with a publicly-owned outlet for untreated wastes.

The Massachusetts Department of Environmental Quality Engineering and the Metropolitan District Commission have been striving to develop an effective pretreatment program for industrial dischargers that will ultimately eliminate or greatly minimize the flow of contaminated material into the bay. Indications are that progress is being made, and that further progress can be expected over the next several years. Nonetheless, enforcement still needs to be strengthened considerably.

In our judgment, therefore, it is premature for Envirite to commit to a Massachusetts facility at this time. While it can be argued that the siting application process may require at least

two years and that by then the enforcement program will be significantly improved, we simply cannot justify that kind of financial risk at present. Accordingly, Envirite withdrew its notice-of-intent.

Much national public attention has been focused this year on the need to clean up hazardous waste sites created in the past. Relatively little attention has been paid to the fact that existing laws and regulations continue to allow as much as 80% of all hazardous wastes to be landfilled or sewered without having first been rendered nonhazardous. Unless these circumstances change, this country will be cleaning up contaminated landfills and water supplies in perpetuity.

My message is that toxic industrial wastes, in particular metal finishing wastes, can and must be made non-toxic and non-hazardous before being disposed of in a landfill or discharged into a municipal sewer system. Best available pretreatment technology should be employed to render such wastes nonhazardous. Rigorous enforcement is needed to assure compliance with these requirements. Finally, controls on the disposition of sewage sludge will reinforce the basic pretreatment program.

PRETREATMENT IS THE KEY TO A TOXICS CONTROL STRATEGY

Pretreatment, as now required by the Clean Water Act, is a primary means to attain the national policy that "the discharge of toxic pollutants in toxic amounts be prohibited." Pretreatment is also essential in order for the objectives and requirements of other environmental laws to be achieved (e.g., the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the Ocean Dumping Act).

Envirite has a hands-on perspective of EPA's pretreatment program and a vital stake in its success. For the past eight

years, we have treated metal finishing wastes to make them non-hazardous in accordance with RCRA's delisting provisions. We fully comply with promulgated and proposed effluent guidelines, new source performance standards, and pretreatment standards under the Clean Water Act.

Let me illustrate the importance of pretreatment standards and how pretreatment is an essential part of other environmental programs by discussing the metal finishing industry. Aside from treatable acids and alkalies, metal finishing dischargers into publicly owned treatment works (POTWs) generate 61,000 metric tons of toxic metal wastes annually. These toxic pollutants are primarily chromium, lead, cadmium, nickel, copper, and zinc compounds. These toxic metals need to be converted into insoluble form to avoid future risk to the environment, and therefore have properly been listed by EPA as hazardous wastes.

The metal finishing industry is currently allowed two disposal methods involving no pretreatment. Their toxic wastes can be dewatered and the resultant hazardous waste placed into a land disposal facility regulated under RCRA. Alternatively, these toxic wastes can be discharged into a POTW, where the metals are passed through, untreated, into the sludge. The contaminated sludges are ultimately land disposed, usually by landfilling or land spreading (40%), are applied on the land for agricultural use (20%), are incinerated (25%), or dumped into the ocean (15%). None of these methods eliminates the danger of metal pollutants. Since these toxic metals are very soluble, they readily leach into the environment when land disposed or bioaccumulate when dumped into the ocean. Incineration cannot thermally destroy toxic metals. An effective pretreatment program is the <u>only</u> way to prevent toxic metals from polluting the environment.

RCRA does not now prevent toxic pollutants, particularly metal finishing wastes, from being released into the environment. RCRA excludes from the definition of solid waste any "solid or

dissolved material in domestic sewage." EPA has interpreted this provision and RCRA legislative history to defer to the Clean Water Act as justification to exempt from RCRA hazardous waste regulations any industrial discharge into a POTW. But EPA presumed that the pretreatment program will "insure that users of sewer and treatment systems do not dump wastes into the system that will present environmental problems." 45 Fed. Reg. 3309 (May 19, 1982). However, the failure of EPA to promulgate categorical pretreatment standards has allowed approximately 5 million metric tons of toxic wastes (according to OTA) to be discharged into POTWs, without any pretreatment. These wastes are passed through the POTW into the receiving waters or merely shifted from the generator to the sewage sludge.

A second RCRA deficiency could also be cured by pretreatment. EPA now allows metal finishing and other hazardous wastes to be land disposed without any pretreatment to render them less toxic, mobile, persistent, or bioaccumulative. EPA relies on land disposal facility design and management standards to contain the wastes, but has acknowledged that its standards may not, in many cases, be sufficient to prevent or adequately reduce the potential human health and environmental impacts posed by the land disposal of hazardous wastes. Surface and groundwaters are particularly vulnerable to improper land disposal.

The RCRA land disposal standards are particularly deficient for containing toxic metal finishing wastes. Envirite has therefore petitioned EPA to require, pursuant to RCRA, owners and operators of facilities that dispose of, treat, or store certain metal finishing wastes in a landfill or surface impoundment to pretreat such wastes to produce a stablized, non-hazardous waste and a clean wastewater effluent. Envirite, in other words, is seeking the same pretreatment under RCRA as that required by the Clean Water Act metal finishing pretreatment standard.

Pretreatment is, in addition, the key to the Ocean Dumping program. Fifteen percent of all sewage sludge is dumped in the

ocean. Because most of the sludge comes from larger, urban industrial areas, the potential adverse environmental impacts from toxic pollutants are more significant than even the 15 percent figure suggests. Heavy metals and other toxics that are allowed to be dumped into a POTW, without pretreatment and without complying with RCRA, then are dumped into the ocean as part of the sludge. Ocean dumping is controversial in large part because there is no pretreatment program to remove the heavy metals and other toxics. The presence of metals also prevents incineration of the sewage sludge. Remove the toxics and you remove many of the objections to disposal of the sludge.

Envirite believes that the most effective and efficient toxic metal control strategy is the metal finishing pretreatment standard. Under the metal finishing pretreatment standard, cyanide compounds are destroyed, and hexavalent chromium is reduced to much less toxic and soluble trivalent chromium. An alkaline precipitation process removes the metals from the wastewater, with the resultant sludge virtually impervious to leaching. The sludge resulting from Envirite's treatment process has been delisted as a hazardous waste under RCRA.

Pretreatment will prevent toxics from entering the environment, will close a major RCRA loophole, and facilitate sewage sludge disposal. Envirite therefore views with concern any proposal to alter or weaken the pretreatment program.

THE PRETREATMENT PROGRAM SHOULD NOT BE WEAKENED

The present requirement for pretreatment is only now beginning to be implemented. We think it should be given a chance to work, without significant and disruptive changes at this time. Our concern is heightened when revisions to the pretreatment program are considered with other possible changes to the water quality and water use programs. Envirite

respectfully urges Congress and EPA to take no action that will weaken or delay the pretreatment program and frustrate the goal of eliminating toxic pollutant discharges.

Envirite is concerned that Congress may delay implementation of the pretreatment program. There is no justification for further postponement. As Envirite demonstrates, the metal finishing pretreatment standard is achievable now. The U.S. Court of Appeals for the 3rd Circuit recently upheld the standards and deadline for compliance for the categorical pretreatment standards for the Electroplating Point Source Category. The Court also upheld EPA's economic analysis that concluded that the cost of compliance is not significant.

Note also that without a pretreatment program, neither the individual discharger nor the POTW is now paying the true cost of treatment because the sludge is not now subject to more stringent RCRA standards. Delay in achieving pretreatment will not just adversely affect the Clean Water Act, but as we have pointed out, will seriously undermine the complementary RCRA and ocean dumping programs.

Envirite is concerned that increased local control over the pretreatment system may undermine the program unless certain safeguards are assured. A uniform, national pretreatment system provides technology-based, objective standards for measuring performance.

We cannot develop an infinitely adjustable and "fair" system, where each POTW and indirect discharger is subject only to the exact controls needed, nothing more and nothing less. It is beyond our capabilities, and I am concerned whether it begs the question of "how clean is clean". We are not urging treatment for treatment's sake. We are urging the use of best available treatment, applied uniformly, because we don't know enough to take the chance and require less. We must insure that

the present generation does not bequeath to the next generation the same inheritance we received from the previous generation.

Industrial dischargers and the treatment industry know what is required and can plan accordingly. State and local authorities are authorized to impose more stringent controls where necessary to achieve water quality standards, but should not be allowed to set a standard below the minimum national pretreatment requirement. Every source in the same category should be required to meet the same minimum standard wherever it is located, so that all can compete relatively equally on environmental costs. Resource demands on the POTW, moreover, are limited to monitoring and enforcement actions.

Replacement of uniform, technology-based categorical pretreatment standards with an alternative scheme by which each POTW could establish numerical limits on the amount and concentration of toxic pollutants will, we fear, result in more total toxic pollutants being discharged into the environment. It will increase the uncertainty faced by industrial dischargers and by the treatment industry at a time when Congress should be encouraging treatment rather than land or ocean disposal of toxic pollutants. The pretreatment program must also be considered along with recent EPA proposals that would modify water quality standards regulation, proposals that we fear will undermine a program that has worked. Downgraded water quality standards and designated uses, combined with changes to the pretreatment standard, are a possible outcome of any changes to the Clean Water Act or EPA policy.

Furthermore, at a time when federal financial assistance to state and local pollution control authorities is decreasing, we also question whether POTWs will have the resources and expertise to undertake a program potentially far more complicated and resource intensive than the present one. Proponents may intend the local alternative option to be strictly interpreted and be

limited only to a few well-qualified systems, but experience clearly requires caution in granting EPA such discretion.

The present exemption from secondary treatment under section 301(h) for ocean outfalls allows the direct discharge of industrial wastes that haven't met any RCRA control standards because of the domestic sewage exemption, and that haven't been pretreated because a categorical pretreatment standard is not in place. This provides industrial dischargers with a free, government-granted license to pollute! Envirite urges that the ocean discharge waiver be conditioned on all dischargers into the POTW complying with applicable categorical pretreatment standards, as well as requiring actual enforcement of the standards by the POTW. If there is no pretreatment standard, we don't believe that an ocean discharge waiver should be granted.

As stated earlier, Envirite does not see any need to change the present pretreatment system. We urge that Congress direct EPA to continue the promulgation of final pretreatment rules and their implementation as expeditiously as possible.

PRETREATMENT STANDARDS MUST BE ENFORCED

Envirite's decision not to build a new hazardous waste treatment facility at this time in Eastern Massachusetts is tangible evidence of the consequence of the RCRA domestic sewage loophole, of the loss of momentum caused by the perceived opportunity of getting relief from Congress (and the uncertainties of trying to comply with a moving legislative target), and the lack of resources for enforcement. Envirite cannot compete with a free license to pollute. I have several specific recommendations to improve the compliance with the pretreatment program.

First, we recommend a traditional carrot and stick approach. A portion of any additional funds authorized for construction

grants under H.R. 3282 or the Committee's final bill and for State pollution control assistance under Section 106 should be reserved as incentive grants for POTWs (and States) to enforce general and categorical pretreatment standards.

POTWs are also required to report annually on implementation of their pretreatment program. POTWs should be required to certify annually that a substantial portion of indirect dischargers are in compliance with all applicable pretreatment requirements, and that reasonable further progress is being made to bring non-complying sources into compliance. If the POTW cannot make such a certification, or the State or EPA determines that a significant number of sources are not in compliance, then funds should be withheld until compliance is achieved.

Second, no Sec. 301(h) ocean disposal waiver from secondary treatment should be granted unless all indirect dischargers are in compliance with all applicable pretreatment requirements; we support, therefore, Section 5(b) of H.R. 3282.

Third, anyone who knowingly or negligently introduces into a POTW or sewer system a pollutant or hazardous substance which causes or can reasonably be anticipated to cause personal injury or property or environmental damage should be subject to criminal penalties.

Fourth, anyone who discharges a hazardous waste into a public sewer system should also be subject to RCRA notification and enforcement provisions.

SLUDGE MANAGEMENT MUST REINFORCE THE PRETREATMENT PROGRAM

The proper management of sewage sludge is frustrated by inadequate pretreatment. The Clean Water Act should regulate sewage sludge as well as liquid effluent. Sludge use should be enhanced, not just "not be impaired" during the life of an NPDES permit.

EPA should identify and regulate toxic pollutants which may be present in sewage sludge that may adversely effect human health of the environment. Sludge quality standards are as necessary as water quality standards. Priority candidates should be hazardous wastes and constituents that are restricted from land disposal under H.R. 2867, the "Hazardous Waste Control and Enforcement Act of 1983." It makes little sense to take one waste stream and subject it to stringent management controls if it is to be land disposed directly, but then leave it virtually unregulated if discharged into a sewer system. The Resource Conservation and Recovery Act, as amended by H.R. 2867, is now beginning to be effective to prevent future Superfund dumpsites. Extreme care must be taken that today's unintended weaknesses in the Clean Water Act do not become tomorrow's loopholes for those wishing to escape from RCRA. Toxic pollutants must be treated and destroyed whereever feasible, not shifted from the air to the ground to the rivers to the oceans, depending on enforcement priorities and the legislative reauthorization cycle. The Clean Water Act must protect the total environment.

CONCLUSION

Effective implementation of the pretreatment program under the Clean Water Act is critical to the attainment of the national goal of eliminating toxic pollution of the environment. Envirite believes that the best strategy is to prevent toxics from entering into the environment, rather than rely on inadequate hazardous waste containment requirements or the assimilative capacity of the ocean, or on case-by-case numerical limits that may be impractical to implement and not be sufficiently protective of human health or the environment. Prevention by pretreatment is technologically achievable and cost effective,

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particularly compared to the costs of future hazardous waste site clean-ups, contaminated drinking water and irreversible ocean pollution.

Any change in the requirements of the pretreatment program will be disruptive. The consequences of disruption will have significance beyond the Clean Water Act. Envirite respectfully urges the Committee and Congress to proceed with great caution before making any changes to the pretreatment program that will delay implementation, cause increased uncertainty in the treatment industry, and allow toxic pollutants to continue to be released into the environment that would otherwise be controlled by the existing pretreatment program.

ENVIRITE
news BRIEFS

Envirite Withdraws Notice-of-Intent to Establish Waste Treatment Facility in Massachusetts

September 15, 1983 - Envirite Corporation (formerly Liqwacon Corporation) today withdrew its notice-of-intent to build a new hazardous waste treatment facility in Eastern Massachusetts. Explaining its recent decision, the waste treatment firm cited uncertainties regarding the development of an effective program to limit the discharge of industrial hazardous wastes into the sewer system serving the greater Boston area.

Envirite, a Pennsylvania-based firm that specializes in converting hazardous metal-finishing wastes into nonhazardous materials, was awarded "feasible and deserving" status in 1981 by the Massachusetts Hazardous Waste Facility Site Safety Council. Since then, the company has been engaged in site identification, market research, and monitoring of state and local efforts to develop effective sewer pretreatment programs.

In a letter today to Dr. Norton H. Nickerson, the Council's Chairman, Envirite President Geoffrey Stengel, Jr., thanked the Council and the Department of Environmental Management for their support and assistance. Stengel also applauded the efforts being made by the Department of Environmental Quality Engineering and the Metropolitan District Commission to strengthen restrictions against discharges to the sewer of untreated hazardous wastes, but indicated that substantial further improvement would be necessary before it would be economical for private enterprise to offer waste treatment services in the eastern portion of the state. "Any privately-owned waste treatment facility would find it difficult to compete with a publicly-owned outlet for untreated wastes," Stengel said in the letter.

According to Stengel: "Much public attention has been focused this year on the need to clean up hazardous waste sites created in the past, but relatively little attention has been paid to the fact that existing laws and regulations continue to permit as much as 80 percent of all hazardous wastes to be landfilled or discharged to sewers without having first been rendered non-hazardous. Unless these circumstances change," said Stengel, "this country will be cleaning up contaminated landfills and water supplies in perpetuity."

Stengel concluded his letter to Dr. Nickerson with an expression of interest in being able to reconsider Envirite's decision in the future: "As a leader in the promotion of advanced technology industries," wrote Stengel, "Massachusetts is a logical home for state-of-the-art waste treatment facilities that can serve the special needs of its increasingly technology-based economy. By rendering wastes nonhazardous, a firm such as Envirite would offer industry in the Commonwealth an environmentally sound alternative to discharging or landfilling contaminated, potentially dangerous materials. As a consequence," concluded Stengel, "it is our hope that there will be another opportunity to consider Massachusetts in the future."

# # #

For additional information: contact:

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Rendering Wastes Nonhazardous Is Envirite's Niche In The Waste Management Industry

By Margaret M. Nemec

As we turned off a bustling intersection in York, PA and headed toward a modern industrial parkway in a rural setting, we were treated to a typical Pennsylvania springtime view. Colorful blooming trees and farmhouses dotted the verdant, rolling landscape.

An incongruous setting for a waste treatment facility? Perhaps, but as we neared our destination – Envirite Corporation – it was hard to discern the facility from the many modern and meticulously-landscaped manufacturing sites tucked away in the nation's endless industrial parkways.

But then again, Envirite Corp. (formerly Liqwacon Corp.) is not your typical waste treatment facility. One very big difference: waste treatment takes place inside each of the four facilities – under roof.

Background

Envirite Corp., a subsidiary of Yarway Corporation, is headquartered in Blue Bell, PA and operates four treatment facilities: Thomaston, CT; Harvey, IL; Canton, OH; and York, PA. In operation since 1975, the four facilities are located near major industrial sectors to minimize transportation time and costs for the company and customers alike.

Hazardous Materials & Waste Management Magazine visited the York facility for a first-hand look at its unique waste treatment operations and to discuss Envirite's niche in the waste management industry.

Envirite Corp. specializes in the treatment of acid and alkaline inorganic finishing wastes. The wastes include: acids, alkalies, acids and alkalies with heavy metals, metal hydroxide sludges, dilute organics (biotreatable) with

heavy metals, chromic acids, oxidizing agents, reducing agents, cleaning agents, and inorganic rinse waters.

Typical customers served in the metal-finishing industry include: "high technology" electronic firms, steel manufacturers, and electroplating firms.

Each Envirite facility is fully permitted under EPA and the appropriate state as a treatment, storage, and disposal (TSD) facility.

Our hosts for the tour were Fred Holloway, Jr., manager of market development, and John Horstmann, Jr., sales manager at the York facility. Before the tour began, both Holloway and Horstmann were eager to describe how the Envirite waste treatment process benefits generators. "A major benefit," Holloway said, "is delisting." He explained that in late 1981, Envirite treatment residues which met specific EPA criteria were "delisted" – excluded from EPA's roster of hazardous waste. This "delisting," which is offered at all four facilities, cuts short RCRA's cradle-to-grave responsibility and removes the worries generators might have about future, long-term liabilities associated with waste disposal.

"Once a generator's waste is transformed into nonhazardous materials by the Envirite process, the generator has no further hazardous waste liability under RCRA," Horstmann added. As for the "end" waste products, Holloway said: "Sludges are rendered nonhazardous and placed in a nonhazardous landfill. The second end product, the liquid effluent, meets pretreatment standards and is discharged directly into the sewer." The company continuously monitors the sewer discharge to assure compliance with local publicly owned treatment works (POTW) effluent standards.

"How does a generator know for sure that his or her wastes have been rendered nonhazardous?" we asked. "Once our laboratory tests establish that a generator's waste material has been rendered nonhazardous, we provide the generator with a signed certificate stating that the generator's waste is nonhazardous and that the company has no further hazardous waste liability for this material under RCRA," Holloway replied.

Nerve Center

HMWM's tour began in the laboratory – the facility's "nerve center" – where analysis, monitoring, and testing procedures are performed. Before entering the lab, we were treated to a dose of Envirite's safety consciousness and given the appropriate protective equipment for the tour.

The modern and spacious lab houses the latest in instrumentation, including: double-beam atomic absorption spectrophotometers with accessory graphite furnace and electrodeless discharge for analysis ranging from parts per million down to parts per billion. Also in the lab are visible range spectrophotometers, inorganic and organic carbon analyzers, biotreatability testing systems, specific ion meter, oxygen meter, microscopy facilities, distillation equipment, and apparatus required for EPA testing procedures.

On hand the day of the tour was Judith Sayko, manager, laboratory and processing, who told *HMWM* that the lab can test for 30 different metals which might be found in customers' waste. Sayko pointed out the major laboratory equipment used: atomic absorption spectrophotometer, used to verify heavy metal concentration at all phases of the operation, and the total organics carbon analyzer (TOC) which indicates the presence of organics in the waste material.

John Horstmann, Jr., sales manager, told us how the company matches its capabilities with generators' needs. The first step is the sales call where a technical service representative thoroughly reviews the generator's needs. A sample of the generator's waste is then taken for lab analysis. The results of the analysis, together with quotations for waste treatment and transportation costs, are then conveyed to the generator. If all systems are go, Envirite schedules a waste pickup, using its transportation fleet comprised of 5,000-gallon vacuum tank trucks.

Holloway pointed out that another major benefit to customers is the fact that the company focuses on service. Waste pickups are carefully scheduled to meet customers' needs.

Horstmann told us that the drivers get thorough training on all OSHA, EPA, and DOT regulations and safety procedures affecting their jobs. All company personnel are trained in job safety and health procedures affecting their jobs and in the use and care of personal protective clothing and equipment. First aid kits, emergency eyewash stations, self-contained breathing apparatus, air masks, and other equipment are strategically situated throughout the plant.

"How do you ensure that incoming waste matches the original waste sample/analysis?" we asked.

Our hosts told us that additional samples are taken to verify that each truckload conforms to the initial waste sample and, unloading begins **only** after this verification is made.

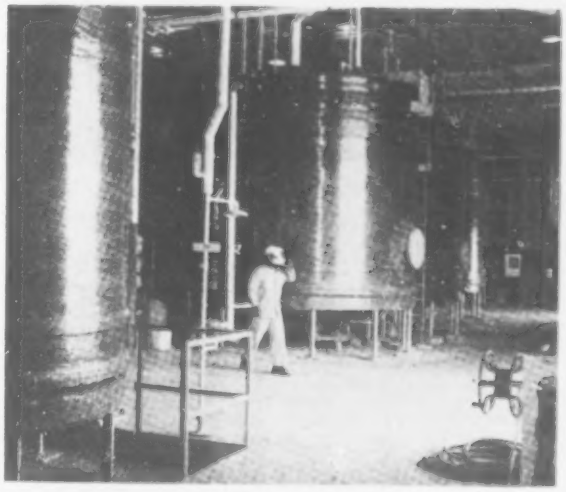
Envirite was humming with activity the day we arrived. From inside the lab we observed the tankers pulling up and departing. We also saw chemical operators take samples of in-coming waste for analysis and verification and then receive the go-ahead to unload. Curvin Snyder, III, manager of the York operations, joined us for our tour at this point and said that chemical operators cannot unload waste until they receive both written and oral instructions. This apparent duplication is intentional, he said, as it is another of the company's safeguards.

Plant Organization

In addition to the lab, there are three other major activity centers: waste receiving, waste processing, and waste dispatching for the two end products – effluents and solids.

The waste receiving area is divided into three sections: acids, neutral materials and alkaline process chemicals. Special drain and collection systems in these areas, as well as in the processing and dispatching areas, are another example of the company's attention to safety and the environment. In the event of a leak or spill, wastes are collected in a sump system which prevents commingling and potential formation of noxious gases. Any wastes from spills and leaks would be collected and analyzed, and then put through the complete Envirite process.

Following waste analysis and verification, incoming aqueous waste is pumped directly from one of the company's 5,000-gallon tank



trucks in the outside waste receiving bay to one of the many 10,000-gallon holding tanks inside.

The processing area is comprised of reactor systems, vacuum filtration equipment for liquid-solid separation, fume scrubbers, and process pH monitoring. Neutralization, precipitation, chemical fixation and other waste treatment take place in many 10,000-gallon reactor vessels.

The gigantic storage and treatment tanks are constructed of fiberglass or polyethylene. As we made our way through the processing areas, these bright copper-colored tanks towered above us. Holloway pointed out that each facility is designed to treat 50,000 to 75,000 gallons of waste per day.

Treated wastes next go through a vacuum filter for separation of the nonhazardous solid residue, which is fed by a conveyor system to 20 cubic yard containers. The solid residues are tested to ensure that they meet the delisting criteria established by EPA before they are placed in a landfill. The liquid effluent, as mentioned earlier, is discharged into the sewer if it meets pretreatment standards. Holloway emphasized that Envirite continuously monitors the effluent to ensure that it meets pretreatment standards.

Safety Measures

Envirite's attention to safety is evidenced throughout the plant. In addition to the numerous safety measures and worker training cited earlier in this article, safety is a common thread woven into plant design and layout as well, including these features:

- A collection system in the acid storage area has its own sump to catch spills or leaks and to prevent contact with incompatible alkaline or cyanide products.
- Storage and treatment tanks are positioned above ground for easy exterior inspection for leaks.
- Acid and alkaline floor sides of the plant slope away from each other.
- Clean water lines are used to rinse pump lines after pumping.
- An elaborate piping system reduces the potential for spills during waste transfer operations.
- A wall control board situated in the laboratory tracks solution flow.

Hazardous Waste In; Non-Hazardous Waste Out

We asked Holloway and Horstmann for some hazardous waste examples and the steps taken in the Envirite process to render these wastes nonhazardous. They gave these specific examples:

- Pickling acids (sulfuric, hydrochloric, and nitric) from primary metal manufacturing operations – concentrated acids and the metals that are already dissolved in solution are neutralized. Metals are precipitated. The solids are stabilized, rendered nonhazardous, and then tested against all delisting criteria.
- Chromic acids and other plating baths from decorative finishing operations – hexavalent chrome is reduced to a less toxic trivalent state prior to neutralization, precipitation, stabilization, and nonhazardous testing.
- Cyanides from plating, cleaning, and stripping operations are oxidized prior to being run through neutralization, precipitation, and stabilization processes, and testing, as described above.
- Hydroxides from in-house pretreatment systems receive final treatment or polishing to remove the residual metals. Envirite stabilizes that material and renders it nonhazardous so that it meets delisting criteria.
- Ferric chloride from printed circuit board etching (a particularly difficult waste to treat) is run through neutralization, precipitation, and stabilization processes, and is then tested against all delisting criteria
- Hydrofluoric acids from the glass industry (etching and frosting operations) are run through neutralization, precipitation, and stabilization processes and then tested against all delisting criteria.

Next Stop Blue Bell

We left our tour hosts and headed east to Blue Bell, PA, the location of Envirite's corporate offices, to talk with Geoffrey (Sandy) Stengel, Jr., newly-appointed president of the company. Our questions for Stengel focused on Envirite's niche in the waste management industry, plans for future growth, as well as his assessment of the current regulatory mood in Washington with respect to hazardous waste legislation.

Stengel joined the company in January, bringing with him financial and business experience culled from 13 years with Philadelphia

National Bank and a three-year stint as Secretary of Commerce under Gov. Dick Thornburgh (PA).

When asked about Envirite's position in the waste management marketplace, Stengel agreed that Envirite may be small in comparison to some of the "giants" in the industry, but this "smallness affords Envirite's customers specialized service on a day-to-day basis.

Stengel takes pride in Envirite's "high reputation for careful processing and integrity," adding that "Our track record for compliance with governmental regulations is spotless. Our reputation is another assurance to generators that their waste is properly processed, thereby avoiding problems that could result in unfavorable publicity or in additional costs for further treatment."

As for the future, Stengel maintains that it "is a promising one for Envirite because we are bringing state-of-the-art technology to address a major environmental need.

"As the comparative economics become better understood, Envirite expects to grow – both geographically and functionally – but the company will expand only on a step-by-step basis taking care to preserve its own ability to properly neutralize and/or destroy any hazardous waste that it processes. Our position in the marketplace is based on this ability as well as the care we take to ensure that all wastes are rendered nonhazardous, thereby relieving generators of worries about future risk under RCRA" Stengel added.

Eyes On Washington

Envirite keeps close tabs on developments in Washington affecting the waste management industry. In fact, shortly after he joined Envirite, Stengel testified during hearings on amendments to RCRA by the House Energy and Commerce Subcommittee on Commerce, Transportation, and Tourism. He also submitted written testimony to the Senate Environment and Public Works Subcommittee on Environmental Pollution for hearings on amendments to the Solid Waste Disposal Act and on the reauthorization of the Clean Water Act.

Stengel's testimony emphasized the role pretreatment plays in protecting the environment as well as Envirite's three-part formula for solving today's waste management problems. Stengel summed up this formula for us:

"First, encourage industry to find ways to generate less waste. Second, encourage industry to recover and/or recycle as much waste as possible. And, third, for wastes that must go into the environment, find ways to encourage the destruction, neutralization or stabilization, or other methods to render those wastes nonhazardous before they are released into the environment."

Commenting on this formula, Stengel added that, "it is not only the safest approach environmentally, but it is also the most cost-effective approach from industry's standpoint. Granted, proper treatment and destruction of waste at the point of generation can be more expensive in the short term than traditional waste management methods, but these costs are a minute fraction of the long-term costs associated with a Superfund site cleanup."

In assessing the regulatory climate in Washington relative to hazardous waste, Stengel foresees more stringent hazardous waste regulations, citing these factors:

1. Rising public concern about hazardous waste.

2. Increased interest by generators in eliminating the specter of long-term liability associated with wastes.

3. Hazardous wastes have become an important political issue with respect to the environment and will therefore require close attention by all candidates for public office. Recent public opinion polls show that an overwhelming majority of the public want strict hazardous waste regulations.

About The Author

Margaret M. Nemec is editor of *Hazardous Materials & Waste Management* Magazine.

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HAZARDOUS MATERIALS & WASTE MANAGEMENT.

Mr. ROE. Please proceed.

TESTIMONY OF GEOFFREY STENGEL, JR., PRESIDENT, ENVIRITE CORP., ACCOMPANIED BY LARRY S. SNOWHITE, ESQ., MINTZ, LEVIN, COHN, FERRIS, GLOVSKY & POPEO, P.C., WASHINGTON, D.C.

Mr. STENGEL. Thank you, Mr. Chairman. Everyone has indicated they intended to be brief. Since I am the only thing standing between you and lunch, I will make a special effort——

Mr. ROE. Or perhaps dinner. If you would summarize, we would appreciate it.

Mr. STENGEL. You have my statement. I will try to summarize.

Mr. Chairman, I am president of Envirite Corp., a Pennsylvania-based firm that specializes in converting hazardous metal finishing wastes into nonhazardous materials. I am pleased to testify on the reauthorization of the Clean Water Act, and in support of H.R. 3282. I am confident that a strong bill will emerge from this subcommittee under your leadership, Mr. Chairman.

On September 15, 1983, Envirite withdrew its notice-of-intent to build a new hazardous waste treatment facility in eastern Massachusetts. The reason we withdrew at this time is that there does not appear to be a clear prospect of sufficient business developing in Massachusetts to justify a new plant, although there certainly are prospects. The major issue is uncertainty on our part as to the success of State and local efforts to establish and enforce treatment standards, limiting the discharge of industrial pollutants into the sewer system serving the greater Boston area. Any privately owned waste treatment facility would find it difficult to compete with a publicly owned outlet for untreated wastes.

Much national public attention has been focused this year on the need to clean up hazardous waste sites created in the past. Relatively little attention has been paid to the fact that existing laws and regulations continue to allow as much as 80 percent of all hazardous wastes to be landfilled or sewered without having first been rendered nonhazardous. Unless these circumstances change, this country will be cleaning up contaminated landfills and water supplies in perpetuity.

My message is that toxic industrial wastes can and must be made nontoxic and nonhazardous before being disposed of in a landfill or discharged into a municipal sewer system. Best available pretreatment technology should be employed to render such wastes nonhazardous. Rigorous enforcement is needed to assure compliance with these requirements. And, finally, controls on the disposition of sewage sludge should be established to reinforce the basic pretreatment program.

Pretreatment is a primary means to attain the national policy that the discharge of toxic pollutants in toxic amounts be prohibited. Pretreatment is also essential in order for the objectives and requirements of other environmental laws to be achieved.

Pretreatment will prevent toxic pollutants from entering the environment, will close a major RCRA loophole, and facilitate sewage sludge disposal.

Envirite, therefore, views with concern any proposal to alter or weaken the pretreatment program.

The present requirement for pretreatment is only now beginning to be implemented. We think it should be given a chance to work without significant and disruptive changes at this time. Our concern is heightened when revisions to the pretreatment program are considered with other possible changes to the water quality and water use programs.

Envirite respectfully urges Congress and EPA to take no action that will weaken or delay the pretreatment program and frustrate the goal of eliminating toxic pollutant discharges. Envirite is concerned that Congress may delay implementation of the pretreatment program. There is no justification, in our opinion, for further postponement.

As Envirite demonstrates, the metal finishing pretreatment standard is achievable now. The U.S. Court of Appeals for the Third Circuit recently upheld the standards and deadline for compliance for the categorical pretreatment standards for the electroplating point source category.

Envirite is concerned that increased local control over the pretreatment system may undermine the program unless certain safeguards are assured. A uniform, national pretreatment system provides technology-based, objective standards for measuring performance.

In addition, the present exemption from secondary treatment under section 301(h) for ocean outfalls allows the direct discharge of industrial wastes that have not met any RCRA control standards because of the domestic sewage exemption, and that have not been pretreated because a categorical pretreatment standard is not in place. This provides industrial dischargers with a free, Government-granted license to pollute. Envirite urges that the ocean discharge waiver be conditioned on all dischargers into the POTW complying with applicable categorical pretreatment standards as well as requiring actual enforcement of the standards by the POTW.

If there is no pretreatment standard, we do not believe that an ocean discharge waiver should be granted. As stated earlier, Envirite does not see any need to change the present pretreatment system. We urge that Congress direct EPA to continue the promulgation of final pretreatment rules and their implementation as expeditiously as possible.

Enforcement is just as important. I have several specific recommendations to improve the compliance with the pretreatment program.

First, we recommend consideration be given to a traditional carrot and stick approach. A portion of any additional funds authorized for construction grants under H.R. 3282 or the committee's final bill and for State pollution control assistance under section 106 should be reserved as incentive grants for POTW's, and States, to enforce general and categorical pretreatment standards.

POTW's are also required to report annually on implementation of their pretreatment program. POTW's should be required to certify annually that a substantial portion of indirect dischargers are in compliance with all applicable pretreatment requirements, and

that reasonable further progress is being made to bring noncomplying sources into compliance.

If the POTW cannot make such a certification, or the State or EPA determines that a significant number of sources are not in compliance, then funds should be withheld until compliance is achieved.

Second, no section 301(h)——

Mr. ROE. If the gentleman would yield, your testimony, and I know you have labored hard and your testimony is very important to this committee, we have a double suspension vote. We want to hear your testimony, so I think that we are rushing now and that is unfair to you and, more important, unfair to us. So what we will do is recess, and I am sorry to keep you waiting, but we cannot do it any faster, we will recess and go and vote. It is a 15-minute vote, but it is already halfway through, and we have a 5-minute vote on two suspensions. We will do that and we will come right back. It will take us about 15 minutes.

[A short recess was taken.]

Mr. ROE. The subcommittee will reconvene.

Mr. Stengel, we were not quite to your conclusion.

Mr. STENGEL. We were very close, Mr. Chairman. I was on the third and final major point that this statement makes. The first was that there ought to be a national pretreatment program. The second was that there also had to be strong enforcement of that program, and the third point, which I am about to get to, is the need for people to pay attention to what happens to sewage sludge.

In terms of enforcement, the second point we do have a number of recommendations and I just finished talking about providing some incentives that would encourage POTW's to have proper pretreatment programs.

A second suggestion would be no section 301(h) ocean disposal waiver from secondary treatment should be granted unless all indirect dischargers are in compliance with all applicable pretreatment requirements. Therefore, we support section 5(b) of H.R. 3282.

Third, anyone who knowingly or negligently introduces into a POTW or sewer system a pollutant or hazardous substance which causes, or which can reasonably be anticipated to cause personal injury or property or environmental damage, should be subject to criminal penalties.

Fourth, anyone who discharges a hazardous waste into a public sewer system should be subject to RCRA notification and enforcement provisions.

Finally, the problems of sewage sludge also should not be neglected. The proper management of sludge is frustrated by inadequate pretreatment.

The Clean Water Act should regulate sewage sludge as well as liquid effluent. Sludge use should be enhanced, not just "not be impaired" during the life of an NPDES permit.

EPA should identify and regulate toxic pollutants which may be present in sewage sludge that may adversely effect human health or the environment. Sludge quality standards are as necessary as water quality standards. Priority candidates should be hazardous wastes and constituents that are restricted from land disposal under H.R. 2867. Restrictions on land disposal of hazardous waste

should extend to land disposal of sewage sludge, where such restricted wastes have passed through the POTW into the sludge, without pretreatment as may be required by RCRA or the Clean Water Act. It makes little sense, in our opinion, to take one waste stream and subject it to stringent management controls if it is to be land disposed directly, but then leave it virtually unregulated if discharged into a sewer system. The Resource Conservation and Recovery Act [RCRA]—hopefully as amended by H.R. 2867—is now beginning to be effective to prevent future Superfund dumpsites. Extreme care must be taken that today's unintended weaknesses in the Clean Water Act do not become tomorrow's loopholes for those wishing to escape from RCRA. Toxic pollutants must be treated and destroyed wherever feasible, not shifted from the air to the ground to the rivers to the oceans, depending on enforcement priorities and the legislative reauthorization cycle. The Clean Water Act must protect the total environment.

In conclusion, effective implementation of the pretreatment program under the Clean Water Act is critical to the attainment of the national goal of eliminating toxic pollution of the environment. Envirite believes that the best strategy is to prevent toxics from entering into the environment, rather than rely on inadequate hazardous waste containment requirements or the assimilative capacity of the ocean, or on case-by-case numerical limits for dischargers into POTW's that may be impractical to implement and not be sufficiently protective of human health or the environment. Prevention by pretreatment is technologically achievable and cost effective, particularly compared to the costs of future hazardous waste site cleanups, contaminated drinking water, and irreversible ocean pollution.

Any change in the requirements of the pretreatment program will be disruptive. The consequences of disruption will have significance beyond the Clean Water Act. Envirite respectfully urges the committee and Congress to proceed with great caution before making any changes to the pretreatment program that will delay implementation, cause increased uncertainty in the treatment industry, and allow toxic pollutants to continue to be released into the environment that would otherwise be controlled by the existing pretreatment program.

Thank you.

Mr. ROE. I want to thank you for your testimony. I think it is very well put together. So I think it has been a great help to our committee. Of course, the one thing we are wrestling with is to try to figure out some way to get EPA to do the work they should do in a timely fashion. I am sure you are aware of that problem.

Mr. STENGEL. Yes, sir.

Mr. ROE. Do you have any questions?

Mr. STANGELAND. No.

Mr. ROE. I do not have any further questions. I think you summed it up excellently. We do appreciate your testimony, and we will be talking with you further.

Mr. STENGEL. Thank you.

Mr. ROE. Thank you very much for a job well done.

Mr. ROE. The subcommittee will recess until tomorrow morning at 10 o'clock.

[Whereupon, at 2:10 p.m. the committee recessed to reconvene at 10 a.m. the following day.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

WEDNESDAY, NOVEMBER 2, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to call, at 10 a.m., in room 2167, Rayburn House Office Building, Hon. James F. McNulty, Jr., (chairman of the subcommittee) presiding.

Mr. MCNULTY. Good morning. The meeting will come to order.

The hearings are continuing on possible amendments to the Clean Water Act. We expect Mr. Roe shortly, and he will take over when he arrives.

Mr. Stangeland.

Mr. STANGELAND. Thank you, Mr. Chairman.

It is a pleasure to be here again for the ninth day of this Congress Clean Water Act hearings. We have received a lot of valuable testimony and insight into the successes and shortcomings of this most important environmental statute. The information is essential for us to receive if we are to perform our legislative responsibilities in the best interest of the Nation.

I am certain this morning's witnesses will help us continue to build a thorough, honest Clean Water Act, Reauthorization Act record that is our goal. I thank all the witnesses this morning for being willing to devote their time and energy and look forward to receiving their thoughts on how we can make an excellent national clean water program even more effective than it is today.

Thank you, Mr. Chairman.

Mr. MCNULTY. Thank you, Mr. Stangeland, the ranking minority member of the subcommittee.

Mr. Smith.

Mr. ROBERT SMITH. Mr. Chairman, I want to welcome the witnesses here today and point out to you, Mr. Chairman, that what we lack in number we exceed in quality, especially in the Chair. I am proud to have you there.

Mr. MCNULTY. That is a compliment beyond due. And the two gentlemen that have spoken have been especially diligent in terms of attendance at these meetings, and the process is the better for it.

We would begin, then, this morning with a presentation from the American Paper Institute, National Forest Products Association. My agenda shows that Rodney Glover, the Manager of the Environmental Technology Regulatory Affairs at Procter & Gamble and

Chairman of the API/NFP, a Clean Water Act group, is to be our first witness.

Are you, Mr. Glover.

Mr. GLOVER. Yes, sir.

Mr. MCNULTY. Good morning, sir, and welcome. We would like to hear from you at this time.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

AMERICAN PAPER INSTITUTE

NATIONAL FOREST PRODUCTS ASSOCIATION

API NFPA Environmental and Health Program
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SUMMARY OF STATEMENT FOR THE RECORD

Pretreatment

1. Our experience with the pretreatment program to date, convinces us that changes to the program are needed if it is to be implemented effectively (pp. 5-8).

2. In the past, EPA has encouraged POTWs to require pretreatment of compatible pollutants as an alternative to adequate municipal waste treatment. To correct this problem, API/NFPA urge the Subcommittee to adopt a provision similar to Section 7 of S. 431 (pp. 8-11).

3. Because of the current level of POTW dissatisfaction with the removal credits program, and the likelihood that redundant treatment will result from the failure of POTWs to apply removal credits, API/NFPA urge the Subcommittee to revisit the Administration's proposal (or similar alternatives) to simplify the pretreatment program (pp. 11-14).

BAT/BCT Compliance Deadline Extension

1. The current July 1, 1984 deadline dates cannot be met due to EPA delay in promulgating effluent limitations guidelines. API/NFPA support an extension of the BAT/BCT compliance deadlines until three years after promulgation of the pertinent effluent limitations, or three years after July 1, 1983, whichever is later. We would not object to a cut-off date of July 1, 1987 (pp. 14-15).

Extension of the NPDES Permit Term

1. Extending the term of NPDES permits from five to up to ten years would be helpful in order to reduce the permitting work load on both EPA and permittees. API/NFPA support such a change (pp. 15-16).

2. If the permit term is extended to up to ten years, the existing permit reopener provisions in EPA's current regulations should be retained. API/NFPA oppose a mandatory permit reopener, except in the case of toxic pollutants (pp. 16-22).

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EPA Review of State-Issued NPDES Permits

1. API/NFPA believe that EPA review of all state-issued NPDES permits is no longer necessary, uses valuable staff time, and delays issuance of permits as a result of EPA-state disagreements over best engineering judgment permit conditions. We recommend, instead, a periodic EPA audit of the performance of state NPDES programs (pp. 22-24).

2. At a minimum, EPA should be required to implement the Section 402(e) and (f) waivers of permit review for certain categories of discharges (pp. 24-25).

Water Quality Standards

1. We believe that EPA's soon-to-be-published water quality standards regulations will resolve many of the concerns raised by the Agency's October 1982 proposal, while still making needed corrections in the water quality standards program. Congressional action in this area should be deferred pending a careful review of EPA's final regulations (pp. 27-38).

2. Section 6 of S. 431 raises serious concerns because it would: (1) reduce the flexibility necessary to administer the water quality standards program by codifying existing regulations (pp. 38-41); (2) freeze all measured water quality parameters in a stream, irrespective of the practical impact on ambient water quality or the needs of local aquatic communities (pp. 42-43); and (3) specify a strict antidegradation policy (pp. 43-44).

Estuarine Protection

1. API/NFPA do not generally object to Section 9 of H.R. 3282. However, this section should be clarified to: (1) make the creation of estuarine conferences a joint decision by EPA and the states; and (2) define the responsibilities of states that participate in these conferences (pp. 44-45).

Section 404 Dredged or Fill Permit Program

1. The Section 404 program is one area of the Act where a period of administrative stability is needed to achieve effective program implementation. Consequently, API/NFPA urge deferral of Congressional action at the present time (pp. 45-47).

Section 404 Dredged or Fill Permit Program (continued)

2. The specific changes proposed in Section 10 of H.R. 3282 are particularly troublesome in that they usurp legitimate Agency administrative responsibilities. Section 10 would: (1) substantially modify the standards used in the processing of Section 404 permit applications; and (2) freeze into law, complicated administrative procedures for interagency review of Section 404 permits. Both changes represent issues that should be left to regulatory agency discretion (pp. 47-49).

Nonpoint Sources

1. API/NFPA support H.R. 4037 with changes to: (1) clarify the "federal program consistency" provision; and (2) modify the "interstate conference" provision to make conferences consistent with existing programs (pp. 49-71).

Antibacksliding

1. Section 13 of S. 431 contains a far-reaching provision prohibiting renewed NPDES permits from containing any requirements or conditions less stringent than the previous permit. This proposal severely disrupts EPA's current NPDES permitting policy. It would forbid changes in permit requirements even when such modifications are justified by: (1) process or production changes; (2) mistakes in the original permit limitations; (3) changes in the quality of intake waters; or (4) other important variables. We urge the Subcommittee to reject this proposal should it be offered in the House (pp. 72-76).

Federal Common Law, the Resolution of Interstate Disputes, and Preservation of Other Rights

1. Some have proposed an amendment to offset a 1981 Supreme Court decision which held that the Clean Water Act preempts federal common law. We oppose such a provision. The Act already provides opportunity for public participation in permit proceedings, and for EPA consideration of the interests of all affected parties. Companies in compliance with Clean Water Act permits should not be subject to further liability under the uncertain standard of the federal common law of nuisance (pp. 76-79).

Federal Common Law, the Resolution of Interstate Disputes, and Preservation of Other Rights (continued)

2. S. 431 contains amendments to Sections 402, 505, and 511 of the Act designed to achieve ends similar to a "common law" amendment, by modifying the provisions governing: (1) interstate review of permits; and (2) citizen suits. The proposed standard of review in both amendments is unacceptably broad. We urge the Subcommittee to reject both of these amendments should they be offered in the House.

3. The "interstate dispute resolution" amendment would allow a downstream state to require EPA to review another state's permit in any case where there is "demonstrated harm to the interests of the affected state" (pp. 79-82).

4. The "preservation of other rights" amendment appears to create a new federal right of action (with jurisdiction in federal or state courts) for injuries caused by any "act or activity within the field covered by" the Act. Relief would be provided under applicable state statutory or common law in federal court (pp. 82-84).

Statement for the Record

of

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On Behalf of the

American Paper Institute

and the

National Forest Products Association

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Before the

Subcommittee on Water Resources

Committee on Public Works and Transportation

of the

United States House of Representatives

November 2, 1983

I. INTRODUCTION

Good morning. I would like to thank Chairman Roe and the members of this Subcommittee for allowing me to testify this morning on behalf of the American Paper Institute and the National Forest Products Association (API/NFPA) with respect to Amendments to the Clean Water Act (CWA).

My name is Rod Glover. I am manager of Environmental Technology and Regulatory Affairs for the Procter & Gamble Corporation in Cincinnati, Ohio. I also serve as Chairman of the API/NFPA Clean Water Act Task Group. API/NFPA are national trade associations representing over 2,000 member companies who own and manage forest lands, and manufacture pulp, paper, and solid wood products. API/NFPA members have a direct interest in the effective implementation of the Clean Water Act.

Since 1972, I have been personally involved in the implementation of the Clean Water Act through my employer's support for its objectives. As part of that effort, I have also been an active member of several API/NFPA water committees and task forces.

II. FOREST INDUSTRY SUPPORT FOR THE CLEAN WATER ACT

API/NFPA's concern with the country's water resources predates the 1972 Federal Water Pollution Control Act. API/NFPA support the Act, as modified by the 1977 amendments. The 1977 record demonstrates that we were one of the industry leaders in proposing reasonable and constructive changes to the Act. The implementation of the Act today reflects the mid-course corrections we recommended, and this Subcommittee adopted, in 1977. These corrections did not modify or delay any of the basic objectives of the Act, but made it more effective.

Clearly, the most far-reaching and important 1977 amendments to the Act were those which distinguish between the treatment requirements for toxic and conventional pollutants. In 1977, Congress recognized the need to address the problem of toxic pollutants while, at the same time, selectively reducing excessive regulation of conventional pollutants. Congress determined that the costs of additional treatment should not be excessive in light of the effluent reduction benefits to be achieved. Thus, Congress created the concept of BCT -- best conventional technology.

At the same time, Congress decided to retain technology-based limitations as the basic foundation of the Act. This is a decision that we supported in 1977. I want to make it very clear at the outset of my statement that this is a decision which API/NFPA continue to support today. More importantly, we see

no reason to move away from the technology-based approach of the 1972 Act as Congress commences the current review of the statute.

Over two and one half years ago, API/NFPA began an intensive review of the Clean Water Act in order to determine what changes, if any, are necessary to improve its effectiveness. We looked, in particular, for additional opportunities to apply the guiding 1977 philosophy of "avoiding treatment for treatment's sake."

After concluding our review, we believe that the Act can be more effectively focused in two ways: (1) eliminating costly and unnecessary requirements which do nothing to improve water quality; and (2) concentrating the decision-making process at the most efficient level of government to deal with a particular program -- often the state or local agency.

The amendments recommended by API/NFPA are few in number and modest in their impact. They constitute a further refinement of the Act. In the following statement for the record, we will discuss a number of changes which we advocate. We will also review those provisions of interest to us in (1) H.R. 3282, introduced by Public Works and Transportation Committee Chairman, James Howard; and (2) H.R. 4037, introduced by Congressman James Oberstar. In addition, we will reassess -- as will the Committee, we hope -- some of the amendments included in a package submitted by the Administration for consideration in the second session of the 97th

Congress. Finally, we will discuss a number of issues of concern to us that have been raised during the House and Senate Clean Water Act deliberations, to date.

III. API/NFPA PRIORITY LEGISLATIVE ISSUES

At the conclusion of our own review of the Clean Water Act, we identified four major areas where modest reforms would be helpful: (1) simplification of the pretreatment program; (2) extension of the BAT/BCT compliance deadlines; (3) lengthening the life of NPDES permits from five to up to ten years; and (4) eliminating redundant EPA review of state-issued NPDES permits. The first three of these issues are addressed by either H.R. 3282, S. 431 (reported by the Senate Environment and Public Works Committee on September 21, 1983), and/or the Administration's 1982 proposals. Below, we provide our views on the best way to deal with each area of concern.

A. Pretreatment

We are pleased that both Section 7 of S. 431, and Section 6 of the Administration's 1982 proposal recommend some changes to the pretreatment program. Changes to this program are considered to be among the most essential by the forest industry, as well as by other groups. The present program is clearly in need of redirection -- it has failed to get off the ground.

1. The Pretreatment Program -- Our Experience to Date

The forest industry supports the general concept of pretreatment of certain industrial wastes, as envisioned in Section 307(b) in the 1972 Federal Water Pollution Control Act. We recognize the need for pretreatment of industrial pollutants that: (1) are not susceptible to treatment in publicly-owned treatment works (POTWs); (2) would interfere with the operation of such a municipal system; or (3) would interfere with the intended disposal procedure for the sludge. Consequently, we did not object to EPA's 1973 regulations which implemented, for the first time, the so-called general pretreatment program.

In 1977, Congress amended Section 307(b) to provide POTWs with the opportunity to offer "removal credits" to their industrial clients. These credits would apply to any toxic pollutants which the POTW could effectively treat. Industries gaining removal credits from their POTWs would be able to offset them against their pretreatment requirements for the specified pollutants. EPA was charged with the responsibility of developing regulations to implement the removal credits provision.

The removal credits program, as envisioned by Congress in 1977, was complex but seemed workable. The credits were to serve as an incentive to both industry and the local community to encourage the construction and operation of cost-effective, regional treatment.

API/NFPA supported the removal credits approach in 1977. In our view, this provision was designed to serve as a continuing incentive for local industrial participation in POTW systems. In addition, removal credits were designed to assure that the removal levels which justified the local credits would be maintained by the municipality through the operation of a sound POTW operation and maintenance program, as well as an effective pretreatment program. Thus, the removal credits approach was designed to result in better POTW operation as well.

Unfortunately, after EPA promulgated the general pretreatment regulations in June 1978, it became obvious that the Agency's interpretation of the law was considerably different from ours. EPA failed to consult with the POTWs, or to take into account the basic needs of local agencies in framing these regulations. The regulations EPA proposed for removal credits were so complex and burdensome as to be unworkable.

In addition, EPA has, in some instances, encouraged local POTWs to force long-term industrial customers to install pretreatment for fully compatible pollutants such as Biochemical Oxygen Demand (BOD). This 1978 policy disregarded the stated objective of the act to encourage joint treatment of compatible wastes. This issue represents our industry's single, greatest concern with the program.

Litigation, followed by settlement negotiations, appeared for a time to have solved the worst of these problems. However, EPA failed to effectively implement the negotiated settlement with respect to compatible pollutants in the January 28, 1981 general pretreatment regulations (46 Fed. Reg. 9404). In addition, there is evidence that municipal treatment authorities such as Los Angeles and Chicago have now become convinced by EPA that it will be futile for them to implement the removal credit system.

On September 28, 1982, EPA published a proposal to revise the removal credit portion of the general pretreatment regulations (47 Fed. Reg. 42698). EPA made a considerable number of improvements in the removal credits system. API/NFPA appreciate the Agency's efforts to remedy the problems associated with the program. However, the proposed regulations -- while reducing some of the complexities of the January 28, 1981 regulations -- do not resolve the basic problems associated with the removal credits program.

The September 1982 proposal would allow POTWs to calculate removal of seven toxic, heavy metals plus cyanide on the basis of a "national removal rate." While this "national removal credit" will greatly reduce the demands on a POTW to develop its own credits, the list is extremely limited in size. Moreover, it is further constrained by requiring POTW compliance with secondary treatment in order to use the national credits. EPA estimates that more than 45% of all POTWs will be able to qualify for the national rates. The Association of Metropolitan Sewerage Agencies (AMSA) estimates, however, that the percentages will be far lower.

While simpler than the 1981 removal credits system, EPA's September 1982 proposal is still too complex in the view of AMSA and other interested groups. Without the willingness and ability of major POTWs to apply for (and implement) a removal credit system, the program will simply not work, confounding the Congressional intent to avoid redundant treatment.

In our view, the problems associated with the removal credits program are a reflection of basic statutory flaws in the pretreatment program. We believe that the issues described below can be effectively resolved only through legislative change. Specifically, API/NFPA believe that amendments to the current pretreatment program are needed to resolve two major concerns: (1) we have no assurance that EPA will not force POTWs to require pretreatment of compatible, nontoxic pollutants as an alternative to adequate municipal waste treatment; and (2) the toxics regulatory scheme requires redundant treatment of toxic pollutants, and does not have the support of the local agencies.

2. Redundant Treatment of Compatible Pollutants Must Be Avoided

In general, API/NFPA members that discharge into POTWs do not discharge toxic pollutants. Most of our industry effluents are characterized by the presence of conventional pollutants such as Biochemical Oxygen Demand (BOD) or total suspended solids. These pollutants are similar in many respects to domestic wastes, and are

compatible with POTW treatment capabilities. Thus, EPA policy, which has encouraged or required pretreatment of these conventional wastes, is of critical concern to API/NFPA.

The House/Senate Conference Report accompanying the 1972 Act clearly states that:

> Pretreatment of biological waste that is compatible with the treatment provided by a publicly-owned waste treatment plant into which such waste is introduced may not be necessary....In no event is it intended that pretreatment facilities be required for compatible wastes as a substitute for adequate municipal waste treatment works. (Leg. History; 1972 FWPCA; Vol. 1; page 313)

In our view, Congress was correct in encouraging the joint treatment of similar municipal and industrial wastes wherever possible, as the most cost-effective approach to regional treatment needs. In some cases, there is also a technical benefit to this approach. Many industrial wastes, although highly treatable and biodegradable in biological systems, lack nutrients such as nitrogen and phosphorus compounds. Domestic wastes have an excess of these compounds. It is, therefore, very efficient to treat both categories of wastes by mixing them in a common treatment facility.

However, EPA practice since 1978 has been to encourage cities with inadequate or poorly operated POTWs to require pretreatment of conventional pollutants by their customers, rather than to correct the problems of the POTW. Appendix A of this statement provides a case study outlining this problem.

API/NFPA recognize that, in some instances (for example: large volume, seasonal discharges), it may be less costly to require corrective measures at the industrial facility than to increase the size of a POTW. In addition, large, intermittent discharges of compatible pollutants may be disruptive to some POTWs, and may require some form of flow containment and controlled release. However, these types of determinations are best left to individual communities. They are not a matter that should be prejudiced by an EPA policy.

At the time of the 1979 settlement agreement discussed above, EPA agreed to include the following comment in the revised regulations:

> This provision is not intended to require pretreatment for compatible wastes as a substitute for adequate municipal treatment. When difficulties arrive in meeting NPDES permit conditions, it is the responsibility of the POTW to come into compliance with its permit. The POTW should consider a solution that is cost-effective and equitable and consistent with the goal of joint treatment.

As you may note, this comment is very similar to the language quoted earlier from the 1972 Act's Conference Report. It did not introduce a new or radical concept to the program. However, in the January 28, 1981 revised final regulations, EPA removed, without reasonable explanation, the above comment from the body of the regulations. The Agency simply noted in the preamble that it had been removed. Even though these elements of the

January 28, 1981 regulations were remanded to EPA for revision by the U.S. Court of Appeals for the Third Circuit on September 20, 1983, we have no evidence that the Agency is reconsidering this counterproductive past policy.

Consequently, we are pleased that language has been included in both S. 431 as reported by the Senate Environment and Public Works Committee, and the Administration's 1982 proposal, which makes it clear that Congress does not intend EPA to require pretreatment of compatible pollutants that could reasonably be handled by a well designed or operated POTW. We strongly urge this Subcommittee to adopt a similar measure in order to correct a vexing problem of long standing with EPA's administration of the general pretreatment program.

3. Priority Pollutants -- A More Efficient Approach Is Needed

As previously indicated, priority or toxic pollutants are not a major issue for our industry. However, we do have some potential concerns in this area. Moreover, we believe that EPA cannot implement a workable pretreatment program until there is a more effective, appropriate means of addressing controls for toxic pollutants. The complexity and rigidity of the current pretreatment program will only produce more delays in implementing any program for the pretreatment of toxic pollutants.

Other reviewers of the program have come to similar conclusions. The House Public Works and Transportation Committee's Oversight and Review Subcommittee concluded in December 1980 that:

> The [pretreatment] requirements are unworkable...and certain to lead to costs totally out of proportion to any environmental benefits derived. (House Rept. No. 96-1; page 41)

Further, in testimony before the House Water Resources Subcommittee in July 1982, EPA expressed the concern that the pretreatment program lacks the flexibility to recognize and reward local responsibility and expertise, or to provide incentives for expansion of the state and local role. The EPA Deputy Administrator, in his House testimony on July 27, 1982, further noted that:

> Municipalities and local authorities have come a long way in developing experience and ability to address local pollution control problems. We estimate that 80 percent of the large POTWs and 39 percent of the smaller POTWs have made substantial progress towards instituting adequate local pretreatment programs. Furthermore, our estimates indicate that 65 percent of the heavy metals and 37 percent of the toxic organics from indirect industrial discharges are currently being removed through local pretreatment efforts. (EPA Testimony, page 56)

It is important to note that these are 1982 figures. Additional POTWs have implemented pretreatment programs in the past eighteen months.

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Local POTWs should have the opportunity to demonstrate their ability to control toxic discharges. We supported the Administration's proposed changes to the pretreatment program in 1982. We also supported the concepts embodied in Section 7 of S. 431, as introduced on February 3 of this year. Both provisions recognize that a properly operated POTW, with sufficient safeguards (including adequate monitoring and enforcement), can effectively implement a pretreatment program.

Unfortunately, during Committee deliberations the Senate elected to delete provisions dealing with this problem. Consequently, S. 431 as reported does not address the important problem of redundant treatment of toxic pollutants under the current program.

The lack of Senate Committee action was more the result of the difficulty in agreeing upon a particular approach, rather than a perception that change is not needed. Indeed, the Report accompanying S. 431 recounts the difficulties with the present program and concedes that:

> Even though many Members of the Committee favored some type of modification, none could be agreed upon. An alternative program could not be found that could reasonably be expected to protect against pass through and sludge contamination without being so restrictive that no facility could apply. (Senate Rept. No. 98-233; page 5)

The September 20 Third Circuit decision has exacerbated, rather than resolved, many of the problems associated with EPA's current removal credits policy and combined waste stream formula. API/NFPA urge the Subcommittee to act affirmatively on a program designed to provide additional flexibility to POTW's in implementing pretreatment requirements. We believe that the Administration's 1982 proposal represents a good starting point for the Subcommittee's deliberations.

B. BAT/BCT Industrial Compliance Deadline Extension

The extension of the current July 1, 1984 BAT/BCT compliance deadlines represents an issue where there appears to be a general consensus concerning the need for Congressional action this year. Section 4 of H.R. 3282 amends the current Act to require compliance with BAT/BCT requirements within three years after EPA issues the effluent limitation guidelines pertinent to a particular industry. S. 431, as reported, takes a slightly different approach, requiring compliance with BAT/BCT requirements, "not later than three years after promulgation of the effluent limitations, or three years after July 1, 1983, whichever is later (but in no case later than July 1, 1987)." The Administration's 1982 proposal provided a simple extension of the current deadline until July 1, 1988.

All three of these proposals to extend the compliance deadline dates are realistic responses which take into account the delays experienced by EPA in promulgating BAT/BCT effluent

guidelines. Simply stated, industry will have insufficient time to meet the present compliance deadlines based upon EPA's published time schedule for promulgating the BAT/BCT effluent guidelines.

After reviewing each of the three proposals, API/NFPA support the approach taken in S. 431. In our view, S. 431 provides industry with a date certain and sufficient lead time to achieve compliance with BAT/BCT requirements, while still retaining a statutory compliance deadline to encourage EPA to move promptly toward promulgation of final effluent limitation guidelines for all industrial categories.

C. NPDES Permit Term and Reopener Provisions

The National Pollutant Discharge Elimination System (NPDES) -- perhaps more than any other Clean Water Act program -- has been complicated by numerous, and often conflicting, administrative reforms, rulemaking actions, and judicial decisions. Under current procedures, it may take up to three years to negotiate a five year NPDES permit for an industrial facility.

One change that would substantially reduce the current administrative burden associated with the NPDES program involves extending the term of NPDES permits to up to ten years. This concept is reflected in both the Administration's 1982 proposed amendments, and S. 431 as reported.

For EPA and the state agencies assigned the responsibility of issuing NPDES permits, extending the length of the permit would allow the staggering of permit renewals and, thus, reduce the annual permitting workload. This change would also prevent large permit backlogs from accumulating in the future.

In addition, from industry's perspective, the ten year permit would recognize that pollution control investments are expensive, and that once made, the discharger requires a reasonable certainty that his investment will have a useful life before he is required to make a new one. Moreover, the ten year term is particularly useful in providing an industry a longer time against which to write-off the cost of the pollution control equipment required by the permit.

The question of lengthening the term of the NPDES permit invariably raises the issue of appropriate reopener provisions to ensure necessary environmental protection. Section 10 of the Administration's 1982 proposal retains existing law and Agency procedures in this area, requiring that a permit be reopened when a new health-based toxic pollutant standard is developed under the provisions of Section 307(a) of the Act. API/NFPA support Section 10 of the Administration's 1982 proposal.

Unfortunately, the approach taken in S. 431 is substantially more complicated, and ultimately undesirable. S. 431 would modify Section 402(b)(1)(B) of the Act to extend the life of NDPES permits

from the current five-year term to, "fixed terms not exceeding ten years." The length of permits which involve waivers or other modifications would be left at five years. This change is similar to the Administration's proposal.

Our problems arise with the second portion of the amendment which would create a new Section 402(b)(1)(D) requiring that permits:

> (D) shall be promptly modified when new or revised requirements under Sections 301, 302, 303, 304, 307, 403, or 405 are established which are more stringent than any requirement in the permit or which control pollutants not limited in the permit and such modification implements these new or revised requirements. (Emphasis added.)

This provision creates a mandatory permit reopener any time there is a change in applicable effluent limitations, water quality standards, ocean discharge criteria, or sewage sludge disposal regulations.

Such a requirement would substantially affect EPA's existing permit modification and reopener provisions in the May 19, 1980 Consolidated Permit regulations. In our view, this amendment could work to destroy much of the stability of the current five year NPDES permit, rather than provide additional certainty through the ten year term. The change would put many NPDES permittees at a disadvantage compared to the present system.

Under EPA's current regulations, there are a number of situations which justify modification of an existing permit. A few are mandatory under the circumstances set forth in the regulations; others are permissive and can be triggered by a permittee. The causes which justify a permit modification are delineated at 40 CFR §122.15. In the introduction to this Section, the regulatory language states that, "if cause exists, the Director may modify or revoke and reissue the permit." (Emphasis added.)

Of greatest relevance to the proposed ten-year permit amendment, under the provisions of Section 122.15(a)(3), permit limitations based upon effluent limitations guidelines or water quality standards can be modified if the underlying guidelines or standards are changed. However, under the current regulations a permit writer's decision to reopen a permit is discretionary under these circumstances. Modifications are made at the request of the permittee and, thus, would not be automatically invoked. Section 122.15(a)(3)(i)(C) requires the permittee to, "request modification...within ninety (90) days after Federal Register notice of the action on which the request is based."

Looking at the issue more broadly, reopening and modifying a permit is a discretionary responsibility under all of the situations outlined in 40 CFR §122.15. As indicated above, the only mandatory reopener in EPA's current regulations is found at 40 CFR §122.62(b) and applies only to the health-based toxic pollutant standards

developed under the provisions of Section 307(a) of the Act. Section 122.62(b) of the regulations requires that:

> If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of CWA for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in the permit, the Director shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition. (Emphasis added.)

This is the only mandatory reopener in effect at the present time since even the Section 122.62(c) reopener for implementing more stringent BAT effluent limitations guidelines developed for toxic pollutants under Section 301(b)(2) is not required for any permit issued after July 30, 1981 (40 CFR §122.62(c)(2)).

Summing up, under EPA's current regulations -- which Section 10 of the Administration's proposal builds upon -- modification of NPDES permits is not mandatory to incorporate: (1) the requirements of more stringent effluent limitations guidelines for conventional and nonconventional pollutants; (2) the requirements of more stringent effluent limitations guidelines developed for toxic pollutants under the provisions of Section 301(b)(2) for any permit issued after July 30, 1981; (3) water quality based requirements for conventional and nonconventional pollutants; and (4) water quality based requirements for toxic pollutants unless these requirements are developed under the provisions of Section 307(a).

To date, no one has made a statement of any sort during Congressional review of the Act, indicating that EPA's existing permit reopener provisions are inadequate. The changes in S. 431 are without basis in the Senate's hearing record.

However, as is obvious from the above review, a mandatory reopener provision, as envisioned in S. 431, is substantially broader than EPA's current regulations. The proposal raises four major concerns.

First, the paper industry -- as well as a number of other dischargers of conventional pollutants -- hold existing, or are currently negotiating, Best Professional Judgment (BPJ) permits which may be less stringent than the Best Conventional Technology (BCT) effluent limitations guidelines which will be issued in late 1983 or 1984. Under EPA's current regulations, these permits would be allowed to run out their five-year term before new permit limitations based upon the guidelines are required.

S. 431, by contrast, would require that dischargers of conventional pollutants immediately reopen existing permits upon publication of applicable BCT guidelines. This concern would be shared by any industry that is awaiting its BAT guidelines, and: (1) has a large number of BPJ permits issued after July 30, 1981; or (2) is currently negotiating BPJ permits for toxic pollutants not covered by Section 307(a).

Second, S. 431 would require that a permit be reopened each time a new water quality standard is issued that affects the permit. Under EPA's current regulations, this is not required for conventional, nonconventional, or toxic pollutants not regulated under Section 307(a). Section 122.62(b) of EPA's regulations would impose this requirement for health-based toxic standards developed under Section 307(a). The additional uncertainty created by extending this requirement to conventional pollutants (for which there are numerous applicable water quality standards), as well as nonconventional pollutants, outweighs any of the benefits or economies to be gained by a ten-year permit.

Third, the mandatory reopener and immediate applicability of new effluent limitations guidelines and water quality standards will require permittees to negotiate detailed compliance schedules each time a change is made. Under the current regulations, for conventional, nonconventional, and Section 301(b)(2) toxic pollutant control requirements, a permittee can utilize the remaining life of his existing permit to begin the process of complying with any such new requirements.

Fourth, the principal advantages -- indicated above -- of a longer permit term involve: (1) the savings in staff resources; and (2) a greater degree of certainty. However, the mandatory reopener, with no flexibility for EPA, included in S. 431 would significantly increase the manpower burden necessary to respond to new permit

requirements, and certainly decrease the certainty associated with holding an approved, fixed-term, five-year permit.

In summary, S. 431 would confound, rather than simplify, the NPDES permit process. The mandatory permit reopener in S. 431 would make a virtual shambles of the carefully crafted reopener provisions in EPA's Consolidated Permit regulations. Such a reopener -- passed by the Senate Committee with little discussion, and no data to support its sweeping scope -- would involve EPA, the states, and permittees in endless series of permit negotiations with little or no attendant environmental benefit.

API/NFPA strongly oppose this provision of S. 431. We urge the Subcommittee, during its deliberations, to revisit the straightforward Administration proposal on this issue. Section 10 of the Administration's 1982 bill removes the burden of unnecessary permit processing requirements, while still maintaining existing reopener requirements essential to assure environmental protection.

D. EPA Review of State-Issued NPDES Permits

Since the regulations implementing the NPDES program were first issued in the early 1970's, thirty five states have moved to take responsibility for administering the program and issuing NPDES permits. A number of these states now have almost ten years of experience with the program. Nevertheless, EPA still reviews and approves each state-issued NPDES permit. This dual review of state

NPDES permits often involves EPA, state agencies, and permittees in time-consuming two or three way negotiations over best engineering judgment types of permit conditions.

In many cases, the state agency permit writer who is most familiar with local conditions is in the best position to render a technically correct decision on a particular matter. EPA's review serves only to delay the process, and expend valuable federal and state agency staff time.

API/NFPA believe that the time has come to step back and take a look at the proper role that EPA should play in the day-to-day administration and oversight of state-administered NPDES programs. The NPDES program has reached a sufficient level of maturity at the state level so that EPA review and approval of every state-issued NPDES permit are no longer necessary.

Rather, for those states that have effectively administered the NPDES program for more than three years, EPA's responsibility should become one of conducting a periodic program audit, rather than reviewing and approving either all, or selected, state-issued permits. If the periodic program audit turns up instances of ineffective state permit administration, EPA should have the right (after a hearing) to: (1) withdraw the state's permitting authority; or (2) return to reviewing and approving each state-issued permit for a probationary period.

This change will have two important advantages. First, the program audit would eliminate much of the manpower burden incumbent on EPA review and approval of state-issued NPDES permits. At the same time, EPA would still be assured an effective oversight role in reviewing state administration of the NPDES program. Second, permittees would no longer be caught in "best engineering judgment" disputes between state and federal permit writers on permit conditions not subject to uniform national standards.

We would like to work with the Subcommittee in developing an approach that would provide an option for periodic EPA audits of state NPDES programs, in lieu of EPA review of state-issued NPDES permits.

At a minimum, we urge the Subcommittee to consider modifications to Section 402(f) to require EPA to implement this section of the Act. Under the current law, EPA is required by Section 402(f) to promulgate regulations which identify categories of point sources for which the Agency will waive its review and approval of state-issued NPDES permits authorized under Section 402(d) of the Act. Even though Section 402(f) was passed as part of the 1972 Act, EPA has never developed regulations to implement the Section, nor identified categories of discharges for which the Agency will waive its review of state permits.

We suggest the following modification to Section 402(f) to reaffirm Congressional intent that EPA move to implement the requirements of this Section in an expeditious fashion:

> [The] Not later than 180 days after the enactment of the Clean Water Act amendments of 1983, the Administrator shall promulgate regulations establishing categories of point sources which he determines shall not be subject to the requirements of subsection (d) of this section in any State with a program approved pursuant to subsection (b) of this section. The Administrator may distinguish among classes, types, and sizes within any category of point sources.

In addition, in the case of states where EPA must still approve transfer of the NPDES program, we recommend the following amendment to Section 402(e) to accomplish a similar purpose:

> In accordance with guidelines promulgated pursuant to subsection (h)(2) of section 304 of this Act, the Administrator is authorized, and shall consider waiving as appropriate in the case of each State submitting a program under subsection (b) of this section, to waive the requirements of subsection (d) of this section at the time he approves a program pursuant to subsection (b) of this section for any category (including any class, type or size within such category) of point sources within the State submitting such program.

IV. ISSUES OF CONCERN TO THE FOREST INDUSTRY RAISED IN H.R. 3282

As introduced, H.R. 3282 raises three major issues of concern to API/NFPA. These include: (1) Section 6 which deals with

water quality standards; (2) Section 9 which authorizes the formation of interstate conferences to protect water quality in estuaries; and (3) Section 10 which alters current Section 404 permit processing procedures. Our concerns with each of these issues are discussed below.

A. Water Quality Standards

1. Section 6 of H.R. 3282 Would Codify EPA's Existing Water Quality Standards Regulations

Section 6(a) of H.R. 3282 requires the states to maintain designated stream uses in effect on January 1, 1983 unless a state demonstrates that: (1) the existing use is not attainable because of natural background; (2) the existing use is not attainable because of irretrievable, man-induced conditions; or (3) application of controls beyond BAT/BCT in order to attain existing designated uses would result in substantial and widespread adverse economic and social impact. These requirements mirror those found in EPA's existing water quality standards regulations (40 CFR §35.1550(c)(3)).

Section 6(a) also requires states to: (1) identify those waters where existing water quality exceeds the level necessary to support the existing designated use; and (2) upgrade the current water quality standards to preserve this level of water quality. This proposal goes even further than a requirement, currently

embodied in Section 35.1550(c)(2) of EPA's water quality standards regulations, that states must upgrade standards to reflect achieved stream uses not included as designated uses.

Finally, Section 6(b) would amend the current law to codify EPA's current antidegradation policy found at 40 CFR §35.1550(e). The proposed amendment would also include EPA's Outstanding National Resource Waters program in statutory language.

As outlined in greater detail below, API/NFPA oppose codification of EPA's existing water quality standards regulations. We understand that EPA will shortly promulgate final revisions to the current water quality standards regulations. Consequently, we believe that any Congressional action, prior to a careful assessment of EPA's final rules, is premature.

2. Background on the Development of the Water Quality Standards Program and EPA's October 1982 Proposed Regulations

Section 6 of H.R. 3282 follows closely on the heels of approximately one year of public comment and controversy over the Environmental Protection Agency's October 29, 1982 proposal to revise the current regulations governing the way in which states set water quality standards (47 Fed. Reg. 49234). Before discussing the merits of either Section 6 of H.R. 3282, EPA's October 29 proposal, or EPA's upcoming modifications to the regulations, we believe a brief review of the background behind the water quality standards

program would be useful to set the basis for our current deliberations.

At the outset of this review, we wish to point out that API/NFPA and EPA share a similar interest -- as expressed by the thrust of the proposed rule, EPA's subsequent actions, and our comments filed with the Agency. This common goal is to provide the states with the proper flexibility to evaluate the feasibility and desirability of attempting to attain designated uses which, in certain cases, may: (1) have been inappropriately derived; (2) not reflect local water quality conditions; and (3) be very costly to attain.

As you know, water quality standards consist of designated uses and numerical criteria to reflect those uses. Designated uses should be defined in a fashion consistent with naturally occurring local conditions. There are, for example, segments of streams flowing from swamps that have never had a high dissolved oxygen level. States must have the latitude to reflect such conditions -- as well as others, such as seasonal variations.

Similarly, numerical criteria must be derived to reflect the needs of the aquatic community that could normally be expected to exist in a specific stream in the absence of pollution. For instance, numerical criteria must be calculated in a manner that accounts for the differing needs of a trout in Michigan and a smallmouth bass in Georgia.

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Because of the natural differences in local requirements, EPA's emphasis on "uses" is the appropriate approach to measuring water quality. For example, dissolved oxygen levels above those which meet all needs of the local aquatic population serve no environmental benefit.

Neither we nor EPA support the alteration of existing stream uses, or the downgrading of designated uses that are technically and economically feasible to attain. Specifically, designated uses should not be removed to facilitate industrial expansion. Nor should we cease our efforts, where feasible, to achieve higher uses.

We understand the controversy caused by some of the language in EPA's proposal. Valid concerns were raised during the comment period. We understand that the Agency has substantially modified the proposed regulations to resolve these concerns.

However, looking back over the development of the current program, there is clearly a need for some modifications at the present time. When Congress passed the Federal Water Pollution Control Act in 1972, the statute placed primary reliance for the clean-up of the nation's waters on nationally-developed, technology-based, effluent standards. At that time, the state-of-the-art for site-specific regulation through water quality standards was such that the then-existing 1965 Clean Water Act was not achieving results as quickly as desired by Congress, EPA, or the general public. In fact, by 1972, a number of states had not yet commenced the development of standards for intrastate waters.

Thus, the 1972 Act required the development of technology-based guidelines for industrial dischargers to be implemented through the National Pollutant Discharge Elimination System (NPDES) permit program. The Act continued the water quality standards program because Congress recognized that, in some instances, technology-based guidelines alone would not be sufficient to clean up a stream segment entirely. States, after determining the location of these badly polluted stream segments would (under the framework of the 1972 Act) impose additional requirements in order to assure that these streams would move toward the 1983 goal of fishable and swimmable waters where attainable.

The legislative history of the 1972 Act contains many statements that water quality standards would remain an integral part of the clean-up program -- not to be used across the board instead, or after the application, of technology-based requirements -- but in conjunction with them as needed on a case-by-case basis. For example, the House floor manager for the Conference Report accompanying P.L. 92-500 indicated that, "it [Section 303] is intended to be a supplement to the 1977 and 1983 requirements." (Leg. History; 1972 FWPCA; Vol. 1; page 246)

Similarly, the Senate floor manager's statement accompanying the Conference Report noted that:

> The Administrator should assign secondary priority to this [Section 303] provision to the extent that limited manpower and funding may require a choice between a water quality standards process and early and effective implementation of the effluent limitation permit program. (Leg. History; 1972 FWPCA; Vol. 1; page 171)

In implementing the 1972 Act, EPA followed this directive, placing the lion's share of Agency resources against the formidable problems of: (1) implementing the NPDES permit program; (2) developing technology-based BPT and BAT effluent guidelines; and (3) administering the municipal construction grants program. Coupled with the limited stream data available in 1972, and the states' lack of expertise in standards setting, EPA's preoccupation with more pressing concerns resulted in the water quality standards program taking an understandable second priority to the other programs mentioned above.

This problem was compounded by the limited guidance that EPA did provide the states regarding the derivation of water quality criteria and the designation of stream uses to develop water quality standards. Often, this guidance was inflexible with respect to considering site-specific water quality conditions.

For example, in July 1978, EPA announced that the Agency would follow a policy of "presumptive applicability" for its laboratory-derived, Red Book water quality criteria. Presumptive applicability meant that a state had to adopt a criterion for a particular water quality parameter at least as stringent as the

recommendation in the Red Book unless the state was able to justify a less stringent criterion based on natural background conditions, more recent scientific evidence, or local site-specific information. The Red Book criteria were imposed upon the states even though they were never subjected to public or scientific peer review.

As a consequence of presumptive applicability of the Red Book Criteria, some states were forced into designating uses that do not, at the present time, reflect the capabilities of local waterbodies. In many cases, states were compelled to develop standards for stream segments before an adequate data base was developed to justify the action. While EPA officially withdrew the policy of presumptive applicability in November 1980, a number of EPA Regions still seem to apply the policy during the review of state water quality standards.

Thus, API/NFPA believe that the lack of water quality data and state expertise, combined with inflexible EPA guidance, resulted in the development of standards -- during the early and mid-1970's -- which often do not reflect site-specific stream conditions. To save time and avoid conflicts with EPA, states often extracted water quality criteria directly from EPA's Red Book criteria.

For example, at a December 14, 1982 EPA hearing on water quality standards, Harold Sawyer, the Administrator of the Water Quality Division of the Oregon Department of Environmental Quality stated that:

> I reject outright the assumption that standards that are adopted today were in all areas, every stream, every reach, adequate, based on sound data, because they were not. And if we then assume that because they were adopted you are somehow prohibited from factoring in the more specific data and adjusting those standards up or down to reflect the better data, because it is a downgrading or because it is something else, then we really have a problem with the program and the credibility of it.
>
> We find ourselves frequently trying to set priorities on that basis where there are procedural requirements in current regulation that tend to force you into some kind of a process now that doesn't gain anything but burns up resource. A review of standards on a statewide basis every three years is certainly not a very productive use of a very limited resource.

Thus, where it has occurred, this type of standards development has resulted in standards that exist on paper but are difficult to implement on individual stream segments. In some cases, these standards have been used as ambitious but ambiguous goals, rather than enforceable requirements. Some of these standards have been improperly derived. In a few cases, they were derived properly, but will be extremely difficult and far too costly to implement.

As we move beyond the broad-scale application of technology-based standards, to superimpose water quality-based permit requirements on individual stream segments, attaining these standards will be very questionable. EPA has made the same point at a House Water Resources Subcommittee hearing on water quality standards on February 23, 1983. Former EPA Assistant Administrator, Frederick A. Eidsness, Jr., stated that:

> Immediately after the passage of the 1972 Clean Water Act amendments, most States adopted fishable and swimmable use classifications for their rivers, lakes and streams. This was sometimes done without adequate analysis concerning what constituted a fishable use given the chemical, physical and biological characteristics of a particular water body. Experience has shown that, in some cases, a particular use, such as a trout fishery, cannot be attained because of hydrologic conditions or physical modifications of the stream. In some instances, the occurrence of pollution prevents the use from being attained.

Appendix B of API/NFPA's testimony provides case studies where improperly derived standards that are not reflective of local stream conditions were imposed through EPA's inflexible policies on water quality criteria. They also represent cases where increased technology, forced by incorrect standards, at increased cost, does nothing to protect the environment. The attached case studies represent examples where our industry has been directly affected by the problems EPA describes above.

Notwithstanding these start-up problems, the water quality standards program has and continues to evolve as EPA and the states gain more data and expertise. All 57 states and jurisdictions have approved water quality standards for commonly regulated pollutants such as Biochemical Oxygen Demand (BOD), ammonia, and phosphorus. Substantial additional data have been collected, providing the states with a longer and more detailed baseline for the development of site-specific criteria where needed.

For example, through the Section 208 planning process, the states have compiled considerable information on water quality conditions and problems on specific stream segments. The states' Section 305(b) reports have likewise resulted in the development of a substantial information base for identifying priority stream segments and developing site-specific criteria and standards. Finally, the states have collected a great deal of water quality data from: (1) industrial discharge monitoring reports (DMRs); and (2) federal, state, and industrial water quality studies for NPDES permit renewals, and for locating new sources. In short, a number of data collection programs which did not exist in 1972 now provide a part of the base for the development of more precisely derived, site-specific criteria, to form the basis for credible water quality standards.

Thus, API/NFPA believe that the program has matured to the point that states are now in a much better position to review and revise their standards in a technically sound fashion. The water quality data base that will drive the state review has had the benefit of ten years of further development. In the context of what the Act originally envisioned -- site-specific standards on priority segments to direct regulatory decisions in conjunction with technology-based controls as contemplated by Congress in 1972 -- the state agencies now, by and large, have the necessary experience and expertise.

We concur with the Association of State and Interstate Water Pollution Control Administrators' (ASIWPCA) testimony at a January 20, 1983 EPA hearing on water quality standards. ASIWPCA stated that:

> The states have now had more than ten years experience in water quality management using technology-based effluent requirements and water quality standards. During this time, the states accumulated substantial experience and data with which to develop defensible, credible water quality standards.

In summary, the water quality standards program must be addressed today in the context of a program that: (1) has not been subject to legislative oversight or scrutiny since 1972; (2) started slowly because Agency, Congressional, public, and industry resources were placed elsewhere; (3) progressed fitfully at times due to insufficient data, lack of agency expertise, and inflexible requirements sometimes forced upon the states; but (4) has, nonetheless, shown progress and evolved to the point where the states are ready, with additional guidance, to implement the next stage of the nation's water pollution control program.

The nature of this additional guidance is the subject of EPA's October 29, 1982 proposed regulations, EPA's more recent regulatory proposal, and Section 6 of H.R. 3282. We welcome these initiatives as needed opportunities to discuss the role of water quality standards (in site-specific regulation) after the implementation -- now near to completion -- of uniform, nationwide, technology-based controls.

As mentioned earlier, in revising the existing regulations which set forth the requirements for the development of state water quality standards, EPA initiated a review of regulations which have not been materially changed since November 1975. In revising and updating these regulations to reflect the maturation of the water quality data base, and state decision-making capabilities, it was not the Agency's intent to embark on a radical, new direction for the water quality standards program.

Indeed, in describing the October 29 proposal, EPA noted in the preamble to the regulations that:

> The proposed changes reflect experiences gained in the program by both EPA and the States. The changes increase the flexibility of the States to:
>
> - review and revise, as appropriate, water quality standards on priority water bodies or segments as necessary rather than reviewing all standards statewide every three years;
> - set site-specific criteria rather than adopt Section 304(a) criteria guidance;
> - remove or modify impaired uses based on analyses of the attainability of the uses and on benefit-cost assessments, if appropriate, rather than maintain use designations which cannot be met.
>
> These changes will enable States to use water quality standards as a pragmatic tool in improving water quality where necessary to protect water uses. (47 Fed. Reg. 49234)

Thus, EPA's proposal represents one attempt to reflect the evolution of the program by providing additional flexibility to

develop site-specific standards which reflect local water quality conditions on priority water bodies. However, neither the specific language, nor all of the concepts in EPA's proposal are sacrosanct. Rather, they are portions of an Agency proposal which has changed as the rulemaking proceeds. EPA's proposed regulations were subjected to considerable public and Congressional scrutiny as the Agency moved forward.

We understand that EPA will shortly issue final regulations which will: (1) respond to the more than 1400 public comments on the October 1982 proposal; and (2) resolve many of the public concerns raised by certain elements of EPA's October 1982 proposal. API/NFPA urge that <u>any</u> Congressional action in the water quality standards area be deferred until after the public has an opportunity to carefully analyze EPA's soon-to-be-issued final regulations. Moreover, the specific provisions embodied in Section 6 of H.R. 3282 would be particularly troublesome notwithstanding the awkward timing of this legislative proposal.

3. <u>API/NFPA Have Serious Reservations Over Section 6 of H.R. 3282</u>

a. <u>H.R. 3282 Would Reduce Administrative Flexibility and Further Delay the Implementation of Workable Water Quality Standards</u>

One major purpose behind EPA's October 29, 1982 proposal is to provide the states with sufficient flexibility to develop water

quality standards that are truly reflective of the needs and conditions of specific stream segments. As we note above, EPA's past lack of flexibility in this area has resulted in the state development of water quality standards that do not accurately represent site-specific stream conditions.

We are most concerned that statutory codification of EPA's present water quality standards regulations will: (1) delay the development of revised water quality standards by states as EPA struggles with a third revision of the program regulations -- this time to implement Section 6 of H.R. 3282; (2) set the basis for successive rounds of litigation which may move the water quality standards program in a direction not presently anticipated by the Subcommittee; and (3) discourage states from undertaking any revisions to current improperly set water quality standards because of a lack of federal consensus on an appropriate national policy in this area.

b. H.R. 3282 Would Eliminate the Administrative Flexibility for the States' Development of Site-Specific Water Quality Criteria

API/NFPA concur with EPA's decision to encourage states to develop site-specific criteria to reflect local conditions. EPA has properly concluded that the existing Red Book laboratory-derived criteria, developed under Section 304(a), do not always accurately reflect the adverse impact of a pollutant because of the effects of local water quality characteristics or the varying sensitivities of

local aquatic communities. In conducting this review, EPA has also recognized that adaptive processes may enable a viable, balanced aquatic community to exist in water with high natural background levels of certain pollutants.

EPA is likewise correct in concluding that the development of site-specific criteria is an important method of taking local conditions -- including variations in stream flows over time -- into account. This flexibility will ensure that the criteria developed by the states will be adequate to protect properly designated uses, but that they will not be more stringent than needed. EPA requires that any changes to existing criteria must be justified by acceptable scientific procedures.

API/NFPA believe that the advances, described earlier, in the states' capabilities and the water quality data base make EPA's October 1982 proposal a timely attempt to move the states toward a fuller utilization of the data that have been collected.

One indication of the capability of states to develop, and properly utilize, site-specific criteria is provided by the testimony of the Georgia Department of Natural Resources (DNR) at the December 7, 1982 EPA hearing on water quality standards. Leonard Ledbetter, Director of the Environmental Protection Division of the Georgia DNR indicated that the state:

> Has no intention of proposing or allowing changes in the Georgia Water Quality Standards which will in any way detract from the past progress in water pollution abatement in Georgia or in our plans for continued progress in the future. However, the proposed regulations will provide flexibility to Georgia and the other States to improve upon this progress. The flexibility to set site-specific criteria will enable the State to perform stream studies to establish scientifically defensible criteria in a small South Georgia stream with a dissolved oxygen level of 3.4-4.0 mg/l, the proposed regulations will allow this criteria to be established for this stream, but only after the appropriate studies, public hearings and Environmental Protection Agency approval. This, in turn, may permit a city to use a conventional water pollution control facility to achieve the fishing classification rather than invest in expensive advanced treatment facilities to achieve the same result.

We are concerned that the thrust of Section 6 will discourage the states from moving toward the development of site-specific criteria, and instead encourage the indiscriminate application of the nationwide, Red Book criteria. H.R. 3282 does not reflect the site-specific nature of the uses and capabilities of individual stream segments. Rather, the proposed amendment retains the program's unfounded past emphasis on the implementation of uniform standards throughout the country. By making it more difficult for the states to modify existing standards, H.R. 3282 would effectively destroy much of the momentum and effort expended toward assisting the states to develop site-specific water quality criteria.

c. H.R. 3282 Would Substantially Shift the Emphasis of the Current Program from the Maintenance and Achievement of Designated Stream Uses to the Preservation of All Measures of Ambient Water Quality

Section 35.1550(c)(2) of EPA's current water quality standards regulations requires that:

> The State shall maintain those water uses which are currently being attained. Where existing water quality standards specify designated water uses less than those which are presently being achieved, the State shall upgrade its standards to reflect the uses actually being attained. (Emphasis added.)

API/NFPA support this requirement, and urged its inclusion in EPA's final revisions to the October 29, 1982 proposal. We understand that EPA has decided to retain this provision in its soon-to-be promulgated final rule. Such a requirement will be necessary to capture, in water quality standards, those stream uses which will be realized as industry installs BAT/BCT technology, and municipalities achieve secondary treatment.

Section 6 of H.R. 3282, however, imposes a substantially different requirement. Section 6 would amend the current Act to assure that:

> Each State shall identify those waters within its boundaries the quality of which exceeds the level necessary to support the designated uses contained in any existing water quality standard applicable to such waters. The State shall revise any such water quality standard with respect to waters so identified as necessary to preserve such quality. (Emphasis added.)

This proposal would eliminate EPA's emphasis on the protection of designated uses. It would, instead, require the states to preserve all numerical measures of ambient water quality, irrespective whether the increment of water quality in question contributes in any way to the maintenance of either existing or potential stream uses. In a stream where all organisms can flourish with a dissolved oxygen (DO) limit of 5.0, an 8.0 DO is no more useful than a 7.0 DO. Such an approach would mandate the preservation of water quality for its own sake without regard to the needs of the local aquatic community.

d. H.R. 3282 Would Confound Implementation of EPA's Antidegradation Policy

Section 6 of H.R. 3282 contains the first specific statutory Clean Water Act language for an antidegradation policy. The proposed statutory language is virtually identical to the current regulatory policy for antidegradation found at 40 CFR §35.1550(e)(2) of EPA's present water quality standards regulations. The Agency maintains that the statutory basis for the current antidegradation policy is found in Section 101(a)(1) and Section 303(c)(2) of the Act. Since 1975, EPA has sustained this policy, as authorized by the statute, in the face of at least one unsuccessful legal challenge. The states have included the policy in their water quality standards.

Notwithstanding this record of progress in implementing the current regulatory antidegradation policy, statutory codification of

EPA's existing regulations raises a number of concerns with respect to the likely flood of litigation that will follow EPA's attempt to interpret and implement this new statutory requirement. For example, under EPA's current regulations, the designation of Outstanding National Resource Waters is a discretionary responsibility that the states may choose to implement. Under the requirements of Section 6, however, it is not clear that this represents a discretionary responsibility. In addition, Section 6 is vague with respect to most other aspects of the implementation of this new program.

In our view, the need for statutory codification of EPA's antidegradation policy has not been demonstrated. API/NFPA urge the Subcommittee to delete this portion of Section 6.

B. Estuarine Protection

Section 9 of H.R. 3282 amends Title III of the current Act to establish a mechanism to convene state and interstate management conferences designed to provide additional water quality protection for estuarine areas. API/NFPA do not object to the basic thrust behind this proposal. However, we have two concerns with the specific language included in Section 9.

First, we believe that the estuarine management conferences envisioned in the proposal should be convened at the call of one or more of the states responsible for the protection of water quality

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in the estuary in question. The formation of a conference should then be subject to the approval of the Administrator. In light of EPA's review and approval of state NPDES permits, water quality standards, and local municipal waste treatment programs, we see no need for EPA to have the authority to unilaterally trigger an interstate conference mechanism. Giving states some responsibility in convening the conference will also assure that estuaries with significant problems are chosen.

Second, API/NFPA believe that Section 9 should be clarified to specify that the recommendations provided by the estuarine management conferences shall not contravene state NPDES permits, water quality standards, or nonpoint source control programs. The state or states in which the estuary is located should have the primary responsibility for implementing the recommendations of the conference in concert with existing state water quality programs. Disputes over interstate estuaries should be resolved through existing procedures already provided in Section 401 and Section 402 of the Act. Finally, the findings and recommendations of any management conference should be coordinated with the existing planning programs authorized under Sections 201, 208, 209 and 303 of the current Act.

C. <u>The Section 404 Dredged or Fill Permit Program</u>

Section 10 of H.R. 3282 would amend Section 404 of the current Act in two significant respects. First, Section 404(b)

would be amended to include a new statutory criterion for evaluation of a Section 404 permit application. This criterion is patterned after a standard of review currently embodied in 40 CFR §§230.1(c), 230.10(a), and 230.10(c) of EPA's December 24, 1980 Section 404(b)(1) environmental guidelines.

Second, Section 10 would amend Section 404(q) of the current Act to write into law, permit processing procedures similar to those required by March 1980 Memoranda of Agreement among the federal agencies involved in the review of Section 404 permits (i.e., the Army Corps of Engineers, EPA, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service). This amendment is apparently designed to reflect Congressional disfavor with July 1982 revisions to the March 1980 MOA's. The relevant agencies processed these revisions after receiving public comments on opportunities to streamline the permit program.

API/NFPA oppose such changes at this time. As the Subcommittee knows, API/NFPA have been deeply involved, since 1975, in the implementation of the Section 404 program. We have testified on this program in 1975, 1976, 1977, and 1979.

As a result of this Subcommittee's efforts in 1977, many normal forestry, farming and ranching activities are currently exempt from Section 404 permit requirements. Therefore, our industry faces neither the degree of exposure to the program that we did in the past, nor the exposure presently faced by some other industry groups.

We support much of the current effort to make the Section 404 program more efficient through the regulatory reform initiatives undertaken by this Administration. We believe, however, that legislative change to the Section 404 program is premature at this time. The regulatory reform process should run its course. The program needs a period of relative administrative stability before a comprehensive Congressional review is begun.

Legislative action on Section 404 may ultimately be necessary. However, we believe that efforts to address the program in a piecemeal fashion will only complicate an already controversial federal regulatory effort. Unfortunately, the two amendments contemplated in Section 10 of H.R. 3282 would have just this effect.

For example, Section 10(a) would write into law <u>one</u> of the standards of review that field level permit writers must apply against permit applications. Such an amendment would presumably elevate this particular standard above all the other criteria and findings that make up a Section 404 permit review. Moreover, by moving this standard of review from Corps enforcement policy to a statutory requirement, Congress would eliminate all flexibility for a field level permit writer to balance conflicting concerns in a permit decision. Finally, establishing a new statutory standard of review will undoubtedly result in a substantial increase in litigation over Corps Section 404 permit decisions.

Section 10(b) would amend Section 404(q) to freeze indefinitely interagency procedures for permit review that are still evolving toward increased environmental effectiveness and administrative efficiency. Congress originally passed Section 404(q) in 1977 to indicate Congressional concern over the length of time required to process Section 404 permits. Section 404(q) required the federal agencies involved in reviewing Section 404 permit applications to develop Memoranda of Agreement with the Corps of Engineers to expedite the processing of Section 404 permits. To the extent feasible, permit decisions were to be made within 90 days of permit application.

Unfortunately, these Memoranda of Agreement were not first issued until March 1980. Even then, their impact in reducing Section 404 permit processing time was questionable. In July 1982, the Subcommittee heard considerable testimony on the Section 404 program. Reviewing the permit processing statistics submitted by environmental group witnesses during these hearings, we note that there has been no significant reduction in average permit processing time from fiscal year 1977 through fiscal year 1981.[1]

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[1]See, for example, the July 28, 1982 statement before the Subcommittee of Hope M. Babcock, Deputy Counsel of the National Audubon Society. Table 4 of the statement provides average permit processing times for FY 1977-FY 1980. These data provide three interesting pieces of information: (1) average processing time has not changed significantly since before passage of the 1977 Act; (2) even after deleting permits which require EIS's, the average time is still substantially in excess of the 90 days established as a goal by Section 404(q). Permits which require EIS's are, by far, the most time consuming, and would raise the average processing time further; and (3) while the March 1980 MOA's had no appreciable effect on reducing the average permit processing time, the number of relatively time-consuming, "controversial" permits increased significantly after issuance of the MOA's.

The July 1982 revisions to the MOA's were one attempt to fulfill the mandate of Section 404(q) to reduce permit processing time. As the agencies gain more experience with the program, it is ineluctable that permit processing procedures will, and should, continue to change. We believe that the proposal in H.R. 3282, to freeze into law, one set of procedures will significantly reduce the administrative efficiency of the Section 404 program, as well as the ability of the agencies involved in its implementation to respond to changing circumstances.

In sum, we believe that both of the proposals in Section 10 to amend the Section 404 permit program are ill-founded. Both proposals delve into areas of administrative procedure where Congressional mandates are least efficient, and agency discretion is most necessary. We urge the Subcommittee to defer action on this issue pending a comprehensive review of the effectiveness of the Section 404 program -- perhaps conducted by the full Committee's Investigation and Oversight Subcommittee.

V. H.R. 4037 AND THE CONTROL OF NONPOINT SOURCES OF POLLUTION

One issue that has already received considerable discussion during the current Congressional review of the Act involves the control of nonpoint sources of pollution. The Senate Committee reported a measure designed to provide federal financial support to states in order to assist the implementation of nonpoint source

control programs. H.R. 4037, introduced by Congressman James Oberstar, takes a similar approach. We anticipate that other alternatives will be discussed as the Subcommittee's deliberations proceed.

Our commitment to reasonable nonpoint source control programs has been reflected in our support for the Section 208 planning process under the 1977 Clean Water Act. We are interested in controlling nonpoint source pollution in order to: (1) foster good forest management; and (2) avoid, at our manufacturing facilities, unnecessary treatment -- beyond Best Conventional Technology -- for Biochemical Oxygen Demand and suspended solids on streams where uncontrolled nonpoint sources contribute to these water quality problems.

Much of the interest in the water quality impacts of forestry activities has been focused, in recent years, through the Clean Water Act's Section 208 program. Through Section 208, EPA fostered active programs in a number of states to: (1) assess the impacts of forestry activities on water quality; and (2) devise management practices and control programs, where necessary, to achieve water quality goals.

The results of state Section 208 planning efforts to date have shown considerable variation in programs from state to state. This variability makes it very difficult to draw any generalizations

about the 176 areawide and 49 state Section 208 planning programs. However, based upon the data base developed as a result of the Section 208 planning process, we believe that a general perspective on the water quality impacts associated with silviculture activities has been gained by EPA, the states, and the forest industry.

A. Impact of Forestry Activities on Water Quality

In general, water from forest lands is of high quality and supports the most sensitive water uses. For example, almost all western, and most eastern, cities have municipal water supplies in forested areas. In addition, trout and salmon fisheries depend upon high quality water from forested watersheds.

Based on existing water quality data, which in many cases are admittedly still incomplete, silvicultural activities have not been considered a major, overall, nationwide water quality management issue. However, forest management practices which potentially impact water quality on a localized basis are recognized. These difficulties are usually caused by improper application of forestry practices such as logging road construction, skid trail location, and certain types of site preparation for replanting trees. However, the type and severity of the problems, as well as the nature of the particular silvicultural activity causing the difficulty, vary considerably from state to state due to topography and other local conditions. There is considerable variability even within states in some areas.

In most cases, sediment is considered the primary source of pollution from forestry activities. However, the 1978 study report of the Society of American Foresters' Clean Water Act Task Group indicates that sediment from forest lands is estimated to be less than 4% of the total man-caused sediment in the nation's water. This is particularly significant considering that there are 718 million acres of forested land in the United States, constituting approximately one-third of the total land area.

A reflection of the magnitude of the problem caused by silviculture is the fact that only ten of the 225 Section 208 planning agencies, in their initial problem assessment, identified forestry activities as a priority problem to be addressed by the Section 208 program. In other cases, Section 208 planning agencies have identified either problems which are geographically localized, or problems caused by specific types of activities. While not priority problems, these localized difficulties were addressed during the Section 208 planning process.

B. Forest Industry Involvement in the Development of Nonpoint Source Control Programs Under Section 208 of the Clean Water Act

In November 1975, EPA issued the first in a series of regulations and guidance materials that required the states to utilize the Clean Water Act's Section 208 planning process as the primary mechanism for addressing nonpoint source pollution problems from silviculture, as well as from a number of other sources (40 Fed. Reg. 55335). Since the development of these EPA policies,

the forest industry has assisted in the implementation of the Section 208 process nationally, regionally, and on a state-by-state basis. Nationally, API/NFPA have maintained an active program dealing with Section 208 planning since 1975.

From an industry perspective we feel that our involvement with EPA and other agencies at the national level has been positive in terms of working toward reasonable and effective Section 208 programs. One index of the nature of our involvement at the national level is that API/NFPA supported reauthorization and continued appropriations for the Section 208 program, through the completion of Section 208 plan development in 1980.

In addition, API/NFPA have developed a cooperative research program on forest practices and water quality with the National Council of the Paper Industry for Air and Stream Improvement (NCASI). At your later hearihg on nonpoint sources, we would like to share some of the most recent results of our resaerch contained in NCASI's January 1983 report, "Summary of Silviculture Nonpoint Source Control Programs - 1982." This report provides the best information available from any source on the current status of Section 208 silviculture programs in the various states.

At the regional level, a number of forestry associations have organized forestry involvement in the Section 208 process, and provided a forum for the exchange of information on the progress of Section 208 planning in each state. However, due to the nature of

the Section 208 program, most of the action has taken place at the state level. In almost every state with a substantial forest land base, the forest industry has contributed to the Section 208 planning process by providing its expertise, cooperating in assessment studies, and even funding studies of management options.

There are almost as many different varieties of Section 208 programs for silviculture nonpoint source control as there are states that worked with the silviculture category. The variation in these programs strongly reflects: (1) the nature, type, and extent of the problem identified in each state; (2) the nature of the ownership of the forest land base; (3) the differences in analyses as to the most effective way to reach those operators or landowners causing the problems; and (4) the nature and effectiveness of existing institutional arrangements for implementation in each state. With at least this many variables to consider, the differences in the types of state programs adopted should come as no surprise.

Our involvement with the Section 208 program, NCASI's research in this area, and our review of a number of legislative proposals introduced to date, suggest at least nine discreet issues which must be considered in framing any new federal initiative to deal with nonpoint source pollution. Below, we review each of these issues in an attempt to assist the Subcommittee in drafting a broadly acceptable, and workable nonpoint source pollution control amendment.

C. Questions Which Must be Addressed in Framing New Federal Initiatives on Nonpoint Sources

1. Should Additional Federal and State Efforts to Control Nonpoint Source Pollution Build on the Section 208 Planning Process?

It is our position that the completed Section 208 nonpoint source control plans should, to the extent possible, serve as a springboard for further development and implementation of nonpoint source management practices. In most cases, state plans developed through the Section 208 process represent the most comprehensive available assessment of: (1) nonpoint source problems in each state; (2) needed controls to deal with these problems; and (3) viable institutional arrangements for implementing these controls.

We would be reticent to endorse a new round of planning to guide nonpoint source control implementation activities. Indeed, NCASI's survey of state silvicultural nonpoint source control programs indicates that forty states are already moving forward to implement the programs they developed through the Section 208 process. We understand that similar results in the agriculture area have been obtained through a survey (conducted by the National Association of Conservation Districts) of state agricultural nonpoint source control programs. We would be reluctant to see this progress interrupted by the interjection of a completely new federal nonpoint source pollution control initiative.

While the Section 208 data base may need to be supplemented in certain areas, it is (as indicated) the best information source available at the present time. It should, thus, serve as the foundation for any efforts initiated by the Subcommittee through new legislation this year. API/NFPA recommend that any legislation reported by the Subcommittee to the House specify that state and federal nonpoint source control efforts should build upon the Section 208 plans developed by the states, and approved by EPA.

2. Should the Federal Government Step-In to Implement Nonpoint Source Controls Where States Do Not Act in a Timely Fashion?

One element common to a number of proposals advanced to date is the proposition that the federal government would directly implement nonpoint source controls in a state which does not develop an appropriate program under whatever conditions are specified in these legislative options. API/NFPA strenuously object to this sort of federal step-in as a remedy for state inaction.

One important finding of the Section 208 effort is that the nature and variability of nonpoint source problems and needed control measures dictate that control programs must be developed and implemented at the state and local level. In our view, there are very real institutional and resource limitations that would be faced by EPA or any other federal agency attempting to implement, monitor, and enforce nonpoint source controls at the state level. These limitations make direct federal implementation of nonpoint source

control programs infeasible, even in cases where states are, for some reason, unwilling or unable to act.

Quite apart from the issue of the federal government's questionable capability to implement a program in place of a state, we wonder whether speculation over the possible inaction of a state or states is a real concern. As indicated, forty states are moving forward in the silviculture area in the absence of any federal assistance whatsoever. The recent NACD survey demonstrates a similar degree of state and local commitment in the agricultural area.

The principal impediment to more aggressive efforts to control nonpoint sources over the past three years has not been a lack of state or local interest. Rather, efforts have slowed to some extent because of a perceptible lack of federal support, encouragement, and/or financial assistance to augment state and local efforts.

In this light, we believe it is, at best, premature to threaten heavy-handed federal intervention or sanctions in states which for some reason fail to move forward as fast as many would like. First, the threat of direct federal intervention to implement nonpoint source controls rings hollow in light of the lack of federal capability to perform this function. Second, it is not at all clear that this is the only, or even the best, means of inducing reluctant states -- if there are any -- to move forward in an expeditious fashion.

API/NFPA suggest an alternative role for EPA in this process. We believe that the Administrator should review the status of nonpoint source problems in those states which fail to submit an implementation plan under whatever proposal the Subcommittee finally adopts. The Administrator should report to Congress within eighteen months assessing: (1) the need for additional nonpoint source controls in these states; and (2) appropriate federal remedies as a result of the states' failure to act.

3. Is Federal Financial Support Necessary to Foster the Implementation of Nonpoint Source Controls?

Our industry survey of the current status of state silviculture nonpoint source control programs indicates that a major impediment to more rapid implementation of nonpoint source controls is the lack of available financial and staff resources at the state level. Indeed, ten of the forty states which are actively implementing a silviculture nonpoint source control program responded that lack of federal financial support, as Section 208 grants are phased-out, will slow down their efforts.

Major federal financial assistance to the states for dealing with nonpoint source problems ended in 1980 with the completion of the Section 208 planning process. Since that time, there have been limited federal financial measures provided to the states to help implement specific Section 208 plan elements. In our view, given the current limitations on resources at the state and local level,

some degree of federal financial assistance will probably be necessary to: (1) help states refine implementation plans, where necessary; (2) implement the education, training, technology-transfer, and other programs designed through the Section 208 planning effort to get best management practices implemented on the ground; and (3) in some limited cases, cost-share the actual implementation of best management practices.

In the silvicultural area, we believe the principal need for financial assistance is to aid the states in implementing education, training, and technology-transfer programs. We would not anticipate a great deal of cost-sharing for actual implementation of best management practices, since silvicultural best management practices do not generally involve extensive capital costs. However, there may be a substantial funding need of this nature in the urban and agricultural areas, where capital expenditures are often involved in nonpoint source control measures.

We appreciate the current lack of hard information concerning the total financial resource commitment necessary to effectively address nonpoint source problems nationwide in order to achieve the goals of the Act. API/NFPA do not believe that we should embark on a massive grants program analogous to the municipal construction grants effort. At the same time, we believe that a larger federal commitment, at the present time, would be helpful to serve as "seed money," to assist states in commencing or enhancing implementation efforts.

We would not, however, object to a more limited interim federal involvement (perhaps on a case study basis) designed to generate a more accurate assessment of the total, national nonpoint source control resource needs. Any such interim measure should be fashioned so that: (1) results are obtained on a timely basis; and (2) a comprehensive report to Congress concerning the appropriate federal role is provided no later than three years from the date of passage of the Clean Water Act amendments currently before the Subcommittee.

4. Beyond Financial Support, What is the Appropriate Federal Role in Addressing Nonpoint Source Pollution?

API/NFPA believe that the implementation of nonpoint source control programs should remain a state and local responsibility. However, there is an appropriate role (in addition to providing financial assistance) for the federal government in this process.

The Environmental Protection Agency should continue to review and approve state nonpoint source control programs in order to: (1) assure reasonable state progress toward meeting water quality goals; (2) guard against unwise expenditure of federal financial resources in supporting state programs that are poorly conceived and/or operated; and (3) resolve any interstate disputes concerning nonpoint source problems. With respect to the latter responsibility, we support special studies designed to deal with unique interstate nonpoint source problems such as the pollution of

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the Chesapeake Bay. In our view, EPA should also serve as a clearinghouse for the transfer of information on successful implementation programs at the state level.

Finally, EPA should assess the progress being made, and keep Congress abreast of needed changes to the federal strategy for dealing with nonpoint sources. This responsibility should include, as suggested above, a requirement for EPA to report to Congress where states do not act to address nonpoint source problems.

In addition to EPA, we believe that the U.S. Department of Agriculture has an important role to play in addressing nonpoint source problems. USDA should provide technical assistance, where appropriate, to assist state implementation of nonpoint source control programs. USDA's expert agencies and delivery systems for dealing with the agricultural community will prove essential in assisting the states to move forward in addressing water quality problems caused by agricultural activities.

Finally, we believe that all federal agencies have a responsibility to work closely with state nonpoint source control implementation agencies to make sure that federal programs are consistent with state efforts in this area. The federal government should not unwittingly cancel out the effects of state nonpoint source control efforts as the result of poorly coordinated federal projects or programs.

5. Should States Be Bound to a Uniform, Nationwide Date By Which Nonpoint Source Controls Must Be in Place?

Another important finding of the Section 208 planning effort is that the variability of nonpoint source problems from state to state -- and even within states in certain areas -- requires a policy that provides the states with considerable flexibility in controlling nonpoint source pollution. In our view, the most important components of this policy include the flexibility to develop: (1) different types of control programs, both regulatory and non-regulatory; (2) schedules for achieving implementation milestones that reflect the necessary differences in these control programs; and (3) economically and technically feasible best management practices that will be applied in a site-specific fashion.

In light of this diversity in types of control programs, we have considerable difficulty with the requirement, advanced in a number of proposals, that all states must implement nonpoint source controls within forty-eight months (or by some other arbitrarily chosen, uniform date). The local variability of nonpoint source problems makes it imperative that states be afforded varying time schedules to implement necessary controls.

We believe that a uniform deadline for compliance could well have a chilling effect on the states' willingness and ability to consider a broad range of alternative implementation programs. Such

a deadline runs a very real risk that the states will identify only those problems for which they are certain they can achieve compliance within the forty-eight month deadline.

API/NFPA prefer a less extreme option than attempting to impose nationwide nonpoint source controls within forty-eight months -- an approach which appears to represent "point source" thinking. We suggest that each state program submitted to EPA for approval include a schedule of accomplishments -- agreed upon by both the state and the Administrator -- for the implementation of the nonpoint source controls specified in the state plan. By monitoring the state's progress in achieving these milestones, we believe that EPA will have adequate opportunity to assure that the state is moving forward on a timely basis, in a fashion that is reflective of each state's particular nonpoint source problems. This approach will result in a more honest appraisal of the nonpoint source problems in each state, as well as a more sincere effort to deal with these difficulties.

6. Should the Nation's Nonpoint Source Pollution Control Strategy Continue to be Premised on the Implementation of Best Management Practices?

Since November 1975, EPA has emphasized the control of nonpoint source pollution problems through the implementation of best management practices (BMP's) (40 Fed. Reg. 55338). EPA's approach to developing best management practices to protect water

quality has fostered the concepts that: (1) states, as opposed to federal agencies, will determine whether a practice is indeed a BMP; (2) alternative practices will be examined; and (3) such practices must be technically and economically practicable before they will be adopted.

EPA's approach has also supported the notion that the application of best management practices must be tailored to site-specific conditions. BMP's may, therefore, vary from site to site depending on the nature of particular silvicultural activities and related potential water quality problems. Finally, EPA's approach to BMP development encouraged the utilization of existing forestry expertise in the development of best management practices. This aspect of the BMP development process was essential in securing technically feasible BMP's.

Our experience in working with Section 208 agencies at the state and local level to develop BMP's has been positive. The states that addressed silviculture nonpoint source pollution developed their BMP's in conjunction with the forestry interests in each state. These BMP's meet the regulatory criteria for BMP development set forth by EPA in 1975. It is our understanding that best management practices were developed in a similar fashion in the agricultural area. Because EPA, state, and local Section 208 planning agencies framed BMP's that are both workable, as well as politically acceptable, we are now in a position to move forward to implement needed controls.

In this light, we are most concerned about proposals to replace the best management practice approach with some form of an "average practice" alternative using the standard practice being carried out by the majority of landowners in an area. This option does not appear to emphasize the site-specific nature of nonpoint source controls, or the need for professional judgment in implementing the necessary practices.

Moreover, such an alternative approach would lose the political support for implementation of best management practices generated by the Section 208 planning process. API/NFPA, thus, urge that any new nonpoint source initiatives favorably considered by the Subcommittee retain the concept of best management practices as the appropriate means of dealing with nonpoint source pollution problems.

7. Can Financial Sanctions Be Used Effectively to Compel Compliance with Nonpoint Source Pollution Controls?

One suggestion discussed at some length during Senate Committee consideration of this issue involves cutting off federal financial assistance for any activity not conducted in compliance with required nonpoint source pollution control practices. On the surface, this proposal appears appealing because it does not involve any additional federal financial exposure. Indeed, such an approach could work to reduce the amount of federal financial assistance provided through various federal support programs.

In our view, however, the appeal of such an approach is largely superficial. The element of compulsion injected by such proposals for financial sanctions conflicts with current EPA policy under Section 208 to foster cooperative programs to implement nonpoint source controls. Experience with the Section 208 program suggests that an approach which emphasizes education, training, and, where necessary, incentives, offers the best chance of success -- especially in dealing with rural nonpoint source problems. A controversial sanctions program may make states reluctant to honestly identify problems and develop control programs.

In addition, such a proposal could have an unanticipated negative effect on water quality. For example, this type of approach could be interpreted to prohibit federal construction grants for waste treatment facilities to municipalities that do not develop urban runoff control programs. Similarly, many nonpoint source control efforts in the agricultural sector depend on USDA soil conservation and extension assistance as part of the necessary delivery mechanism. However, such federal assistance programs would presumably be denied to farmers that have not promptly implemented agricultural nonpoint source controls.

Moreover, such a proposal would obviously require detailed guidance as to: (1) how such a complicated sanction would be implemented and enforced in a justified fashion by the myriad of federal and state agencies involved; and (2) the specific federal assistance programs affected. We believe that a detailed analysis

of current federal assistance programs would be necessary to even begin to consider this type of sanctions approach.

Finally, such an approach assumes that affected federal financial assistance provided through various programs is not directed in a fashion that is designed to achieve other important national purposes. We see no justification for the apparent presumptive desirability of implementing nonpoint source controls, over the other national goals served by affected federal financial assistance programs. The conflicts that would be created with these programs may require broader legislative review than can be provided within the jurisdictional purview of the Public Works and Transportation Committee.

As an alternative to this controversial approach, API/NFPA support, as indicated above, efforts by federal agencies to work with states to assure that the federal programs are consistent with state nonpoint source control efforts. More generally, we believe that positive initiatives rather than financial sanctions against nonpoint sources will have the greatest impact on improving water quality.

8. Should Nonpoint Source Control Efforts Be Concentrated on Priority Water Bodies?

One issue common to a number of the proposals that have been discussed is whether new nonpoint source control efforts should be

concentrated on water bodies where nonpoint source pollution is creating a significant water quality problem. As indicated below, current data are not adequate to directly correlate specific nonpoint sources with water quality standards violations. However, the current state Section 305(b) water quality surveys provide sufficient information to identify those water bodies where nonpoint sources are an important water quality problem.

Consequently, API/NFPA believe that control efforts should not be focused on all water bodies with water quality problems. Rather, new initiatives should concentrate on those water bodies identified through Section 305(b) surveys (or other data sources) on which nonpoint sources are interfering with the achievement of the Act's clean water goals. Both federal financial assistance, as well as any state efforts, should give priority to those water bodies on which nonpoint source controls are most immediately needed.

9. Are Current Data Adequate to Correlate the Implementation of Nonpoint Source Controls with the Attainment of Water Quality Standards or to Resolve Interstate Nonpoint Source Water Quality Problems?

While existing data are adequate to begin the implementation of nonpoint source controls on priority water bodies, we still have much to learn about the relationship between the implementation of best management practices and improvements in measures of ambient water quality. Clearly, data gaps also exist in determining natural background levels of some nonpoint source pollutants, and in

quantifying the impact of long range transport of pollutants as part of the bedload that already exists in most stream systems. Because of these information gaps, we believe that new nonpoint source initiatives should not be confounded by attempting to address issues where insufficient decision-making data exist, such as: (1) nonpoint source compliance with water quality standards; and (2) conclusively resolving interstate conflicts over long-range transport of nonpoint source pollutants.

We believe that a program focused on implementation of nonpoint source controls on priority water bodies is an important beginning for the long-range task of improving and protecting the nation's waters impacted by nonpoint source pollution. What such a program cannot do, however, is solve all of our water quality problems in short order.

D. API/NFPA Support H.R. 4037 with Modifications

As introduced, H.R. 4037 favorably responds to many of the concerns discussed above. The program framed by H.R. 4037 represents a positive step forward in the federal/state partnership to deal with nonpoint source problems. API/NFPA support H.R. 4037, with the two following modifications.

First, H.R. 4037 would add new Sections 319(a)(7) and 319(c) to the Act requiring states to: (1) identify federal activities which would be "inconsistent" with the state nonpoint source implementation program; and (2) recommend modifications to these federal activities. EPA would consolidate the state recommendations, and submit them to the appropriate federal agency. Finally, the affected agency would modify its activities, and "to the extent possible," carry them out in a manner that is consistent with the state program.

As indicated above, API/NFPA support the basic proposition that federal programs should be consistent with state nonpoint source control efforts. However, we are concerned that the proposal framed in H.R. 4037 contains ambiguous requirements which could result in substantial resource and program burdens on federal agencies.

For example, it is unclear how the term "inconsistent" would be defined for the purposes of identifying affected programs. Similarly, it is not apparent why EPA should serve as a clearinghouse for state recommendations, or whether other federal agencies would be bound by EPA's interpretation of the states' requests. Finally, we are uncertain as to how the requirement to carry out federal programs, "to the extent possible...in a manner which is consistent with" state desires would be interpreted by EPA or the courts.

To provide a greater degree of certainty in the specific federal program requirements imposed through this type of a provision, we prefer the approach outlined in Sections 319(a)(1)(G) and 319(f)(1) of S. 431 as reported by the Senate Committee. S. 431 references, and gives special deference to, existing federal/state program coordination procedures outlined in Executive Order 12372. In this fashion, a good deal of uncertainty concerning the specific requirements of this portion of the nonpoint source proposal is eliminated.

Second, proposed Section 319(h) of H.R. 4037 would provide the authority for EPA to convene interstate management conferences to deal with nonpoint source problems that affect more than one state. API/NFPA support the special conference approach to dealing with interstate problems. However, we are reluctant to endorse the proposition -- as H.R. 4037 appears to do -- that such conferences should be granted plenary enforcement authorities to modify existing state permits and/or plans. Such a proposal would make chaos of existing programs. More data on long range transport of nonpoint sources much be collected before interstate problems can be resolved in such a compulsory fashion.

VI. ADDITIONAL ISSUES OF CONCERN TO API/NFPA

In addition to our own legislative priorities, and issues raised in H.R. 3282 or H.R. 4037, two issues of substantial concern

to API/NFPA have been raised during Senate deliberations on Clean Water Act amendments. These are reviewed below.

A. Antibacksliding

S. 431, as reported by the Senate Committee, contains an amendment offered by Senator David Durenberger, designed to deal with the maintenance of existing NPDES permit conditions. Section 13 of the bill would amend the NPDES permitting authority in Section 402 of the Clean Water Act to prohibit renewed or reissued permits from containing effluent limitations or other conditions less stringent than the previous permit.

This amendment would strike down a provision in an EPA November 18, 1982 proposal implementing the settlement agreement on the Consolidated Permit regulations. Under this proposal, the EPA Administrator would have the option to revise BPJ permit limitations when subsequently promulgated effluent limitations guidelines are less stringent.

The Agency's rationale for this proposed change is as follows:

> EPA is abandoning its "anti-backsliding" requirement in this circumstance for several reasons. EPA believes that in the application of nationally promulgated effluent limitations guidelines permittees should be given equal treatment, so that companies who have made good faith efforts to comply with previously imposed permit limitations will not be penalized nor placed at a disadvantage with respect to companies operating under subsequently issued, less stringent limitations.
>
> In addition, EPA is now involved in its "second round" of NPDES permitting under the Clean Water Act (CWA). A large number of NPDES permits have expired and must be reissued. As with the first round of issuance, it is expected that some of these permits will be issued on a case-by-case basis under the authority of section 402(a)(1) because of the absence of nationally promulgated effluent limitations guidelines. If the anti-backsliding rule remains in effect it is likely that many permittees will challenge any permit limitation issued in the absence of guidelines. Thus, the proposed changes would help to avoid widespread challenges to second round permits, a situation which could force the Agency to divert resources from permit issuance proceedings to evidentiary hearings and further legal challenges. (47 Fed. Reg. 52084)

The amendment appears to be a reaction to EPA's November 1982 proposed regulations implementing the settlement agreement on the Consolidated Permit regulations. However, we believe the language is much broader than intended, and would severely disrupt EPA's and States' ability to negotiate new permits. Below, we review both the Agency's proposal and the likely consequences of the Senate language.

On its face, the proposed amendment would prevent any increase in the allowable daily discharge limitations in NPDES permits, regardless of the justification for such increase. It

would also prevent changes in any other permit conditions (such as monitoring and reporting requirements, or limitations on bypasses) which would be considered "less stringent."

However, there are many legitimate reasons, recognized in federal and state NPDES permitting regulations, for changes in permit limitations. The best examples of the type of changed circumstances which might justify increased permit limitations involve increased production or changes in -- or the addition of -- manufacturing processes. Due to the specific language of Section 13, permittees could not increase their production or change their processes unless they could do so without exceeding existing permit limitations. Other examples of appropriate reasons for modifying permit limitations include: (1) mistakes in setting original limitations; (2) changes in the level of pollutants in intake waters; or (3) changes justified by improved water quality modeling or monitoring.

The language of Section 13 could also discourage the future imposition of case-by-case effluent limitations in permits. Permit writers may delay issuing renewed permits rather than issue a permit with case-by-case BAT limitations, since such limitations would then be permanently fixed in the permit even if they later proved to be unreasonable. Permittees would tend to resist and delay case-by-case permits as long as possible, to avoid accepting limitations more stringent than those that the guidelines might later require of their competitors.

If technology-based permit limitations, once established, could never be relaxed, companies that moved first to receive their NPDES permits and commence the required treatment, prior to the issuance of national guidelines, would be at a disadvantage in comparison to plants which have delayed this permit process and installation of necessary controls. In such cases, the installation and operation of more extensive treatment than required by the national guidelines -- even where such treatment is not needed to protect water quality standards -- could be both unfair and unnecessary.

Similarly, there may be instances of prior inaccuracies in establishing effluent limitations necessary to meet water quality standards, or where improvements in water quality have occurred due to improved treatment by others or control of nonpoint sources. In these cases it may not be reasonable to categorically refuse to relax stringent treatment requirements which were previously necessitated by water quality problems. Clearly, in such cases, permit writers should be afforded some measure of flexibility to respond to local conditions.

Particularly problematic is the prohibition on any changes to "other permit conditions." The term "conditions" is normally used to refer to all legal requirements contained in the permit. It encompasses such things as testing protocols, discharge monitoring, notification requirements, compliance schedules, or upset and bypass provisions. There is certainly no justification for permanently fixing each such condition as it reads in the existing permit.

Enactment of this provision could discourage states from exercising their authority under Section 510 to impose conditions more stringent than those required by federal law. For example, many states are now requiring frequent testing for numerous toxic pollutants to provide a data base for possible future regulation. If such permit conditions could not subsequently be made less stringent, states may be less willing to suggest that such provisions be included in permits.

In summary, Section 13 of S. 431, while originally designed to accomplish a relatively simple purpose, raises a multitude of complicated permit policy issues. We believe that most, if not all, of these issues can be more efficiently resolved during the ongoing review of EPA permit regulations and procedures. Should an amendment similar to Section 13 of S. 431 be offered during the upcoming mark-up sessions, API/NFPA urge that the Subcommittee reject this inflexible approach to NPDES permitting.

B. Federal Common Law, the Resolution of Interstate Disputes, and the Preservation of Other Rights

Some have proposed that Congress consider an amendment to the Clean Water Act that would again allow suits alleging water pollution damage to be brought under the federal common law of nuisance. API/NFPA would oppose such a provision.

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By way of background, a 1981 Supreme Court decision (Milwaukee v. Illinois) held that Clean Water Act regulatory programs preempt available federal common law remedies. During Senate debates on the Municipal Waste Water Treatment Construction Grants Amendments of 1981, the Senate adopted, without discussion, an amendment to the Clean Water Act to "make it clear that the Clean Water Act and other statutes do not displace, preempt, or in any other way disturb the federal common law."

House Conferees objected to the sudden insertion of the amendment, and it was withdrawn. The Conference Report noted "that failure to include this provision is without prejudice," and agreed to "examine further in the next session the best means to accomplish this intent." (House Rept. No. 97-408; page 27)

In Milwaukee v. Illinois, the Supreme Court held that the federal common law should apply only when Congress has not "spoken to a particular issue," and recourse to the common law becomes a necessary expedient. Such a remedy is not necessary here, especially because the Milwaukee decision neither forecloses any course of action available to a plaintiff under state law, nor prohibits a state from imposing effluent restrictions more stringent than federal standards.

If such an amendment is adopted, companies who are legally operating under the conditions of their Clean Water Act waste discharge permits conceivably could be subject to a new wave of

litigation brought under the federal common law. Such a provision would allow an affected state or municipality -- and perhaps other private plaintiffs -- to sue in federal court to effectively rewrite carefully written discharge permits. The amendment would involve the courts ever more deeply in such day-to-day regulatory activities as inspections, enforcement, and standards setting. This would, in effect, undercut the entire NPDES program.

In our view, such an amendment would also subject, to further liability under the uncertain federal common law of nuisance standards, dischargers who in good faith invested significant amounts of capital to comply with the federal and state regulatory programs and their permit requirements. The procedures set forth in the Act for participation by the public in the permit issuing process already provide an adequate opportunity for the identification and weighing of the interests of third parties that may be affected by the discharge. Thus, on the basis of simple equity considerations, a proposed amendment of this nature lacks merit.

During Senate Committee deliberations on S. 431, the above, and similar, arguments were levied in opposition to a common law amendment. These arguments met with some success in that the Committee did not favorably consider an amendment to reinstate the federal common law of nuisance in Clean Water Act permit proceedings.

However, under the guise of remedying deficiencies in existing procedures for interstate review of NPDES permits, and preserving access to state common law; the Committee passed -- without significant discussion -- amendments to Sections 402, 505, and 511 of the Act. API/NFPA find these amendments extremely problemmatic for the reasons discussed below. Should similar amendments be proposed during the House deliberations, we urge their rejection by the Subcommittee.

1. Resolution of Interstate Disputes

To deal with interstate disputes, the Senate Committee proposed amendments to Sections 402(b) and (d), and Section 511 of the Clean Water Act to resolve such disputes over NPDES permits. Proposed Section 402(d)(2)(B) would require EPA to resolve disputes involving one state's objection to another state's permit. Proposed Section 402(b)(1)(F) would require reconsideration of a state-issued permit when another state provides notice that its waters are adversely affected. Proposed Section 511(e) would: (1) set forth procedures for EPA's resolution of such an interstate dispute; (2) provide EPA with authority to stop any contested discharge; and (3) provide other appropriate relief. When the dispute involves a permitted discharge, the complaining state must have exhausted available administrative relief.

The proposed amendments elaborate on procedures for permit review by other states currently found in Sections 401(a)(2) and

402(b)(5) of the Act. The stated goal of the new proposals is to make explicit in the statute, the Congressional intent that EPA must affirmatively act to resolve interstate disputes, on the record, in a fashion that is reviewable.

Currently, under Sections 401(a)(2) and 402(b)(5), a state affected by a permit being considered by an upstream state must frame its concerns around an impact on the "quality of its waters so as to violate any water quality requirement." EPA has defined this standard at 40 CFR §§122.52(d) and 122.62(d)(4) by requiring that any NPDES permit must "conform to all applicable water quality requirements under Section 401(a)(2) of CWA when the discharge affects a State other than the certifying State." Traditionally, affected states have raised concerns if an upstream state's permit would affect their water quality standards, including the antidegradation policy.

Unfortunately, the proposed amendments establish a far broader standard under which one state can dispute another's action. Proposed Section 402(d)(2)(B) would require EPA to resolve interstate disputes by determining "whether any violation of a water quality standard of the affected State, adverse effect on public health, <u>or other demonstrated harm to the interests of the affected State</u> will result from the issuance of such permit." (Emphasis added.) Similarly, proposed Section 511(e) would require a determination that "such pollution or contamination endangers the public health or welfare, or causes or contributes to a violation of

water quality standards <u>or other demonstrable harm.</u>" (Emphasis added.)

API/NFPA do not object to elaborating on the procedures for resolving interstate disputes, and requiring a decision from EPA. However, we have serious concerns with the increased breadth of review in dealing with such disputes.

First, the broader standard for challenging a permit will place permittees at considerably greater risk in obtaining approval for, and operating under, permits that could affect other states. The standard of "other demonstrable harm" sweeps-in concerns unrelated to water quality (i.e., the relative level of unemployment in a state affected by a new discharge compared to the state in which the discharge originated). Petitioners will likely assert that this ambiguous standard is an explicit statement of Congressional intent to broaden the scope of the inquiry when EPA must resolve interstate conflicts. Consequently, the amendment may increase the number and intractability of interstate disputes, rather than simply provide a better articulated mechanism for their resolution. Endless litigation could also result from such an ambiguous standard.

Second, the broader standard imposed by these amendments will require EPA to make an extensive series of findings in response to a petition from an impacted state. Even if EPA could successfully defend a decision using such an ambiguous standard, the breadth of the inquiry will extend significantly the time necessary

to resolve the dispute, and involve EPA and the affected permittee in a never-ending, fact-finding exercise to certify that "no demonstrable harm" has occurred.

Third, the proposal may discourage an affected state from using and upgrading its water quality standards program to assess whether the activities of an upstream state are impacting its water quality. Under the broad language of the proposal, an affected state would use the opportunity to make a broader case involving more general harm. There will be no incentive to upgrade water quality standards to quantify the impacts created by an activity in an upstream state.

2. Preservation of Other Rights

The Senate Committee also approved an amendment to Section 505 of the Act to: (1) make it clear that the Clean Water Act does not preempt existing access for private individuals to remedies through state common law actions; and (2) provide states and municipalities with a mechanism for dealing with diversity of citizenship limitations in addressing interstate disputes.

The former amendment was designed to respond to assertions that the Clean Water Act could be read to preempt state common law remedies. The latter amendment was deemed necessary to provide adequate access to federal or state courts in order to adjudicate interstate disputes, where Clean Water Act remedies are not adequate to the task.

API/NFPA do not object to the stated intentions of the proposed amendment to Section 505. We do not oppose an amendment which would more clearly provide that existing state common law rights and liabilities are preserved. Nor do API/NFPA oppose the proposal to preserve liabilities under other Federal statutes for damages caused by noncompliance with any requirement of the Clean Water Act.

However, the language of the Senate amendment appears to: (1) create a new Federal right of action (with jurisdiction in Federal or State courts) for injuries caused by any "act or activity within the field covered by" the Clean Water Act; and (2) authorize appropriate relief under the applicable State statutory or common law. Thus, though intended to simply "preserve" existing rights, this provision could, if read improperly, establish -- for the first time under the Clean Water Act -- a new Federal right of action for damages caused by such activities as point source discharges, nonpoint source runoff, and accidental spills. To the extent provided under the applicable State statutory or common law, Federal (as well as State) courts would have the power to award damages and order abatement actions, beyond the requirements of the Clean Water Act.

This provision could place in the hands of Federal courts -- which would apply State statutory and common law -- substantial power to "second guess" and override: (1) the standards articulated by Congress in the Clean Water Act; and (2) the specific limitations

and conditions contained in permits developed by the expert administrative agencies with which Congress entrusted this responsibility. We have seen no evidence to indicate that access to existing remedies in state courts under state law is inadequate.

VII. CONCLUSION

In conclusion, we reaffirm our support for the 1972 Federal Water Pollution Control Act and the water pollution control programs that have resulted since its passage. We believe that the 1972 Act and its 1977 amendments provide the proper basis for additional water quality improvement as we move into the decade of the 1980's. At the same time, we agree with the Administration that modest refinements to a number of Clean Water Act programs will enhance, rather than inhibit, this desirable goal.

We look forward to working closely with the Subcommittee to craft modest changes to the Act. We thank the Subcommittee for the opporcunity to testify today. We would be pleased to respond to questions.

Appendix A

REDUNDANT TREATMENT OF COMPATIBLE POLLUTANTS
CASE STUDY
MEMPHIS, TENNESSEE

In the fall of 1978, the EPA Regional Office in Atlanta initiated action through the Department of Justice against Memphis, Tennessee for violation of the discharge permit for its wastewater treatment facilities. The violation was accompanied by allegations that the city had not made sufficient progress toward meeting the permit limitations. The city had constructed the facilities in question with a pre-1972 federal grant.

The EPA suggested to Memphis that the load of compatible pollutants to the treatment plant from Memphis industries should be reduced so that the plant could meet its limitation. In a subsequent federal court hearing, EPA stated that it would be reasonable for the industries using the Memphis treatment system to be required to reduce the BOD concentrations in their wastewaters to at least a concentration of 250 mg/l.

The city responded to this pressure by influencing the industrial users of Memphis' South Treatment Plant to hire a consultant to study how they could individually or collectively treat their wastewaters to achieve the industrial pretreatment limitations suggested by EPA, and perceived as being necessary. The study concluded that the most economical solution was to increase the capacity of the city's treatment plant.

The city was subsequently prosecuted, and a fine imposed, even though the facility had been constructed with a federal grant. This grant was prior to the enactment of the 1972 law and its requirement universally imposing secondary treatment for municipal systems. The city had constructed the treatment plant with the greatest capacity possible within the limits of the funds available. Memphis then tried to stretch the funds to meet secondary treatment limitations. (At a later date, EPA and the state agreed that Memphis was eligible for additional grants aimed at meeting the 1972 Act's goals.)

The eventual solution to the problem was largely achieved through applying various public and private technicians experienced in plant operationsl problems to the task of correcting equipment problems in new plants in order to provide increased plant capacity. In the end, the imposition of a concentration limit for compatible pollutants was found to be unnecessary, and the city has been successful in meeting its permit.

Obviously correcting operating problems was a much fairer and more economical approach than forcing some long-term customers to pretreat. However, EPA's advocacy almost forced industrial users of the Memphis system to have to pretreat for compatible pollutants.

CASE STUDY A -- PLYMOUTH, NORTH CAROLINA

In the mid-1970's, Welsh Creek near Plymouth, North Carolina was one of a number of water courses which had been classified by the state for uses less than the support of fish and aquatic life. The creek originates as drainage from a swamp. At the point in question here, it is largely a backwater of the Roanoke River. Flow through the creek is often near zero. It is further characterized as being of dark color, low pH, and of elevated temperature. Under natural conditions, dissolved oxygen (DO) periodically approaches zero. Clearly, the creek is naturally incapable of supporting an aquatic community. Accordingly, the state assigned a DO criterion lower than required for aquatic life.

Nevertheless, EPA insisted that the creek be classified for the support of fish, and carry with it a commensurate DO criterion. This was reportedly based on a rationale that: (1) some water quality parameters were consistent with such a use; and (2) a variance could be sought for those parameters which were inconsistent. As a result, the state accepted the Agency recommendation. A pulp and paper mill discharging to the creek sought a variance. Recognizing the character of Welsh Creek, the state responded by lowering the dissolved oxygen requirement.

However, the variance was rejected by EPA on the basis that its criteria for granting such a variance had not been met. EPA further imposed a Federal standard calling for 5.0 mg/l DO level. The mill in question, faced with the futility of maintaining a dissolved oxygen condition which was naturally unattainable, had little recourse but to enter into a compliance agreement wherein effluent would be diverted through a 2 mile pipeline directly to the Roanoke River at a cost of eight million dollars.

CASE STUDY B -- KALAMAZOO, MICHIGAN

The Kalamazoo River in the vicinity of Kalamazoo, Michigan has a use classification directed toward protection of fish and aquatic life. Perceived to be consistent with that goal, are dissolved oxygen (DO) criteria for an average DO of 5.0 mg/l and a minimal level of 4.0 mg/l to be met at all times.

To obtain these levels, point source controls have been agressively pursued. They include the construction of an advanced treatment plant serving: (1) Kalamazoo and adjacent communities; and (2) a number of industrial dischargers. Included among the latter are several paper manufacturing facilities.

Several studies carried out in the late 1970's have brought into question whether the required dissolved oxygen criteria will be attained. A 1978 report published by the Michigan Department of Natural Resources points out that:

> "The treatment of oxygen demanding wastes discharged to the Kalamazoo River beyond conventional, stable effluent levels is not cost effective. This is because the DO deficits due to these wastes are small compared to the (algal type) respiration effects on DO. These respiration effects are primarily responsible for limiting the assimilative capacity of the Kalamazoo River."

A 1979 update of the Section 208 Areawide Waste Treatment Plan prepared by the South Central Michigan Planning Council alludes to a contributing factor of significance to the above observation:

> "The phosphorus loading (from non-point sources in sub basin 204 east of Kalamazoo) is well in excess of the levels required to promote nutrient enrichment of surface waters."

Sub basin 204 is a "rural" sub basin. Ninety-three percent of the sub basin consists of crop land, pasture, and forest.

A second factor is identified in a 1981 study on Stormwater Pollution in the City of Kalamazoo prepared under the auspices of the South Central Michigan Planning Council. The study report indicates that the load of oxygen-demanding substances associated with stormwater runoff on typical storm days alone exceeds the assimilative capacity of the Kalamazoo River. Typical storm day conditions were thought to prevail 75 days/year. The report goes on to suggest that:

> "Though days of storms will probably not be days of minimum river flows, the (stormwater) BOD5 contribution may cause significant degradation of the river quality for a period of time, perhaps below the allowed standard."
> (emphasis added)

Thus, recent information suggests the possibility that nonpoint source loads of BOD and nutrients could, by themselves, cause violations of existing water quality standards (5 ppm DO daily average, at least 4 ppm DO at all times). Additional study will be required to determine the extent to which these nonpoint sources must be controlled to assure compliance with dissolved oxygen standards. The state should be allowed the flexibility to modify the applicable water quality standards in the event that further study demonstrates that existing standards are not attainable due to nonpoint sources that cannot feasibly be controlled.

CASE STUDY C — FLORIDA INTERCOASTAL WATERWAY

Dissolved oxygen is probably the clearest example of a need for flexibility on a local scale. Virtually all investigators will agree on a need to recognize the tremendous natural variations that occur in the case of dissolved oxygen. Dispute arises only when one attempts to establish criteria. We suggest, as is implied in the American Fisheries Society's "Review of the EPA Red Book: Quality Criteria for Water" (Am. Fish. Soc., Bethesda, Maryland, 1979), that no single absolute criteria can ever succeed. Local flexibility must be available for natural local differences and biological needs.

One specific example currently exists in the northern portion of the intercoastal waterway in Florida — a situation with doubtless dozens of counterparts throughout especially the Southeastern portion of the United States. In this area of common natural low dissolved oxygen values, the state of Florida has attempted to accommodate, to a degree, the present national water quality criteria of a minimum of 5 mg/l dissolved oxygen by specifying an average value of 5, with a minimum of 4 mg/l. However, even this "bending" of the national stated minimum is not adequate to reflect truly natural conditions that have been validated as dropping into the 3 mg/l range. Presently ongoing activities by the state to consider "waste load allocations" in this area are certain to result in technically unresolvable questions when national policy forces the state agency to base its decisions on clearly erroneous base lines of water quality.

Dissolved oxygen is the first parameter that comes to mind when one considers criteria differences in water quality. This is an understandable situation in view of the length of time and effort on the study of oxygen. It is likely that, as other parameters are studied in depth, similar problems will evolve.

CASE STUDY D -- MONTICELLO, MISSISSIPPI

As part of its 1973 triennial review of water quality standards, the Mississippi Game and Fish Commission adopted, with subsequent EPA approval, a dissolved oxygen (DO) standard of not less than an average 5.0 mg/l, but allowing an average level as low as 4.0 mg/l for short periods of time during extremely low water levels (i.e. at or less than 7Q10). In April 1977, following the next triennial review, the state chose to submit its existing standard for EPA approval. Unfortunately, EPA disapproved the dissolved oxygen criteria and gave the Mississippi Air and Water Pollution Control Commission until October 1977 to promulgate an appropriate standard. EPA recommended a daily average of 5.0 mg/l and a minimum of 4.0 mg/l. In reconsidering its action, the Commission concluded that the state standard was properly derived and, in the public interest.

EPA responded in July 1978 by formally proposing a DO standard of 5.0 mg/l to be met at all times. A less restrictive criteria ultimately promulgated by the Agency in 1979 requires an average 5.0 mg/l with an instantaneous minimum of not less than 4.0 mg/l. The Agency's authority to take this action was subsequently upheld by the Courts.

At the present time, the Pearl River at Monticello, Mississippi is designated for a use supportive of fish and wildlife. The river does, in fact, support an aquatic community native to the area and would do so under dissolved oxygen conditions represented by the criteria originally submitted by the state. Thus, designating a lesser use is neither warranted nor would it be politically acceptable. Furthermore, in the late 1970's EPA would not likely have accepted a use designation less than support of fish and wildlife.

The fact remains, though, that compliance with the dissolved oxygen criteria has imposed an environmentally unwarranted burden upon a local pulp and paper industry discharger. Even under the state's proposed criteria, the Pearl River at Monticello was recognized to be water quality limited. Effluent limitations to accomodate the dissolved oxygen requirements were met at the local pulp and paper mill through a controlled discharge program. The ability of the mill to contain discharges during the low flow conditions is contingent upon an ability to maximize discharges during high flow periods. Thus an ability to comply with the EPA-imposed DO criteria has been largely a result of higher than normal flows during non critical periods — leaving ample capacity in a 220 acre impoundment to store effluent during the critical periods. Under circumstances where stream flow patterns are more normal, compliance with the water quality criteria is questionable.

Mr. McNULTY. Please proceed.

TESTIMONY OF RODNEY C. GLOVER, MANAGER, ENVIRONMENTAL TECHNOLOGY AND REGULATORY AFFAIRS, PROCTER & GAMBLE CO., ON BEHALF OF THE AMERICAN PAPER INSTITUTE, AND THE NATIONAL FOREST ASSOCIATION

Mr. GLOVER. Thank you, Mr. Chairman. I appreciate this opportunity to speak before your subcommittee for the paper and timber industries.

Our associations support the Clean Water Act, and feel that it is fundamentally sound in philosophy and in approach. Most necessary changes were incorporated in the midcourse correction, adopted by this subcommittee in 1977, and only a few modest changes are indicated today. I will submit a full statement for the record, and concentrate on the three issues of most concern to our industry.

First, pretreatment:

The forest industry supports the pretreatment approach in section 307(b) of the act. We recognize the need for pretreatment of those industrial pollutants that are not adequately treated in publicly owned treatment works, or that would interfere with the operation of a municipal system.

Unfortunately, when EPA promulgated the general pretreatment regulations in 1978, and again in 1981, we found the procedures were complex, burdensome, and often unworkable. One program area which is particularly troublesome to many involves the pretreatment of toxics. This represents a substantial problem for the POTW's. We hope that this subcommittee will find a way to simplify the system. Others will address this issue in considerable detail.

Our industry primarily discharges conventional wastes, and the major issue for us involves pretreatment of compatible pollutants.

Since 1978, EPA has encouraged inadequate or poorly operated POTW's to require industrial customers to pretreat fully compatible pollutants—such as BOD or TSS—as a substitute for correcting the problem at the POTW. This policy disregards the act's objective of encouraging joint treatment of compatible wastes; and, in turn, increases the costs to both industrial and domestic users of the POTW.

In some cases, pretreatment of compatible pollutants makes sense. For example, slug loads can disrupt POTW's, and may require pretreatment. Additionally, large intermittent or seasonal loads can be disruptive to some POTW's. However, in most cases, joint treatment of industrial and municipal wastes is the most efficient and cost-effective approach. The decision to require pretreatment for conventional pollutants should be a local decision—based on individual circumstances—not a matter prejudiced by EPA policy.

We support an amendment, similar to that included in section 7 of S. 431, emphasizing again that Congress does not intend EPA to encourage redundant treatment of compatible pollutants. We would be pleased to work with the subcommittee to further develop this approach.

Second, NPDES permit length:

A change that should be added to any legislation would be to allow NPDES permits to be issued for periods of up to 10 years. This would reduce the work load for EPA and for the States, reducing total annual permit renewals and allowing renewals to be staggered. The 10-year permit would also provide industry with greater certainty when investing in pollution control technology.

However, we have substantial problems with the 10-year permit amendment included in S. 431 as it requires a permit to be reopened every time a new regulation or standard is issued. This would force EPA to continually reopen permits, would eliminate the advantages of the 10-year permit, would produce chaos in the existing NPDES permit program, and would destroy the stability provided by the NPDES permit. We recommend that any reopener provisions be consistent with EPA's existing regulations.

Third, water quality standards:

Section 6 of H.R. 3282 requires that States maintain, as a minimum stream use, the designated use in effect on January 1, 1983, unless statutory conditions—similar to those in existing EPA regulations—are met. Section 6 would also establish two new congressional requirements. One, no reduction would be allowed in the measured water quality parameters in a stream regardless of whether or not there is an actual impact on ambient water quality or on the needs of the local aquatic community.

Two, the act would codify the EPA antidegradation policy. These changes reflect the House's concern with EPA's October 1982 proposal to revise the State water quality standards regulations.

We do not support downgrading existing streams uses, or eliminating designated uses that can be attained. We do not believe this was EPA's intent either, but we understand the controversy caused by some of the language in EPA's proposal. Valid concerns were raised during the comment period. The agency appears to be working to resolve these concerns in final regulations expected in the near future.

There are problems with some existing water quality standards that EPA will need the flexibility to address through the new regulations. Water quality standards, adopted by the States in the early and mid-1970's, were usually developed in haste, and often were based on inadequate water quality data. In addition, EPA direction on stream use designations and numerical water quality criteria was often inflexible. The resulting standards—in general, based largely on conventional, not toxic, parameters—in some cases are inappropriate or even unworkable.

Designated uses should be consistent with naturally occurring local conditions. There are, for example, some streams flowing from swamps that have never had a consistently high dissolved oxygen level.

Similarly, numerical criteria must reflect the needs of the naturally occurring aquatic community. For example, trout in Michigan require different water quality criteria than smallmouth bass in Georgia.

States must have the latitude to reflect such conditions.

EPA should be allowed the flexibility to deal with such problems as one part of a total program that provides a high level of envi-

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ronmental protection. Failure to give EPA this flexibility will result in water quality standards that produce problems rather than results. Congress should act only after EPA has had the opportunity to analyze the comments on the October 29 proposal and to make necessary changes.

Beyond these three concerns, we are pleased to see that H.R. 3282 would extend the deadlines for compliance with BAT and BCT effluent guidelines. We are also happy to note that H.R. 3282 does not include a Federal common law amendment.

In conclusion, we reaffirm our continued support for the goal of improving the quality of our Nation's waters. At the same time, we believe that some modest changes to the Clean Water Act are in order.

Thank you for this opportunity to testify. I will respond to questions.

Mr. McNulty. Thank you, Mr. Glover. Your longer statement has been made part of the record together with the oral statement this morning.

You heard the bell signaling a call to the House.

Mr. Glover. Yes, sir.

Mr. McNulty. I suspect you know more about the bells than I do, but we will have to recess to go vote.

Mr. Glover, would it be an imposition on you to stay here until we return?

Mr. Glover. No, sir, not at all.

Mr. McNulty. Thank you very much for your courtesy in that respect, and we will recess for 15 minutes.

Mr. Glover. Thank you, Mr. Chairman.

[Recess.]

Mr. McNulty. The hearing will come to order.

We recessed after having completed your testimony, Mr. Glover, and I will yield for questions from the gentleman from Minnesota.

Mr. Stangeland. Thank you, Mr. Chairman.

Mr. Glover, you raise a concern about past EPA policy to encourage pretreatment of compatible pollutants as an alternative to adequate municipal treatment. How would you have us fashion an amendment to address this concern without making the POTW's vulnerable to sludge loads or interference problems?

Mr. Glover. Congressman, I think the language in S. 431, which is very similar to language we have worked with before, does take care of this problem. Three points really to make. One, the language does not in any way proscribe any of EPA's options in writing general pretreatment guidelines to deal with slug load and interference. Second, it doesn't in any way affect the POTW's options in dealing with their customers.

And perhaps most important, it does not give the POTW any out from their permit. In essence, all it says is if there is a problem which is essentially the fault of the POTW rather than the customer, the EPA shall not interfere in the relationship between the customer and the POTW. It only deals with the issue when the problem is that of the POTW and not caused by the customer.

Mr. Stangeland. With regard to the reopening provisions accompanying a 10-year permit, would you prefer the present 5-year

term to a 10-year term with a mandatory new permit each time there is a new publication?

Mr. GLOVER. As we testified, we would have much hope that the House could craft the bill so the reopeners would not provide the problems they do in the Senate bill, for example. But if we had to choose between the precise language of the Senate bill and the current 5-year permit program, there is no question in our industry we would much prefer a certain 5-year permit to the continual reopeners of the so-called 10-year permit.

Mr. STANGELAND. In your testimony you state that you do not support downgrading. I am wondering if you, in light of some testimony we had yesterday, and I would just set the scenario for you and see if you would change your attitude somewhat, if the Federal EPA sets a water quality standard for a stream segment and then the State comes along and has the option of setting a higher standard, and does, and sets a substantially higher standard, the discharger finds that he can't meet the State standard but has far exceeded the Federal standard, then could you support the lessening of the standard on the State level, still substantially higher than a Federal standard?

Let me add another point. The State after extensive hearings is willing to lower its standard that it set.

Mr. GLOVER. As I understand your question, this would be a standard that was upgraded to a level that could not be attained with the situation on the stream, as opposed to the existing use designations, which we are referring to. Basically, if the standard is being attained, no matter who has set it, we don't feel that that standard should be downgraded. If that standard can be attained by the use of the technology prescribed in the act, we don't feel that the standard should be changed, the State should force the issue that it be attained.

However, if it is a standard that simply cannot be attained, for example, we have some situations which we have submitted with our testimony where the standard could not be attained if the plants ceased to exist, then certainly we think the designation should be changed.

Mr. STANGELAND. We would like some of those kinds of examples. But I guess the concern is that the Federal has a standard, and it sets a standard for a stream segment. The State have the option to set a similar or higher standard, equal to or higher. So the State opts to set it substantially higher and the discharger goes way beyond what the Federal standard is but can't reach the State standard. Then he appeals to the State. The State is willing to bring its standard down to what has been attained, and is attainable. But then the Federal rules and regulations supposedly prohibit that. We call that downgrading.

Downgrading has a bad connotation. I wish we could find a better term.

Mr. GLOVER. That is really a very complex question, and it basically illustrates the need to give the States some flexibility. For example, if as has happened, the State in error set a standard of dissolved oxygen of seven in a Southern State where smallmouth bass were the basic fish present, and they required, depending on the species, anywhere from three to five, then obviously it would be a

mistake to retain a standard of seven or eight which does not apply to a warm water fishery.

In that case, yes, we think the numerical criteria should be changed. But we would emphasize that the use designation, the achievement of the real water quality would not be changed because the total needs of the local aquatic community would still be served. So yes, sir, if the standard does not make sense in terms of local aquatic community, the numerical criteria, should be changed.

But we don't think use designations should be downgraded.

Mr. STANGELAND. Thank you. I have no further questions at this time.

Mr. MCNULTY. Mr. Smith.

Mr. ROBERT SMITH. Thank you, Mr. Chairman.

You oppose an amendment that would replace EPA review and removal of State NPDES permits with a periodic EPA audit. Would you explain how that works and how we can know protection will be provided should we adopt this amendment?

Mr. GLOVER. Yes, Congressman Smith. Essentially all we are requesting is that the degree of delegation from EPA to the States be increased. What we are suggesting is that after a State has had NPDES permitting authority for 3 years with the permits during that period being reviewed as they are today by EPA, so EPA has a clear record of the State's ability to manage its program, if the EPA finds that the State has managed that program in a competent fashion, that they then formally waive the review on a permit-by-permit basis.

Now, to make sure the State retained that level of competency they would have to periodically audit. If the State ceased to issue permits in a competent fashion, if EPA felt they weren't doing their job, they could then withdraw the waiver or permission. The advantage to EPA would be a resource one. They would require a lot less people if they didn't review every permit.

It has two advantages to industry. The first is having to deal with two agencies rather than one can extend the period to get a permit substantially. Another advantage would be in the current situation sometimes companies get whipsawed between two agencies. In many cases the issues between the agencies may not even be issues germane to the company, but they find they are caught in between.

We would much prefer to deal with a single agency, be it EPA or the State, rather than two. So it would be an advantage I think both to the permitting agencies and to the companies, sir.

Mr. ROBERT SMITH. Thank you. One other question I have. You are urging in your statement for the subcommittee to act affirmatively on a program to provide additional flexibility to POTW's in implementing pretreatment requirements. Do you have any additional information regarding that, or specific recommendations that the subcommittee might follow in trying to implement that suggestion?

Mr. GLOVER. Basically our interest in the pretreatment program revolves around compatibles. Our concern in regard to toxics is that we are afraid that the POTW's simply are not capable of administering the program. This is not because of the ability of their

people, but they just don't have the resources to handle a program that is going to be a very complex permitting program. We are afraid this will cause chaos in the POTW's.

Even though our concern is compatibles, we are afraid it will reflect on the ability of the POTW's to handle our discharges. Basically there are a number of alternatives to take this load off the POTW's. They are certainly not set up to handle an NPDES permit program, for example. One would be the waiver provision. Another would be the transfer, the requirement for issuing categorical permits from the POTW's to the States who have personnel to handle it.

In this type option the State or local POTW would simply meet its permit and the requirements of the general pretreatment guidelines. The State permitting authority would hand out the categorical permits to indirect dischargers the same as they do now to direct dischargers. That obviously would increase their workload. That could be reduced substantially if specific provisions were added to the law to allow general permits for certain classifications to allow a system whereby permits for removal allowances would be based on removal of BOD which in fact would be a surrogate for the toxic.

So if you knew what the removal for the POTW was, you could go to a chart.

Mr. ROBERT SMITH. Would you mind submitting those recommendations in writing?

Mr. GLOVER. Certainly, sir.

[The information received from Mr. Glover follows:]

PRETREATMENT PROPOSAL

There are three basic major flaws in the pretreatment scheme envisioned in the current law.

The categorical program is to be implemented by POTW's. By and large POTW's do not have the resources to implement what essentially is a complicated NPDES permit program. These resources reside in the state agencies.

The POTW's are being required to scrap existing local pretreatment programs designed to meet local needs and substitute what in many ways is a uniform national program. The potential results are the high cost or replacing often staisfactory programs with new ones, and the local problems created by imposing a national program which does not meet local needs.

The complicated removal credit system is almost impossible for state or local authorities to implement, and this will mean costly wasteful redundant treatment.

With a few relatively simple changes, the existing categorical system can be made to work, without any of the problems noted above.

The categorical program would be totally divorced from the POTW pretreatment program and implemented by the state in the same manner as the NPDES program. Each categorical discharger to POTW could apply to the state for a discharge permit. The permit would be issued by the state and compliance reports would be made to the state. There would be no involvement by the POTW. (The POTW could require lower effluent limits [i.e., higher removal] if necessary to conform to needs for its local pretreatment program.)

Each POTW would implement a pretreatment program of its own, designed to meet its need and its NPDES permit. the EPA or state environmental agency would not be involved with the local program unless the POTW failed to meet its permit, and the administrator would be directed to defer to local pretreatment programs unless an inadequate program was the cause for a failure of the POTW to comply with its permit terms. (Since the categorical program would be a separate state-implemented program, there normally would be no need to intervene in local programs.)

The complexity of the removal credit program still would need to be addressed to keep the workload of permitting authorities within reasonable boundary and to avoid redundant treatment.

This would be accomplished by eliminating the very complex system of POTW by POTW, facility by facility, standards, which requires difficult analytical tests. Instead EPA would issue removal allowances on a national basis along with the categorical guidelines. This approach would use surrogate pollutants to set the degree of removal allowance to be granted. The allowance would not be a "go-no go" test, but rather a sliding side or percentage removal allowance based on the annual percent removal of BOD (for toxics removed by secondary treatment), or on the annual percentage removal of settleable solids (for toxics removed by primary treatment). While surrogates generally are not sufficiently accurate to determine effluent concentrations, and thus cannot be used to set permit limits, they should be accurate enough to determine percent removal on an annual basis, and to set removal allowances. (This difference in the suitability of surrogates is in large part due to the fact that effluent limits are based on what is "left," where a small absolute error results in a large percentage error, while a removal allowance is based on what is removed, where a small absolute error is a small percent error. There also is generally a better statistical base with multiple users.) By using percent annual removal for POTW's, events such as normal by-passes would be factored in to the allowance.

Each POTW would certify its annual percvent removal of BOD and settleable solids using guidelines developed by EPA. Each categorical discharger would request a permit from the state permitting authority. The state would determine (1) the degree of removal required by the categorical standards, and (2) a removal allowance based on the combination of the certified POTW performance and the national removal allowance curve provided by EPA. The two would be combined to determine removal requirements for the specific categorical discharger.

This proposal should not only solve the problems, but also be politically acceptable, as it meets the legitimate needs of virtually all interested parties.

POT's and local authorities.—The local authority, who truly are unable to cope with the current program, would only have to run a reasonable and normal local pretreatment program and meet their permits. They should be delighted.

State authorities.—They will have the added burden of categorical discharge permits. However, given the simplification in the program resulting from national (percentage) removal allowances proposed above, this should be less additional work by far than that required for approval of pretreatment programs, and for approval of case-by-case removal allowances, required under present regulation.

EPA.—EPA will have the added burden of determining sliding scale removal allowances. This burden can be simplified if the law grants the administrator considerable discretion in the degree of scientific analysis required to set the scales, and allows such removal scales, where appropriate, to be determined for families and categories of pollutants rather than for every individual pollutant. Regardless of whether or not this simplification is authorized, the work for EPA should be considerably less than implementing the current program or any of the "opt-out" alternatives.

Environmentalists.—The environmental groups also should be pleased. "Opt-out" which allows some toxic polluters to escape any controls will be "dead." Categorical standards will be administered by the States, and the "sweet-heart deals" with local authorities which some environmental groups have feared will be impossible. The control scheme is totally technology driven and no water quality based waivers are involved. Redundant treatment will be eliminated, but the environmental groups have claimed they do not favor redundant treatment. Perhaps most important, it is a program which can be put into place quickly and with general support; the current law and regulations will continue in widespread disfavor, and many of its impractical requirements will result in confusion and continued delay in implementing an effective program. This helps no one. This approach should result in a significant net gain for the environment.

Industry.—Those industries who had hoped to escape controls entirely under an opt-out provision, or under water quality base [BAT] waivers may not be pleased. Industries whose pretreatment costs are essentially related to the degree of removal required will be helped the most; those whose costs are essentially incurred when any degree of pretreatment is required will be helped the least. However, responsible industry which accepts the basic philosophy of the '77 act should be pleased: Redundant treatment is eliminated.

Mr. ROBERT SMITH. Thank you, Mr. Chairman.

Mr. MCNULTY. Mr. Packard.

Mr. PACKARD. Thank you, Mr. Chairman.

In your testimony you indicated that section 10 of H.R. 3282 would produce, if enacted, ill-founded results and changes in the 404 program. What consequences do you foresee that such enactment would have of section 10 to the 404 program and its implementation? And also what effect would it have upon your industry?

Mr. GLOVER. Our basic concern there, Congressman, is that these changes would codify existing standards, would lead to inflexibility in the program, and possibly litigation.

We are afraid that if the standards were codified as opposed to simply being in the regulations it would lead to increased litigation.

In addition, the section 10 would codify the provisions for interagency review. We think there is some flexibility that needs to be left in that, so that the agencies can adapt to changing conditions. Again we are afraid by freezing them we would produce situations where the time to get legitimate permits was simply—that is basically my concern.

Mr. PACKARD. Thank you. I have no further questions.

Mr. MCNULTY. Thank you. Do members of staff have any questions?

Mr. Glover, thank you for taking time out of a busy life to come and testify this morning. We are grateful to you.

Mr. GLOVER. Thank you, sir. It has been my privilege.

Mr. MCNULTY. The agenda next lists Jerrel Smith, manager of Union Electric Institute, and John Gibson.

Are you gentlemen here? Good.

Mr. Smith, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

EDISON ELECTRIC INSTITUTE: WRITTEN TESTIMONY ON CLEAN WATER ACT REVISIONS

INTRODUCTION

As EEI indicated in testimony before this Subcommittee in July, 1982, the electric utility industry believes the Clean Water Act can be improved significantly. At that time, EEI applauded the moderate and, on the whole, sensible set of proposals for amendments to the Clean Water Act forwarded by the Administration to Congress. Much has changed since then, however. The Administration now has no legislative proposals pending before this Subcommittee. Rather, the Subcommittee is focusing primarily on H.R. 3282, introduced by Representative Howard.

EEI believes that this bill does not improve the Clean Water Act's regulatory framework. Further, it does not adopt the thermal variance provisions suggested by the Administration in its 1982 legislative proposals. This testimony focuses on the changes that are needed in House Bill 3282's provisions concerning water quality standards and criteria, and concerning substantive and procedural requirements for obtaining dredge and fill permits under § 404.

EEI's testimony also discusses two amendments which EEI believes should be included in any reauthorization bill—(1) streamlined thermal variance mechanisms and (2) ten year permits. Additionally, it discusses the anti-backsliding, criminal sanctions and preservation of rights provisions which are being considered by the Senate, and which EEI strongly opposes.

HOUSE BILL 3282—THE WATER QUALITY STANDARDS AMENDMENTS

The water quality standards provisions of House bill 3282 make changes in three main areas: toxics control, antidegradation, and use upgrading and downgrading. EEI believes that these amendments are unnecessary, because current EPA rules already cover these matters effectively. Enacting H.R. 3283 would serve only to dis-

rupt and delay effective, ongoing EPA and state regulation under the existing statutory provisions and EPA regulations.

A. Controls for "toxics hot spots"

Section 7 would bypass the entire state-based system for water quality regulation for which Congress has provided in the Act. It would require *EPA* to develop "individual control strategies" involving limitations "beyond BAT" for waters which *the Agency* determines will not meet, in timely fashion, applicable state water quality standards to achieve "fishable/swimmable" water quality, due to point source discharges of toxic pollutants. In effect, the provision scraps the present water quality regulatory program as to toxics. It places virtually sole responsibility for regulating toxics to meet *state* water quality standards in *federal* hands, with little, if any, role for the states.

EEI strongly opposes this provision for three reasons. First, the provision is inconsistent with both the substance and structure of the existing Act, which places primary responsibility on state regulators, not EPA, for setting, implementing and enforcing compliance with state water quality standards. Second, the provision is unnecessary, because EPA already has adequate authority under the Clean Water Act to ensure that states comply with the duty that Congress imposed upon them under the Act to implement water quality standards by imposing limitations necessary to achieve those standards.

Both of these reasons are illustrated in the structure of the Act's current provisions. Section 303 of the Act requires states to develop water quality criteria sufficient to attain designated uses. EPA is required to review proposed state standards and to ensure that they are consistent with the requirements of the Act. Further, the Act mandates achievement of limitations necessary to implement applicable water quality standards. These reguirements apply to toxics, just as they do to conventional pollutants, and they are now being implemented by the states for toxic pollutants. Clearly, then, the Act already provides adequate mechanisms for controlling toxic discharges. These mechanisms are to be implemented by *states*, subject to EPA review and oversight. The new layer of EPA based regulation proposed in § 7 of H.R. 3282 would be duplicative and disruptive.

Third, § 7(a) is unworkable. EPA simply does not have the manpower and money to itself regulate every individual toxic discharged under § 7(a) in each of the 50 states, particularly not within the stringent time periods set out in § 7(a).

In sum, the § 7(a) provisions are unneeded and unwise and should be deleted from H.R. 3282.

B. Antidegradation

H.R. 3282 also contains, in § 6(b), a provision narrowly restricting the circumstances under which new pollutant discharges, or "degradation," may be allowed. This provision—apparently designed to codify EPA's present rules—was inserted in response to EPA's proposals to revise those rules. As you are no doubt aware, the Administration is now reworking its regulatory proposals on antidegradation (as well as on use downgrading and upgrading, as discussed below). EEI believes the antidegradation provisions cut irrationally across established technology and water quality management provisions of the Act, and thus are bad public policy. EPA is making efforts to deal with these issues in a reasonable fashion by regulatory means, within the existing structure of the Act. Whatever may be the outcome of that regulatory process, EEI believes that it is fundamentally unwise to codify—and thus freeze in statutory language—detailed aspects of the water quality program such as these. Even if Congress feels it necessary to codify EPA's current antidegradation rules in the statute, however, § 6(b) does not do so. It goes *far beyond* EPA's current regulations. For example, it omits the crucial language in EPA's rules requiring that antidegradation policy and implementation conform to § 316(a) of the Act, thus risking nullification of the Act's important thermal variance provision.

Section 6(b) also goes beyond EPA's current rules by prohibiting new or increased pollutant discharges unless (1) such discharges are necessary to accommodate "essential," (as opposed to the rules' "justifiable,") economic and social developments, and (2) there is "no feasible alternative" to the development. While EEI believes new power plant construction should clearly qualify under the "essential" test, and will frequently do so under the "no feasible alternative" test, these are nevertheless unduly restrictive, burdensome tests. Read broadly, they could impose review requirements analogous to those under NEPA upon the state NPDES permit licensing process, thus interjecting additional delay and expense into an already burdensome process.

The antidegradation provision is further flawed in that it would require states which choose to allow new pollutant discharges to "take all practicable steps to minimize the effects of development on water quality." Again, if read broadly, this provision could require permittees to offset new discharges by instituting control measures on other sources, where practicable. Thus, it may introduce into the Clean Water Act all the complexities of "offset" requirements similar to those under the "non-attainment area" program of the Clean Air Act.

For these reasons, EEI believes that the antidegradation provisions ought to be deleted entirely or, at the very minimum, conformed to EPA's current regulations.

C. Use downgrading and upgrading

Section 6 of the bill would essentially codify EPA's regulations on use downgrading and upgrading. This is both unnecessary and counterproductive. As noted above, the Agency is working to resolve these issues by regulatory means. There is no reason to believe that its efforts will not produce reasonable, adequately protective regulations which implement the goals and directives of the Act. Indeed, that is the purpose of the administrative system, whereby the Agency proposes regulations and solicits responses from members of the public and other agencies. This process should not be circumvented.

More importantly, it would be unwise to engrave in stone any particular set of detailed requirements or prohibitions on use downgrading or upgrading. Such an approach deprives EPA of the flexibility needed to accommodate changing circumstances.

THE 404 AMENDMENTS

Turning to § 404, we believe that there is no demonstrated need for the wholesale and fundamental statutory changes proposed in § 10 of H.R. 3282, that those changes are unwise, and that the statutory language should be left flexible so that it can accommodate the continued regulatory development that experience with the complex § 404 program will dictate.

First, § 10(a) of the bill would enshrine in statutory language a narrow, single-factor standard ("unacceptable adverse effect on the aquatic environment") which deprives the Corps and EPA of needed flexibility in permit issuance. Second, § 10(a) would require an evaluation of all practicable alternatives in every case. Thus, even where the proposed construction would not constitute a "major federal action," this statutory language would still require NEPA-like review of all alternatives, with all its attendant delays.

Third, § 10(a)'s "least damaging practicable alternative" requirement imposes a quixotic pursuit of environmental purity without sufficient regard for cost. The definition of practicability, which is apparently derived from the EPA Guidelines, purports to take economics into account. However, if those guidelines are any indication of how this section will be interpreted, cost-benefit analysis will not be incorporated into the identification or analysis of alternatives, and an alternative can only be excluded from consideration if it can be shown to result in unreasonable or excessive costs. Thus, under this standard, a power plant could be forced to follow a slightly less damaging environmental alternative at a substantial increase in cost, even though a discharge at the proposed site would not result in any significant degradation of waters of the United States. If, in addition to these express standards, the amendment or its legislative history incorporates the EPA Guidelines' "water dependency" test and its current presumptions, the construction of new power plants could become quite problematical. At best, overcoming those presumptions could be time-consuming; at worst, the presumptions could mandate construction at a far less economic location.

In sum, § 10(a) will codify an excessively stringent standard, it will delay power plant construction by instituting a NEPA-like evaluation of alternatives, and it could dictate the siting of new power plants without adequate consideration of economic factors with the obvious result of substantial increases in the cost to ratepayers for only a marginal or speculative improvement in the environment.

Section 10(b) concentrates on procedures, rather than standards, but its modifications would have a similarly grave effect on power plants. Section 10(b) substantially modifies the procedures applicable to individual permits by conferring on EPA, the Department of Interior, and the Department of Commerce the right to appeal a district engineer's decision to issue a permit. Such a right of appeal, if exercised, automatically delays permit issuance by at least 60 days and requires both the district engineer and the Secretary of the Army to justify the denial of an appeal in writing. This amendment undermines the regulatory relief provided in the Corps

regulations at 33 C.F.R. § 325.2(d)(4), whereby the Corps can ignore untimely comments from these federal agencies.

More importantly, the creation of specific rights of appeal for these agencies reverses the Congressional commitment to the shortening of time for permit processing, as evidenced by the current § 404(q), and gives federal agencies with no specific statutory authority over § 404 permits the means to delay the construction of power plants and, ultimately, to require unnecessary and statutorily unfounded mitigation measures. There is no reason to believe, based on experience in the field, that the present, delicate balance of agency interests should be so decisively altered.

IMPROVED THERMAL VARIANCE PROVISION

EEI believes that, at a minimum, any House bill should contain revisions to the thermal variance provisions of § 316. As EEI stated in July, 1982, a revised thermal variance provision which streamlines the standards and procedures for obtaining thermal discharge variances is urgently needed. Once again, EEI would like to endorse the Administration's 1982 proposal to amend § 316(a).

When the Federal Water Pollution Control Act was first passed, Congress was concerned about the environmental effect of discharging heated water from steam-electric power stations. It classified heat as a "pollutant" and required NPDES permits for its discharge.

The standard off-stream system required to remove heat from cooling water is the evaporative cooling tower. Cooling towers have three negative characteristics. First, they are very expensive, costing between 30 and 75 million dollars—including burning of an additional 50,000 tons of coal each year—for a single 1000 MW generating unit. Second, they evaporate large quantities of water to dissipate heat to the atmosphere, consuming up to 250 percent more water than open-cycle cooling. This is particularly important in the more arid parts of the nation. Third, they may sometimes cause more adverse side effects than they prevent. These effects potentially include ground level fogging, icing of nearby exposed surfaces in winter, cloud formation, salt drift from plants using ocean cooling water, and aesthetic impact. Though cooling towers may be acceptable in some circumstances, these three negative traits make them an unattractive alternative where some form of onstream cooling can be used.

Heat is not like other pollutants. Heat can alter the aquatic habitat (sometimes in beneficial ways), but it dissipates rapidly to the atmosphere. It is not a toxic substance, and does not react chemically with substances, plants, or animals. Recognizing the unique nature of heat, and that costly cooling towers should not be required where they are not needed, Congress provided from the outset in the Act for thermal variances based upon biological studies.

Ten years of intensive scientific investigations in the course of such studies now show that the environmental effects from discharges of heated water are minimal or nonexistent and therefore thermal variances for existing sources are usually granted. But utility managers are not likely to seek variances for new plants, since cooling system design must be decided very early in a plant's construction schedule. Even when managements believe there will be no significant environmental harm from thermal discharges, they may be unable to delay constructon long enough to conduct the detailed biological studies required by § 316(a), to pursue a variance through the labyrinth of administrative procedures at both state and federal levels, and to obtain a decision under the uncertain and subjective test provided in the Act.

In short, it is now documented that discharges of heated water simply are not the critical environmental problem feared ten years ago. Yet heat is still classified as a pollutant in the Act. Expensive cooling towers are still presumptively required, frequently to the exclusion of other more sensible heat dispersion techniques like diffuser pipes, cooling ponds and lakes, and careful siting of new open-cycle plants. Millions must still be spent on complex, individual biological proofs that almost always reach the conclusion of no significant harm to the aquatic environment.

Full-length biological "demonstrations" should be required for a variance only when there is reason to believe that a thermal discharge might cause significant environmental harm. Thermal discharges are not likely to cause significant environmental harm if they comply with water quality standards. Thermal water quality standards to protect fish and wildlife were set under EPA supervision, and must be reviewed by the states at least every three years. These standards are a convenient, simple, relatively objective basis for determining whether thermal discharges should be permitted. The Act should, as EEI has argued, be amended to allow thermal variances when a state's thermal water quality standards are satisfied.

When such standards would be exceeded, and there may then be more question whether environmental harm might occur, permittees who wish to perform biological studies should be allowed to do so to obtain a variance. They should not, however, have to show the continued presence of exactly the same "indigenous" population of aquatic organisms as would have resided in the area in the absence of a thermal discharge. Rather, a satisfactory demonstration should be based on maintenance of a "balanced population." Some species will avoid, and others will be attracted, to the warmer water. These subtle, non-persistent species shifts are not the sort of significant adverse environmental impact that should automatically require the expenditure of society's limited resources on expensive, multi-million dollar cooling towers.

Congress now has the information it needs to streamline thermal decisionmaking. It can—and should—provide a much more efficient procedure for deciding whether various types of control technology—particularly cooling towers—should be required. We urge you to incorporate the Administration's § 316(a) proposal in any reauthorization legislation.

TEN YEAR PERMITS

EEI also believes that any reauthorization bill should include a provision extending the NPDES permit term under § 402 from five years to ten. the Clean Water Act has now been in effect for ten years. The five-year NPDES permits issued in the first round of permitting are now expiring, and a second round of permits is being issued. First-round permits required sources to meet effluent limitations based on the "best practicable" control technology, and generally more-stringent BAT requirements will be imposed in second-round permits. There are roughly 50,000 NPDES permits outstanding. Preparing applications for processing a single permit can take years and tens of thousands of dollars.

Both regulators and regulated industry need greater finality and certainty. After second-round permits impose BAT and BCT requirements, no further stages of technology-based limitations will remain. The time has come to extend the permit term to at least ten years, as the House Subcommittee on Oversight and Review has recommended. This would save everyone a great deal of time and resources. As the House Oversight Subcommittee said: "Extending [the permit term] to 8 or 10 years would allow a more effective utilization of the overburdened regulatory staffs of the EPA and the States." [1]

Some have argued that extending permit terms to ten years amounts to "no further progress for a decade." This argument is simply not true. EPA already had authority under § 402(b)(1)(C) of the Act to modify permits "for cause including, but not limited to, . . . change in any condition that requires a temporary or permanent reduction of elimination of the permitted discharge." EPA currently uses "reopener clauses," in certain cases, to provide for future incorporation of more stringent technology-based limitations. Existing permits currently may also be revised whenever new information indicates different permit conditions should have been imposed.

Thus, EPA has sufficient discretion to require permit reopening where it is appropriate. The provisions noted above impart adequate flexibility to ten year permits, and they eliminate any need for unwieldy and burdensome "mandatory reopeners" such as those required by the Senate in its ten year permit provision. In practice, such a requirement would impose unnecessary administrative burdens upon EPA and state regulators, negating the positive aspects of extending permit terms to ten years.

ANTI-BACKSLIDING

The far-reaching, inflexible anti-backsliding provision included in Senate bill 431 would essentially freeze *all* existing and any future NPDES conditions (not just effluent limitations) without allowing a permit issuer to consider the wisdom of needed changes as permits are reissued or renewed. It would allow only one exception—effluent limits could be adjusted where the treatment approach had been properly implemented, but the limitations nevertheless could not be achieved. EEI strongly opposes such an arbitrary, inflexible provision.

While movement toward achieving "fishable and swimmable" water quality is a salutary goal of the Act, Congress has provided a carefully tailored regulatory

[1] Report on Implementation of the Federal Water Pollution Control Act, Subcommittee on Oversight and Review of the House Committee on Public Works and Transportation, December 1980, at 62.

framework for doing so—one that deliberately balances a myriad of competing social and economic policies. This "permit freeze" provision—indeed any arbitrary anti-backsliding "ratchet" policy—cuts irrationally across the framework of the Act and regulations to prohibit any later reconsideration by the permit issuer, on any ground, of the wisdom of previous permit decision. Congress should not prevent the careful judgments needed, over time, under this Act by adopting a sweeping and unnecessary "ratchet" provision.

Such a rigid anti-backsliding provision will not produce significant environmental gains—it would merely lead to regulatory requirements which are unnecessary and are (1) unfair, (2) economically and, in some cases, environmentally counterproductive, and (3) inconsistent with the water management objectives of the Act.

Whether or not an anti-backsliding provision is in effect, any permit issued under the Clean Water Act must implement the Act's technology-based and water quality-based regulatory provisions, and in so doing, it will ensure, as Congress has provided, that all environmental gains that are warranted are achieved. An anti-backsliding policy can achieve no more. All a provision like that in the Senate bill can do is arbitrarily "lock in" any permit decision made under those regulatory provisions when EPA or the states later believe they should be reconsidered—no matter why that belief is held and no matter how strongly it is held. This is simply irrational and, by definition, results in needless requirements whenever invoked.

It is not difficult to see the myriad circumstances under which the Senate provision could produce unfair and inequitable results. On its face, it locks permittees into compliance with existing permit limitations and standards, even though the permitting authority has found, pursuant to a request for a variance, that those limitations are unreasonable or unnecessary (thus rendering the Acts carefully crafted variance provisions useless, in many cases); and even though new information discloses, or changed circumstances dictate, that the limitations are unreasonable or unnecessary; and perhaps even though a court of law has determinated those limitations or standards are illegal and invalid. Further, if applied to gross, rather than net pollutant limitations, the provision would unfairly bind dischargers to limitations based upon the amount of pollutants in the intake water at the time the permit was first issued, even though subsequent increases in pollutants levels in intake waters (over which dischargers may well have no control at all) make achieving such limitations uncertain or impossible.

Such a provision also would be economically and socially counterproductive. For instance, as EPA's existing permit modification provisions recognize, increases in production or flow must be allowed in many cases where mass limits are used. Otherwise, increases in production or flow will be impossible for the many industries with production-based or flow-based mass limits, even though the treatment technology is operated at the same removal efficiency. Thus, locking existing facilities into present mass limitations would also lock in existing rates of production, preventing industrial growth and development. Additionally, dischargers would be forced to spend limited resources to comply with overly stringent or unnecessary requirements, rather than concentrating resources upon more critical requirements. This is both wasteful and socially counterproductive.

Anti-backsliding requirements also may prove environmentally counterproductive. This is especially true for utilities, for example, if anti-backsliding rules alone force them to build expensive cooling towers notwithstanding § 316's thermal variance provisions. As EEI's previous testimony has indicated, the adverse effects of cooling towers are myriad, and often outweight any water quality gains achieved.

In addition, if such requirements were applied to water quality-based limitations, states effectively would be prevented from engaging in the careful, dynamic water quality planning and management Congress has required in § 303 of the Act. Reallocation of stream-loading allowances, for example, would be arbitrarily constrained. Further, facilities on pollutant-limited stream segments which are subsequently cleaned up would be unable to add additional capacity, because they would exceed their water quality-based permit limitations (which would then be based upon waste load allocations that are no longer necessary).

CRIMINAL SANCTIONS

The proposed amendment to § 309(c) is Senate bill 431 adopts wholesale the revisions EPA advocated in 1982. The amendment would double the penalties for first time offenses done "knowingly", and would make all such violations felonies.

According to EPA, its proposal was "intended to address intentional violations of the Act occuring on a regular basis over an extended period of time that result in significant harm to the public health or the environment . . . ." EPA said the lan-

guage was "not directed or intended to apply to isolated incidences of either unpermitted discharges or discharges exceeding permit limitations." Yet nothing in the proposed amendment would limit its application to intentional, repeated, harmful violations.

Under this "knowingly" proposal, the only prerequisite to imposition of what EPA has called "extraodinary punishment" for every violation is that the violator simply be aware that his act is likely to result in an unpermitted discharge of pollutants. There is no requirement that discharging pollutants be one's conscious object or desire, no requirement that the discharge harm anyone or anything, and no requirement that the discharge be repeated. This is a very broad range of conduct to expose to such "extraordinary punishment," with only "prosecutorial discretion" to detemine who goes to jail and who does not.

Although EEI believes more severe penaltie are not needed under the Clean Water Act, if Congress disagrees, it should at least carefully restrict such penalties to the egregious violations EPA intended to punish. Any "super" penalties should apply only to intentional violations (i.e., those in which it was the actor's conscious object or decision to dispose of pollutants illegally), that are repeated on a regular basis for an extended period, and that result in significant harm.

PRESERVATION OF RIGHTS AND INTERSTATE DISPUTE RESOLUTION

Proposed § 505(e)(4) in Senate Bill 431 is confusing, unnecessary and disruptive. Its first sentence merely seems to recite the obvious proposition that lawsuits can be filed in state courts under state laws. The Senate Committee Report indicates that the sentence is designed merely to support the declaration in the preceding paragraph (subsection (e)(2)) that state common law is not displaced or preempted by the Clean Water Act.[2] We believe tha such a provision is simply confusing and unnecessary.

The second sentence of proposed § 505(e)(4) is also flawed. First, the provision would seem to allow a state to sue another state in federal district court. This clearly conflicts with 28 U.S.C. § 1251, which confers upon the United States Supreme Court original and exclusive jurisdiction over all controversies between two or more states.

Second, the provisions can be read to allow states or municipalities to enforce their own state regulatory requirements directly against dischargers in other states. The Act now wisely avoids such direct conflict or regulatory jurisdiction by statutory mechanisms like §§ 401(a)(2), and 402(b)(3), (b)(5), and (d)(2)(A) (which provide for interstate dialogue and dispute resolution at the time an NPDES permit is issued) and such regulatory provisions as 40 CFR § 35.1550(c)(4) (which requires that states insure that NPDES permits implement a downstream state's water quality standards). EEI therefore believes that such a provision is ill considered and unnecessary, and should not be adopted.

The Senater bill also proposes to amend § 511 of the Act to allow EPA enforcement, at the behest of a downstream state, when pollution from an upstream state is violating the downstream state's water quality standards. This section is loosely drafted at present. At a minimum, its focus should be limited to interstate pollution causing or contributing to a violation of water quality standards, as should the similar provisions of proposed § 403(d)(2)(B). EEI believes, however, that no such change is needed at all, since the present statutory provisions protecting downstream states are sufficient.

Mr. McNULTY. Please proceed.

TESTIMONY OF JERREL D. SMITH, MANAGER, ENVIRONMENTAL SERVICES DEPARTMENT, UNION ELECTRIC CO., ST. LOUIS, MO., AND JOHN GIBSON, ATTORNEY, PACIFIC GAS & ELECTRIC; ON BEHALF OF THE EDISON ELECTRIC INSTITUTE

Mr. JERREL SMITH. Yes, sir, we are ready.

I am Jerrel Smith, manager of the Environmental Services Department of Union Electric Co. in St. Louis. With me today is Mr. John Gibson, who is an attorney with Pacific Gas and Electric, in

[2] Report of the Committee on Environment and Public Works to Accompany S. 431, at 28.

San Francisco. Mr. Gibson and I will share the comments this morning if we may.

Mr. Chairman, I intend to address basically three points as briefly as I can. I would like to talk about the thermal issue which is, of course, very important to the electric power industry. I would like to speak briefly about extending the term of the permits, and in addition make a few comments regarding antibacksliding, which I understand has been considered by the Senate.

We appeared before this committee in July of last year and spoke to you at that time about what we thought to be the needs of the industry in terms of modifying section 316(a) of the act to make it more flexible for us, particularly in terms of being able to plan and build new power facilities.

When the Clean Water Act was passed, Congress was concerned about the impact of thermal discharges on the water bodies, and rightfully so. We now have, however, 10 years of experience in operating under the Clean Water Act and a good bit of information has been developed which shows that thermal impacts on our water bodies in the country are minimal at most.

Mr. McNULTY. Mr. Smith, are you speaking extemporaneously or from a statement?

Mr. JERREL SMITH. Extemporaneously, yes, sir.

Mr. McNULTY. Thank you.

Mr. JERREL SMITH. We are interested once again in encouraging you to consider introducing language into section 316(a) of the act that would allow us more certainty in our planning for new power facilities in particular. If we can make a demonstration that the water quality standards for the particular waters that are receiving the heated discharges can be met, we think that would provide a good showing that a 316(a) variances should be approved.

Let me try to give you an example of the problems we face in the industry in trying to deal with the present language under section 316(a) in building new facilities. We have to plan, as you well know, many years in advance of purchasing and building powerplant facilities. In this process we have to choose our equipment based on whether or not we are going to be allowed to discharge heat into the water bodies, or whether we have to build a cooling tower to treat the heated discharge. That affects the entire design of the powerplant.

So we need all the certainty in that planning process that we can have. It is extremely difficult to operate under the present language of the act, making a clear demonstration before States, Federal agencies, and others in public hearings that we have made a successful biological demonstration for a variance as required in section 316(a). We would have to complete several years of biological studies on a water body in advance of having a thermal discharge to satisfy that requirement. We can more simply make a demonstration that the thermal water quality standards would be met.

Those water quality standards are set by the State agencies, reviewed by the Federal EPA and are designed to protect and maintain a balanced indigenous population. We would like very much for you to consider this as you are discussing the modifications to the act, and consider introducing language that would allow us to

make a successful thermal variance demonstration through showing that the water quality standards for the thermal discharge will be met.

We would also like you to consider the removal of the term "indigenous" from that section of the act. We do not think that we should be required to make a demonstration that the exact, precise indigenous population will be maintained in the small affected area of the discharge. In some cases it might be desirable to have slight changes in the indigenous population. We would like some flexibility in this section of the act so the States would be able to decide whether it is desirable or acceptable to have some slight shift in species or quantity of particular species in those relatively small affected heated discharge areas.

I would like now to turn briefly to the term of the NPDES permits. We have previously supported the extension of the permit term to 10 years. We think that once we apply best conventional technology and best available technology, that the term of the permit could easily be extended, and it would save all of us a good bit of work. I can tell you from my own personal experience that it is a great job to prepare applications for a facility, particularly a powerplant. It is also a very extensive process.

There are something like 50,000 NPDES permits outstanding. We think that the burden of reissuing permits could be substantially reduced if the term of the permit were extended. As the House Oversight Subcommittee stated: Extending the permit term to 8 to 10 years would allow more effective utilization of the overburdened regulatory staffs. We certainly agree with that conclusion, and we do not think this would risk achieving our goal to have fishable and swimmable waters.

I would like to comment briefly, if I may, on the antibacksliding provisions that have been discussed in the Senate. We are strongly opposed to these antibacksliding provisions for a number of reasons. They would be very counterproductive environmentally, economically, and socially. The provision would lock into the permit all of the permit conditions and remove the flexibility the State needs in making decisions. It could prevent the expansion of a facility, or an increase in production at an existing facility.

As an example of what the antibacksliding language could do in the electric industry, if I were to build the first of several units at a new powerplant, and designed one outfall for the thermal discharge, making a successful demonstration to operate that unit with onstream cooling, then wanted to build a second unit discharging through that same point I would not be allowed to discharge more heat. This would effectively prevent me from obtaining a 316(a) variance under existing law because I could not discharge additional heat from that point.

We have other treatment facilities that would be affected much the same way. For example, we collect the ash from our powerplants in lagoons which have a discharge. When we initially open a powerplant site, we build that facility large enough to accommodate additional units. Because of that, the treatment may initially be somewhat better than necessary to meet the effluent limitation. But over time as more ash is collected in the pond it degrades slightly the efficiency of that treatment system. If I were to be

faced with compliance with an antibacksliding policy while building a new powerplant, I would probably design my treatment facilities in such a way that they would only barely meet the effluent limitation rather than going beyond that level of treatment, because I could not afford to be locked into a greater level of treatment if I could not further expand that facility.

We would like you to consider those problems as these matters are being discussed. I think that ends my comments, so I would like to turn to Mr. Gibson who will speak on water quality standards and section 404.

Mr. McNULTY. Mr. Gibson, good morning.

Mr. GIBSON. Good morning, Mr. Chairman, members of the subcommittee. I am John Gibson, an attorney with Pacific Gas & Electric Co. and chairman of EEI's Clean Water Act Issue Group.

As Mr. Smith indicated, I would like to discuss the water quality standards and section 404 provisions of H.R. 3282. The water quality standards provisions make changes in three main areas, toxics control, antidegradation and use upgrading and downgrading. EEI believes that these amendments are unnecessary since current EPA rules already cover these matters effectively.

Enacting H.R. 3282 in its present form would serve only to disrupt and delay ongoing EPA and State regulations under existing statutory provisions and EPA regulations. Section 7 of the bill would require EPA to develop individual control strategies involving limitations beyond BAT for discharges of toxic pollutants. In effect, this provision would place primary responsibility for regulation of toxics to insure compliance with State water quality standards in Federal hands.

EEI strongly opposes this provision for two reasons. First, it is unnecessary because EPA already has adequate authority under the act to make sure the States exercise the power, indeed the duty, Congress imposed on them under the act to implement water quality standards by establishing limitations necessary to achieve those standards.

Second, the provision is inconsistent with the existing act which places primary responsibility on State regulators rather than on EPA for setting, implementing, and enforcing compliance with State water quality standards. Section 303 of the act requires States to develop water quality criteria sufficient to attain designated uses. EPA is required to review proposed State standards and to insure that they are consistent with the requirements of the act.

Further, the act requires achievement of limitations necessary to implement applicable water quality standards. These requirements apply to toxics, just as they do to conventional pollutants, and are now being implemented by the States for toxic pollutants. Clearly then the act already provides adequate mechanisms for controlling toxic discharges. These mechanisms must be implemented by States subject to EPA review and oversight.

Section 6(b) of the bill narrowly restricts the circumstances under which new or increased pollutant discharges may be allowed. This provision was inserted in response to EPA's proposals to revise its existing nondegradation regulations. As you are no doubt

aware, the administration has now reworked its regulatory proposals on antidegradation and on use downgrading and upgrading.

EEI believes that antidegradation provisions cut irrationally across the established technology based and water quality provisions of the act, and thus are bad public policy. EPA is making efforts to deal with these issues in a reasonable fashion by regulatory means within the existing structure of the act. Whatever may be the outcome of that regulatory process we believe that it is unwise to codify and thus freeze in statutory language such detailed aspects of the water quality program.

Even if Congress felt it necessary to codify EPA's current antidegradation rules in the statute, however, section 6(b) does not do so. It goes far beyond EPA's current regulations. For example, it omits the crucial language in EPA's regulations requiring a State's antidegradation policy conform to section 316(a) of the Act, thus risking nullification of the act's important thermal variance provision.

Section 6(b) also goes beyond EPA's current rules by prohibiting new or increased pollutant discharges unless one, such discharges are necessary to accommodate essential economic and social developments, and two there is no feasible alternative to the development.

While we believe that new powerplant construction should clearly qualify under the essential test and will frequently do so under the no feasible alternative test, these tests we believe are unduly restrictive and burdensome. The antidegradation provision is further flawed in that it would require States that choose to allow new or increased pollutant discharges to take all practical steps to minimize the effects of development on water quality. If read broadly, this provision could require permittees to offset new or increased discharges by instituting control measures on other sources where practicable. Thus, it may introduce into the Clean Water Act complex offset requirements which are similar to those which have caused such confusion under the nonattainment area provisions of the Clean Air Act.

For these reasons EEI believes section 6(b) should be deleted entirely, or at the very minimum must be conformed to EPA's current regulations.

Section 6(a) of the act would codify EPA's present regulations on use downgrading and upgrading. This is both unnecessary and counterproductive. As I have said, the Agency is working with Congress to resolve these issues by regulatory means, and there is no reason to believe that its efforts will not produce reasonable and adequately protective regulations which implement the goals of the act.

This process should not be short-circuited by legislation. We think that it would be unwise to engrave in stone any particular set of detailed requirements or prohibitions on use downgrading or upgrading. Such an approach deprives EPA of the flexibility needed to accommodate changing circumstances.

Turning finally to section 404, we believe that there is no demonstrated need for the wholesale and fundamental changes proposed by section 10 of H.R. 3282, that those changes are unwise and that the statutory language should be left broad and flexible so that it

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can accommodate continued regulatory evolutionary development which experience with complex section 404 programs will produce.

First, section 10(a) would enshrine a narrow single factor standard, "unacceptable adverse effect on the aquatic environment," which deprives the corps and EPA of needed flexibility in permit issuance.

Second, section 10(a) would require evaluation of all practicable alternatives in every case. Thus, even where the proposed construction would not constitute a major Federal action this statutory language would still require a formal NEPA-like review of alternatives with its attendant delays.

Third, section 10(a)'s least damaging practicable alternative requirement imposes a quixotic pursuit of environmental purity with insufficient regard for cost. This concept of practicability, which is apparently derived from EPA's present guidelines, purports to take economics into account. However, if those guidelines are any indication of how the section would be interpreted, cost-benefit analyses will not be made and an alternative would be excluded from consideration only if it can be shown to result in wholly disproportionate costs.

Under this standard a powerplant could be forced to adopt an unwanted alternative at a substantial increase in cost, even though discharges at the proposed site will not result in any significant impairment of water quality.

In sum, section 10(a) will codify an excessively stringent standard, it will delay powerplant construction by instituting a NEPA-like evaluation of alternatives, and it could require noneconomic siting of new powerplants with the obvious consequences of substantial increases in the cost to ratepayers for only speculative improvements in the environment.

Section 10(b) deals with procedures rather than standards, but it would have a similarly stultifying effect on powerplant siting. Section 10(b) substantially complicates the procedures applicable to the review of individual permits by EPA, the Department of Interior and the Department of Commerce. This reverses congressional commitment to the shortening of time for permit processing as evidenced by present section 404(q). There is no reason to believe based on experience in the field that the existing delicate balance of agency interests should be so decisively altered.

Thank you very much. That concludes my testimony.

Mr. McNULTY. Thank you, Mr. Gibson. Do you both yield to questions?

Mr. GIBSON. Yes, we do.

Mr. McNULTY. Mr. Stangeland.

Mr. STANGELAND. Thank you, Mr. Chairman.

Mr. Smith, what would be the potential economic effects of the amendment related to thermal discharges that the administration proposed last year?

Mr. JERREL SMITH. If my memory serves me correctly, the information we submitted to this committee last year indicated that the cost to the industry would be on the order of $2 billion by the year 2000 and roughly $230 million a year. That was developed through a survey of the industry, and I believe a report on that, if my memory is correct, was submitted last year.

Mr. STANGELAND. Again, Mr. Chairman, and you address this in your statement, but I would like to have you elaborate somewhat. What would be the adverse consequences to utilities of statutory antibacksliding requirements like those of S. 431?

Mr. JERREL SMITH. I mentioned some of the problems we would have with that provision. It will add substantially to the cost of a power facility. If we were to have to unnecessarily install a cooling tower on a powerplant, we would be spending a large amount of money, $35 million to $70 million, for one unit. And the installation of cooling towers reduces the overall thermal efficiency of the power system to the extent that on a large steam-fired unit, it would cause us to burn an additional 50,000 tons of coal per year simply because of that lost efficiency. So it is a cost matter.

It is a matter of putting our resources in the right spot and, of course, we are interested in not having to burden the ratepayer if we can avoid that. We think that using onstream cooling is very desirable, although cooling towers, where they are necessary of course, are being built, we would continue to do that.

Cooling towers have some adverse effects on the environment, although they are not, perhaps, terribly great. They are a tool we have to use, but we would certainly be locked out of using those in many cases under the antibacksliding provision.

Mr. STANGELAND. Mr. Gibson, if this committee were to adopt the beyond BAT approach taken in section (a) of H.R. 3282, what changes if any should be made to that section?

Mr. GIBSON. EEI believes, of course, that 7(a) is duplicative of existing statutory provisions, as I testified, and should be deleted. However, if it is retained, we believe the responsibility for the implementation of the program should be placed in the States rather than EPA, that the fixed statutory time period should be omitted or conform to the time periods in S. 431, and that the 3-year compliance period for individual sources should run from the time the individual permits are modified, rather than from the earlier date of final strategy promulgation.

Mr. STANGELAND. Thank you. No more questions, Mr. Chairman.

Mr. MCNULTY. Thank you, Mr. Stangeland.

Mr. Edgar.

Mr. EDGAR. Thank you.

Gentlemen, I wonder if you might, for the record, describe what the Edison Electric Institute is about. How large are you?

Mr. GIBSON. It is an industry association of investor-owned electric companies across the country. I think there are 189 members. They provide a very high percentage of the total electric service in the country. I don't have the figure. Maybe I can get it.

Seventy-eight percent, I am told, of electric service across the country.

Mr. EDGAR. So you are essentially an industry-oriented group that tries to look after the industry's needs?

Mr. GIBSON. That is correct.

Mr. EDGAR. That brings me to my question on the streamline thermal variance mechanism amendment that you have proposed. Wonder if you could in layman's language try to explain why you are so eager to see that variation in public law.

Mr. JERREL SMITH. Attempting to get a variance in advance of building a powerplant becomes a very uncertain engagement. I——

Mr. EDGAR. I guess what I am asking, I would like you to go back to stage one. We have all seen hyperbolic cooling towers.

Mr. JERREL SMITH. Yes.

Mr. EDGAR. We have seen other processes for cooling water that goes through an electrical process, an energy generating process. You make three specific statements as to why standard off-stream systems required to remove heat in cooling water, evaporating cooling tower, you go into three—you list them on pages 11 and 12. As I read them, they seemed pretty mild negative consequences except for the expense.

Mr. JERREL SMITH. Well, the expense is certainly important. Many utility managers are most likely going to avoid trying to do a 316 demonstration in advance of building a plant because of the long lead time and long process of trying to get approval through that particular process. The delays that may occur would simply force them to make a choice to install expensive equipment where it may not at all be necessary.

Mr. EDGAR. Do you do any studies of the negative economic impact if we don't do these things to the environment?

Mr. JERREL SMITH. Negative economic impact of onstream cooling, for example?

Mr. EDGAR. Yes.

Mr. JERREL SMITH. I don't think there is any economic impact of onstream cooling except if you were to put it on in a place where you could not meet water quality standards. Water quality standards are set to protect that stream. If we meet that standard that, it seems to me, should be sufficient to support granting of a variance.

Mr. EDGAR. I am still confused. I want to go back to ground one where we have got a generating plant. And we have to make a decision whether to cool the water in a particular way. What are you suggesting?

Mr. JERREL SMITH. I am suggesting that where the stream is able to accept the heated discharge, that is the most desirable means of dealing with that heat coming from the powerplant.

Mr. EDGAR. How hot?

Mr. JERREL SMITH. How hot? The rise of the water that comes from the powerplant is on the order of 20° above the incoming water. However, you must remember that State regulations require you to comply with certain standards in a mixing zone, you cannot affect the entire cross-section of a river, for example. There is a certain percent of the river that can be affected. And you will hardly find a 1° to 2° degree temperature rise, for example, at my powerplants, a 1° to 2° temperature rise a couple of hundred feet from where the plume goes into the river. So the overall water body is only slightly affected.

You have a general mixing zone that may have a 5°, 2°, and 1°, rise but it does not extend usually very far away from the powerplants. I am not sure I am getting at your question.

Mr. EDGAR. I am just trying to figure out whether or not there are any economic negatives. You are talking about the negative economics to you as an industry of having to cool your water before

it gets discharged. And I am trying to figure out, if you say everything is good, if you just dump it in the creek, is that in fact true.

Mr. JERREL SMITH. It is good to do so if you are meeting the water quality standards in my opinion, because it is the best balancing of the resources.

Mr. EDGAR. National water quality standards.

Mr. JERREL SMITH. Well, the thermal water quality standards which would, I believe, be set by the State and approved by the Federal EPA. Yes. Because those must be set to protect a balanced indigenous population in that receiving stream.

Mr. EDGAR. Now, how often would you think that there should be a variance?

Mr. JERREL SMITH. Well, the variance should only be issued one time because once you make a demonstration, unless there are some substantial changes it should never have to be redone, because the—you do not change the amount of heat that is discharged into that water body from that particular unit.

Mr. EDGAR. Who would monitor it?

Mr. JERREL SMITH. The companies are required under the NPDES permits to furnish information to the States on the discharges.

Mr. EDGAR. What happens after a company is found after monitoring to have been putting into the water, or into the main stream, water that is 25° or 30° higher than—what happens to them?

Mr. JERREL SMITH. Well, in the power industry that is terribly unlikely. I don't know of any that go above 30°. We are subject to all the laws of the Clean Water Act, we can be penalized for exceeding the thermal limits just like we can be penalized for exceeding any other discharge.

Mr. EDGAR. The only reason I am asking is that we have thousands of issues in terms of the kinds of water and water treatment and pretreatment and best available technology. And there are variations. What might be a very logical amendment that excludes, or gives you variance on your temperature variations may have an impact someplace else. It is very difficult for us as Members of Congress——

Mr. JERREL SMITH. I understand.

Mr. EDGAR [continuing]. To know every point at which water meets the main stream. What conditions are going to be——

Mr. JERREL SMITH. It may be useful, Congressman, to also remember that heat is really a very special, still classified as a pollutant but it does dissipate rapidly. It doesn't interact chemically with other pollutants. So it is a very special discharge and Congress recognized that when the act was drafted. We are only, we are not really saying we want to avoid making a demonstration. That is not true.

We want basically the present language or the present scope of the variance left in the act. We would like to have the opportunity indeed to make the existing biological demonstration in some cases and allow an operator to do that. Some thermal standards may have been set on the basis of best information at the time, but may be found to be too tight. If we can better use our resources and

make a demonstration under the present language of 316(a) we would like also to have that opportunity.

But as a first measure of whether we are going to comply, we would certainly prefer to have the State have the flexibility to allow us to make a showing of compliance with their thermal water quality criteria.

Mr. EDGAR. Thank you.

Mr. MCNULTY. Mr. Smith.

Mr. ROBERT SMITH. Thank you, Mr. Chairman.

Mr. Smith, I continually hear you discuss the cost to the industry. You are a public utility. I assume that means that it is an increased cost to the consumer, because you pass on those costs to the consumer. Therefore, I want to make sure that—if I were going to put you out of business and create a whole group of unattainable criteria I couldn't put you out of business because you would pass on those costs to the consumer. I want to make sure we are talking about protecting water standards in the most efficient way. That is what I thought I heard you saying.

Mr. JERREL SMITH. Well, indeed, the reason we are concerned is that the consumer does pay the price. I don't particularly feel that I have a special interest here except to protect my consumer. And the consumer uses the water body as well as I do, and we are not anxious to do something that would ruin that water resource.

At the same time we don't want to ask our consumer to pay for something that really isn't necessary.

Mr. ROBERT SMITH. Thank you.

Mr. MCNULTY. Mr. Packard.

Mr. PACKARD. Thank you, Mr. Chairman.

Either Mr. Gibson or Mr. Smith might wish to answer. Are there different standards regarding thermal standards, from State to State or from the State to the Federal?

Mr. JERREL SMITH. I believe the answer to that is yes. I operate in Missouri. And I happen to know what Missouri standards are. They are very compatible with Illinois, our neighbor, of course. There are certain other States up and down the Mississippi that have similar standards. I am not familiar with coastal zones. Maybe Mr. Gibson could address that.

Mr. GIBSON. Our State standards are probably pretty consistent with other States if dealing with the same water bodies, but they differ substantially within the State where they are applied to estuaries as opposed to open ocean, as opposed to streams.

Mr. PACKARD. That was my next question. Is there different standards or does the law, both State and Federal, permit different standards to be applied relative to thermal discharge as relates to rivers and streams with ocean? Apparently it does.

Mr. GIBSON. Yes, it does in California, and I think that is true elsewhere as well.

Mr. PACKARD. So the law does give enough flexibility in that area because ocean dumping obviously would have a significantly different kind of environmental effect than would that river or stream.

Mr. GIBSON. That is true. That is right. I think that is really the core of Mr. Smith's testimony, why compliance with State water quality standards should allow someone to get a 316(a) variance. Because the State water quality standards have been set very tight-

ly, certainly in California, which I can speak of. I am sure it is true of other States and are subject to EPA approval.

EPA has been quite vigilant in being sure that the State water quality standards are set at a level which are very protective of the water body. Indeed in some cases they are set so stringently that my company is seeking 316(a) variances to not have to comply to California State thermal water quality standards because we contend and we think our biological demonstration shows that the receiving waters are completely protected even though we do not quite meet the State water thermal standards.

Mr. PACKARD. Have there been studies that have indicated at any time that environmental considerations and plant and animal life have been enhanced because of thermal changes as a result of discharge?

Mr. GIBSON. I think that—the biological activity is increased from heat, so that we have some marine, mariculture developments at our outfalls, oysters, other shellfish, things of that nature where they are being grown commercially because the heated water is more efficient for growth of marine life. Also, the fishing certainly is very, very good at our outfalls because at almost every one of our powerplant discharges we find great congregations of fishermen who come in and catch fish there. So they tend to be very rich and productive marine areas.

Mr. JERREL SMITH. May I comment further on that, sir?

Mr. PACKARD. Certainly.

Mr. JERREL SMITH. I think what Mr. Gibson has said is true also on the inland water bodies. We have very good fishing areas along the discharge from powerplants in the late fall or wintertime. Fish tend to congregate and indeed would grow more rapidly in the warmer areas of the heated discharge in the wintertime and will avoid those areas when the temperatures rise in the summertime. This is an area of question as to why I raised the point on exactly the same indigenous populations. But the heated discharges are a very popular fishing spot.

Mr. PACKARD. Has there been any effort in those studies, or have the studies gone far enough to determine or become specific enough to be able to make determinations as to cost values of such benefits in terms of maybe relating that to a cost-benefit ratio as plants and projects are being considered?

Mr. JERREL SMITH. So far as I know, the answer to that is no.

Mr. PACKARD. In other words, those are just a forgotten benefit if they are benefits?

Mr. JERREL SMITH. Yes, sir, so far as I know.

Mr. EDGAR. Mr. Chairman.

Mr. MCNULTY. Mr. Edgar.

Mr. EDGAR. I just wanted to get back to the question you were raising. On page 14 of your statement you talk about those indigenous populations of aquatic life and you go on to talk about, and you say rather a satisfactory demonstration should be based on maintenance of a balanced population. Some species will avoid, others will be attracted to the warmer waters. These subtle nonpersistent species shifts are not the sort of significant adverse environmental impact that should automatically require expenditure of so-

ciety's limited resources on expensive multimillion dollar cooling towers.

Can you tell us what evidence that these effects ought to be ignored? Do you have some specific data in your studies that—you have mentioned the positive impacts to fish and fishermen and oysters and the good things that you can create at the outfalls of the water. Are there some negative impacts that you have discovered in your studies?

Mr. JERREL SMITH. The shifting of the species will occur in a very limited zone around the thermal discharge area. Which is usually a very small area in the water body. And in some periods you will find a perhaps lower population of fish right in that particular area. Perhaps in the summertime. Maybe because of turbulence of that outfall more than even the temperature of that outfall. Fish just tend to avoid these zones.

There are certain zones, for example, in the Mississippi River you just don't find fish at all whether there is a discharge or not, because the fish seek certain areas of the river. You don't find fish in the center of the Mississippi River. Indeed one of our outfalls on one of the newer plants was placed in the center of the river simply to avoid those more active biological areas. There are no fish out there. We find that either with or without thermal discharge.

Mr. EDGAR. Thank you.

Mr. MCNULTY. Mr. Smith, with respect to your testimony about powerplants, are you talking about coal-fired steam plants?

Mr. JERREL SMITH. This could be either coal or nuclear on a thermal discharge.

Mr. MCNULTY. I think that in my modest experience in the arid West I didn't know there were coal-fired steam plants that didn't have cooling towers.

Mr. JERREL SMITH. In the West that probably is true. You may not have enough water for onstream cooling and the only alternative in that event is either natural draft or forced draft cooling towers. That is correct.

Mr. PACKARD. Would the chairman yield, please?

Mr. MCNULTY. Indeed.

Mr. PACKARD. Along the coastal areas, coal certainly is an alternative that could be used. Most of them are not using coal. But I don't think it is because of the requirements to mitigate thermal discharge in the ocean. The ocean temperatures, and apparently the ocean is becoming, coastal areas are becoming a rather preferred area for the siting of these because there is a great body of water that thermal discharge doesn't change the temperature of the ocean, off the coast of my city anyway, we have got a major plant there, probably more than two degrees.

That is certainly, has very little effect upon the environment. But it does have some improving effects upon the fishing. And that I am aware of. So I think that it depends a lot on the body of waters that you have in order to discharge your thermally changed water.

Mr. JERREL SMITH. Mr. Chairman, that is indeed true. You cannot take all the water from a river and run it through a powerplant, nor would we ever attempt to do such a thing. This whole

area of thermal discharge is one in which the States really need flexibility to judge how the use their resources. In the arid Midwest you are simply going to have to use cooling towers. On the coast you have a lot of water to use for cooling. On the Mississippi River we have a lot of water to use for cooling.

Mr. McNULTY. And you have got a lot and it is cheap, and where you are going to put it back there is a great deal there, too. So that is a great deal more efficient than pumping and cooling towers and blowing down and fans and all of that.

Mr. JERREL SMITH. It is much more efficient as I indicated. It also reduces the amount of fuel that you use if you are able to use onstream cooling, because the efficiency of that thermal cycle is improved.

Mr. McNULTY. Is the water, does it cool through an evaporative process or a conduction?

Mr. JERREL SMITH. You draw the water from the water body and run it through a large bank of tubes over which steam passes from your turbine. That drops the pressure within that chamber to something like 2 inches of mercury absolute. That allows you a larger pressure drop across your turbine, gives you a greater potential generation of electricity as this back pressure as we call it increases.

It does increase with the higher temperature. The efficiency of that thermal cycle then is further reduced and you simply have to put more fuel into your plant if you are going to generate the same number of kilowatts.

Mr. McNULTY. So the western arid plants which use evaporative cooling towers, and consequently of an enormous concentration in solids, that doesn't occur in the kind of situation that you are testifying about. The water that comes back into the river is the identical quality as the water which is extracted from the river.

Mr. JERREL SMITH. It comes in in identical quality with the exception of in some cases there are introductions of chlorine for biological fouling control and there are certainly limits placed on that. That discharge as well.

But on my plants, for instance, the water is drawn in and sent out without being touched, aside from the transfer of heat that goes into it.

Mr. McNULTY. The plume that is created by feeding back the warmer water, what are the furthest limits of some temperature differentiation in those limits in your experience?

Mr. JERREL SMITH. Well, a 1° temperature rise can go some distance downstream. A mile or two, perhaps. And it isn't going to cover the entire stream in my experience.

Mr. McNULTY. Would a 2-mile radius then of some measurable increase in temperature be the maximum in your experience?

Mr. JERREL SMITH. I don't believe that I could say that absolutely. I am only looking at one particular site on the Mississippi River. This would vary a great deal. Whether you are on a swift flowing river or whether you are on a larger impoundment such as one of the lakes on the Mississippi, the plumes will look differently. Some of the plumes also will lie more on the surface of the lake and you will measure only the temperature there, which is prob-

ably more desirable. Other plumes when we are in a fast-flowing stream we like to get high turbulence and fast mixing.

On one plant we installed on the Mississippi a center river discharge, that both avoids the bank and the biologically active areas. It gets very turbulent and fast mixing. So that when my fellows go out to try to measure the thermal plume they have a very difficult time holding the boat close enough to that 5° thermal plume to even find it.

Mr. McNULTY. Thank you very much, sir, Mr. Gibson.

Are there any questions? Members of the staff?

Mr. Gibson, Mr. Smith, we are grateful to you for your testimony here this morning. Thank you.

Mr. GIBSON. Thank you, Mr. Chairman.

Mr. McNULTY. From Arthur Young & Co. the next witness is Mr. Harvey Goldman.

Good morning and welcome, and we would be pleased to hear from you now.

Mr. Goldman, the full test of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY OF HARVEY GOLDMAN, PARTNER, ARTHUR YOUNG & CO., ON PRIVATIZATION OF WASTEWATER TREATMENT FACILITIES

I am honored to be here today to discuss Privatization, public/private partnerships to help meet the enormous need for wastewater treatment facilities facing communities across the nation. The United States Enviromental Protection Agency's 1982 Needs Survey documented $118 billion worth of needed facilities. Add to that the needs of communities which are not on state priority lists because their needs reflect desires of growth and economic development, which EPA does not fund, the total dollars necessary to meet the country's demand for wastewater treatment construction is even more staggering.

The EPA's Construction Grants program has provided many communities with the financial wherewithal to build treatment facilities. However, at the current authorization level of $2.4 billion, only a small dent will be made in the capital investment needed to meet our clean water goals and to support the growth and development so vital to our economic well being. I have seen in my research and work to date a very sincere expression of interest on the part of respectable private sector firms to undertake such investments and pursue the business opportunity of building, owning and participating in the operations of wastewater treatment facilties. I have also seen a strong desire on the part of certain state and local government units to pursue any legitimate alternatives to local funding to put these capital intensive facilities into service, and to ensure that they will be properly operated and maintained.

The privatization concept is not necessarily an alternative to the Construction Grants program, but at a minimum, it should be used to help supplement the grants program. Privatization is based on the sharing of benefits. When a private sector firm designs, finances, constructs, owns and operates a facility, the firm realizes a number of economic advantages. These are shared with the community in the form of lower user fees compared to those required if the facility were obtained through local funding sources.

The privatization concept for wastewater treatment facilities was developed by Arthur Young when the State of New Jersey was looking for ways to help meet its $2.4 billion wastewater treatment needs, given the expectation of federal grant monies to provide less than one-fifth of the total need. Having previously done quite a bit of environmental consulting work for the State's Department of Environmental Protection, we were asked to investigate sources of funding in addition to the grants program. Private sector involvement envolved as potential solution. Let me explain.

Three types of savings contribute to the private sector's ability to provide facilities at a lower cost. These are construction savings, operational efficiencies and tax benefits. Construction savings result from the private sector's ability to procure ma-

terials and proceed through the different project stages, such as design and construction, at a much faster rate than that at which municipal project proceed. Cases have been documented in Tennessee, Pennsylvania and Colorado where facilities have been put in service in a much shorter time and at a much lower cost compared to if federal funds had been used. From our work in this area, we have conservatively concluded that compared to a treatment facility built through the construction savings of approximately 20 percent of the project's cost.

Operational efficiencies are another source of savings for the private sector. It must be remembered that the private sector will take a businessman's approach to wastewater treatment. Therefore, service provision will be treated as a product to be sold and profited from Quality service at a lower cost will be sought through well-trained and experienced employees, and through economies of scale when a firm opeates more than one facility. I believe it important to note that the private sector recognizes the need to address the considerations of municipal employees, including how those employees can be incorporated into the work force when the private sector firm takes over operation of a municipal wastewater treatment system.

In addition to the private sector's ability to construct and operate plants more efficiently than the public sector, resulting user fees can be lowered further when the private sector uses tax benefits to lower the overall project cost. Changes to the tax law in 1981, which were carried over in 1982, allow equipment and machinery to be depreciated over 5 years and structures over 15 years. Along with accelerated depreciation, the private sector can take advantage of various types of tax credits and deductibility of interest payments if the project is financed with a combination of debt and equity. Typically debt financing would encompass the majority of the total project cost. Privatization provides especially attractive user fees when construction and operational efficiencies and tax benefits are combined with Industural Development Bonds (IDBs) to finance the facility.

Even with this combination of benefits, the economics of privatization for an identical facility can not compete with a 75 percent federal construction grant when resulting user fees are compared. However, in our privatization work to date, we have seen a privatization approach result in user fees that would be the equivalent to what would be charged if the community were to have received a 40 to 60 percent grant to construct the same facility. If the availability of IDBs was limited and the tax laws were to be changed, the potential benefits of privatization would be significantly reduced, perhaps putting clean water out of the range of economic viability for many communities in need.

As currently written in the law, it is permissible to use IDB's in conjunction with the full range of tax benefits described above. However, as we understand it, proposed legislation before the Senate Committee on Finance would limit the use of IDBs to resource recovery facilities. An underlying assumption used in the determination to impose limitations on the use of IDBs, is that the Federal Government is at a financial disadvantage in allowing transactions that provide both the advantages of IDB financing with accelerated depreciation tax benefits. I believe it is important to point out the following:

Our firm performed an analysis of a medium sized wastewater treatment project under the following scenario: assuming that without private investment the project will not proceed due to municipal debt limitations or the desire to "wait" until federal grants become available, what is the true impact to the federal government of a private investment in such a facility? This true impact considers not only the tax benefits generated, but also the taxes paid by the private sector.

The results of our analysis are interesting to say the least. When one considers the Investment Tax Credit and accelerated depreciation benefits, as well as the taxes paid by the private firm on annual revenues from the community, the taxes on income earned by construction workers involved in building the plant and the taxes paid by the general contractor and equipment and material suppliers, the U.S. Treasury does not necessarily lose on such a project. In fact, we believe that certain projects may actually produce a positive effect on the Treasury in terms of total tax benefits versus taxes paid over the life of the agreement.

It could be argued that construction workers and equipment suppliers could earn their money elsewhere and thus still pay taxes regardless of these projects. On the other hand, when in recent years has the construction and equipment industry been 100 percent utilized? It could also be argued that since most of the tax benefits accrue in the first five years of ownership/operation, the Treasury will still lose on a present value basis even if it breaks even over the long term. This is true on the surface but our analysis does not include the secondary benefits to the economy of increased employment in the construction, equipment and materials industries, or the economic development which will result from wastewater treatment services. It

also does not consider FICA payments. A third argument is that such projects would probably proceed without private investment. Due to the limited availability of federal funds and municipal debt limitations, we believe that private investment is essential to get projects moving. A community we are working with in New Jersey is a case in point; its current debt is only 25 percent of its total debt ceiling and yet proposed wastewater facilities would cost twice as much as the City's remaining debt capacity. This does not even consider the City's remaining needs for water, solid waste and other municipal improvement needs. Unfortunately, this City is by no means unique and many others are faced by much more difficult situations.

A final and important consideration is the realization that some communities will be fortunate enough to receive federal grants from the Treasury equal to 55 percent of eligible project costs. For the thousands of communities who cannot receive this direct federal aid, it would seem that the indirect aid of the federal tax laws should still be made available not only for wastewater treatment but also for water and solid waste facilities. The fact that such aid is not necessarily a drain on the Treasury and, in fact, may result in a positive or breakeven situation, is more reason to help America's communities.

There are those who express the concern that the use of tax benefits to enhance the economics of privatization is a misguided policy. I suggest that every businessman typically looks at investment opportunities from a perspective that includes the tax impact. If investors are looking solely for tax benefits, they will find them somewhere. What better use of tax incentives than to supplement or enhance the economics of private investments to rebuild our infrastructure.

Privatization is a means by which the Federal government can draw upon the private sector to achieve goals for the common good. The Federal Government has used similar approaches in the past, The same sort of tax incentives that are being discussed here with regard to wastewater treatment facilities were used to spur the development of hydroelectric facilities some 20 or 25 yeas ago. And, they are being used currently to foster the development of the resource recovery industry. There are a number of reasons why the Federal government should consider retaining both the use of IDBs and the Federal tax incentives for the privatization of wastewater treatment facilities. First and foremost, privatization can help meet the enormous capital needs we now face. In addition, private sector ownership and operation of wastewater treatment facilities, if properly controlled, will provide additional benefits.

It is a well known fact that private sector compliance with the requirements of the Clean Water Act has well surpassed that of municipalities. Another accomplishment of the private sector's in the field of wastewater treatment is in regard to the private sector's in the ability to operate and maintain treatment plants. While there are municipalities that properly operate and maintain their facilities, in many cases communities are struggling in their efforts to run the expensive and complex plants that were paid for by Federal grants. The municipal compliance rate on an overall basis is extremely disappointing. One major problem facing many municipalities is their inability to attract and retain the qualified staff necessary to operate these facilities.

A number of well known and highly respected governmental and industry groups have recognized the important role that the private sector can play in meeting our clean water goals. Almost a year ago the National Water Symposium was sponsored by 13 key groups and associations. These groups were as follows:

American Consulting Engineers Council;
American Public Works Association;
American Society of Civil Engineers;
National Society of Professional Engineers;
Water Pollution Control Federation;
Council of State Governments;
International City Management Association;
Municipal Finance Officers Association;
National Association of Counties;
National Conference of State Legislatures;
National Governors' Association;
National League of Cities; and
U.S. Conference of Mayors.

The executive summary of the proceeding contains the group's collective recommendations, Specifically relating to privatization they recommend that:

"In order to control costs, public utilities should consider utilizing the private sector to provide operation and maintenance services."

"Federal and state laws, where necessary, should be revised to:

"Provide for the creation of profit and non-profit organizations or corporations for the purpose of pooling public and private funds to finance water infrastructure.

"Authorize the exploration of use of the private sector through tax benefits, tax credit transfers, and leasebacks."

Interest in privatization is very wide-spread, Particular interest has been expressed by a White House group, which was organized to study the potential role for the private sector in lowering federal spending. Commonly referred to as "The Grace Commission," the group's full title is the President's Private Sector Survey on Cost Control [PPSSCC]. Arthur Young was asked to prepare a report on wastewater treatment privatization. A recommendation from the PPSSCC report read, "Private construction and ownership of wastewater treatment plants is a viable way to reduce state and local dependence on Environmental Protection Agency Construction Grants."

Many states are looking toward privatization to meet their wastewater treatment needs. To date Arthur Young has worked with over 25 states in explaining, discussing and analyzing the potential of privatization for their particular infrastructure needs. State support of the concept has been overwhelming. Even Governor Kean of New Jersey, in formulating his Infrastructure Bank, points to the State's desire to promote the privatization concept for sewage treatment facilities as a way to reduce the demand for limited public funds. Recently, a large, western city was interested in determining whether privatization could meet their wastewater treatment needs. The Governor of the State decided to show his support of the concept by providing state funds for part of the study. We have also worked directly with other governors and their cabinets. I understand that the National Governors' Association has taken a collective stand opposing the proposed limitations on the use of IDBs.

Many will agree that privatization is an economically viable way to finance and provide the delivery of efficient and cost-effective wastewater treatment services. However, it should be mentioned that determining the economic viability is just one part of a complete privatization feasibility analysis. Attention must be given to determining that privatization is approached in an orderly fashion, and that the interests of the community, and of the public sector in general, are well protected. The need for an oversight program in any privatization arrangement can not be overemphasized.

In summary, privatization is being looked to by many as an alternative means by which to obtain needed wastewater treatment facilities. Federal grants may be the way for some, but the amount of available grants can not meet the immense need which exists. What better way to provide funds for the nation's infrastructure, than through drawing upon the private sector to pursue the business opportunity and the immense need at hand. The private sector will not only get needed plants built, but in addition will create jobs, foster construction and equipment sales and generate tax revenue. Privately owned plants will pay real estate taxes to the local community and sales and income taxes. I respectfully urge the Committee to further consider the merits of the privatization approach, and I would be pleased to assist you, if I may be of further aide. Thank you.

Mr. McNULTY. Please proceed.

TESTIMONY OF HARVEY GOLDMAN, ARTHUR YOUNG & CO.

Mr. GOLDMAN. Thank you, Mr. Chairman. I am honored to be here today to chat with you. I have prepared a formal written testimony that you have placed in the record. So, in the interest of time, and perhaps also in the interest of getting the key concepts across, I would really like to paraphrase the nuts and bolts of this commentary for you.

Mr. McNULTY. Please do.

Mr. GOLDMAN. At Arthur Young among my responsibilities I head up our consulting practice to the water industry and waste-water industry. Our services mainly focus on providing financial and management advice to water and waste-water facilities. What I would like to chat with you about today is some of our recent work in the financing of waste-water treatment facilities, as the financing problem of $118 billion worth of needs certainly is a significant problem that the subcommittee is confronted with.

We had the privilege approximately 2 years ago of working with the State of New Jersey in a formal project to help them address how they could meet the spread of approximately $2 billion from that State's needs for facilities as indicated on its State priority list versus approximately $400 million that the State could count on through the grants program, or roughly a $2 billion shortfall. The results of our research which was done in conjunction with a number of key State agencies indicated that a concept which we called privatization, or private sector involvement in designing, constructing, owning, and participating in the operation of these facilities could really serve to help bridge the funding gap that faces New Jersey as well as other States in this country.

I would like to take a few minutes explaining to you how we reached that conclusion, and then bring to your attention certain factors which you may or may not be aware of which could significantly influence the potential use of the privatization concept in future periods. What we saw in our investigation is that when a private sector entity is involved designing, constructing, owning, and participating in the operation of these facilities, significant economic benefits will be achieved compared to a project undertaken either with grant funds or totally with local funds.

For example, significant construction savings will result when a community does not have to follow Federal and State procurement laws that are necessarily involved when Federal and State money are involved in funding the facility. The written test I submitted to you indicates some cases we researched in States such as Tennessee, Pennsylvania, and Colorado, where in the absence of Federal and State funding needed facilities were put in place in 1 to 2 years, compared to the typical time period of 4 to 8 years that it takes to get a federally funded facility put into service.

By saving time and by saving compliance with many of the so-called bureaucratic procurement regulations, significant cost savings resulted. Arthur Young is a very conservative firm by nature. We feel very confident when we make a statement that at a minimum there will be at least a 20 percent cost savings in a facility constructed without the aid of Federal dollars compared to one built through the grants program others with significant relevant expertise have confirmed to me that a 20-percent savings in the cost of a treatment facility is a safe statement.

Our research indicated cases where 50 and 60 percent of the estimated construction cost through the grants program was saved. This involved cases where a community bypassed grant funding and also bypassed conventional EPA-approved technology. Another key benefit we saw where the private sector is involved in an ownership role is the tax benefits which will result. These stem primarily from the 1981 tax laws referred to as the Economic Recovery Tax Act of 1981. Those tax laws were deliberately put in place as we understand it to encourage private sector investment in this country.

What we saw when applying these tax laws to waste-water treatment facilities is that for tax purposes roughly 80 to 90 percent of the investment in a waste water treatment system qualifies for 5-year accelerated depreciation. The bulk of the remaining portion qualifies for 15-year depreciation.

In addition to the opportunity to utilize the benefits of accelerated depreciation, if the private sector is legitimately involved in participating in the operation of these facilities, also an investment tax credit will accrue to the benefit of the owner, the investment tax credit being 10 percent of the eligible cost of the facility.

In addition to the investment tax credit and accelerated depreciation, the owner can deduct the interest expense and under present law it is possible to use industrial development bonds for the financing of these facilities, even lowering the interest cost by use of such tax exempt financing vehicle.

We have also seen from our research those situations where private groups are operating publicly owned facilities on a contract basis. There can be significant savings in operating costs of the facilities. The potential operating savings can be combined with the reduced construction costs and the tax benefits of private sector involvement. There are many extremely well run publicly owned, publicly operated treatment facilities in this country. However, many communities, especially the small communities, have great difficulty attracting and retaining the key qualified staff necessary to operate these relatively sophisticated facilities.

The private sector, on the other hand, especially if private groups are able to experience economies of scale by operating multiple facilities, unlike communities which for the most part would only operate single facilities, can pass on significant operating savings. Such savings would come from the ability to centralize administration, centralize key maintenance staff, bulk order chemicals and key supplies, and so forth.

Economies of scale. What does all this mean when you try to put together construction savings, tax benefits, finance, with industrial development bonds and potential operating savings? It means that we may well have a supplement to the grant program which on a very cost effective basis can put clean water within the economic reach of many communities in this country.

The privatization concept cannot economically compete with a grant program which funds at 75 percent levels. But it can economically compete with grant funding levels at the 55-percent level.

What we have seen in approximately two dozen feasibility studies that our firm has had the privilege of conducting around this country, is that the economics of privatization will generally range from a grant equivalency of about 40 percent on the low end to 60 percent on the high end depending upon site specific considerations.

So, as you can see when these factors are appropriately bundled to those communities that aren't fortunate enough to receive a 55-percent grant, there is another alternative which, if allowed to stay in place, can present them with the economics of a grant without many of the delays and much of the redtape that the grant program brings.

Now, there are certain actions which have been taken or have been contemplated to be taken by groups such as the Senate Committee on Finance to limit the use of industrial development bonds and also to consider limiting the availability of 5-year depreciation

for facilities owned by the private sector that are providing services, legitimate services to the public sector.

My feeling is that those benefits need to be carefully thought through because clearly, while there are and have been some abuses in the tax laws, and while there is a pressing concern to balance or to minimize the budget deficit in this country, there are some specific unique characteristics about utilizing these benefits for wastewater treatment plants that should be brought to your attention.

I should also point out that in the proposed changes in the laws that the Senate Finance Committee is addressing they have preserved full utilization of existing law for resource recovery facilities.

The case I would like to build is that wastewater treatment facilities should deserve equal treatment to the resource recovery.

Let me explain why.

Many people believe that utilizing these tax benefits is an inappropriate use of our tax policy because the Federal Treasury will be robbed.

I don't think that is the case in wastewater treatment. Even under a privatization approach, it will take in most cases approximately 2 years to put a wastewater treatment system in place for an average size community.

During that 2-year period, before any of the tax benefits can be claimed, there will be taxes paid by the engineering group that does the design, by the construction firm that does the construction, by the equipment manufacturers who sell the equipment.

There will be taxes paid on the labor component of these facilities which is roughly one-third of the cost. Our firm just completed an internal analysis to try to take a hard look at, given the tax benefits that go hand in hand with making privatization work, what about the tax payments that will result from letting the private sector put these facilities into service?

Not only will there be the tax payments which I just described, but also one must consider the fact that these systems that come into service that are privately owned will be paying income taxes, property taxes, real estate taxes to local communities and so forth. What we have concluded is that in most transactions the Government comes out ahead. I think this has to be emphasized to those that are looking to limit the use of these tax benefits.

For those of us who are concerned with the financing of clean water in this country, I think we have a responsibility to speak up and to take what action we can to preserve the benefits which are already in the law and which have already been designated for preservation with resource recovery to also have them preserved for what could be an emerging industry of private sector involvement in wastewater treatment.

Arthur Young is not the only group that has been looking to the potential benefits of privatization to help solve in a supplemental way the financing dilemma for clean water.

Over the last few months we have seen groups such as the National Water Symposium, which was convened about this time last year in Washington to address new directions in managing water programs in this country. The sponsoring groups of that sympo-

sium included the key engineering councils, Public Works Association, Water Pollution Control Association, Council of State Government, City Managers, Finance Officers, National Association of Counties, the National Conference of State Legislatures, the National Governors Association, the National League of Cities, and the U.S. Conference of Mayors and so forth.

Among the conclusions from that group's 3 days of meetings was the fact that the tax laws should be utilized to involve the private sector in getting these facilities put into service.

We also had the privilege of being involved with a group referred to as the President's Private Sector for Cost Control in Government, commonly referred to as the Grace Commission. We provided them with much of our analysis on the privatization concept. I quote for you one of the conclusions from that group.

> Private construction and ownership of wastewater treatment plants is a viable way to reduce state and local dependence on Environmental Protection Agency construction grants.

As I said, we are working in more than two dozen States, in most cases with Governors, with their cabinets, with the environmental agencies, and with pilot communities interested in going forward to become the first communities in those States to demonstrate that public/private partnerships can be formed to put necessary facilities into service. It is also important to note that an awful lot of care is being stressed to set up the appropriate checks and balances to protect the public sector's interest in these transactions.

I hope that my comments here today have brought this privatization alternative to your attention, if you were not already aware of it, and hopefully it may inspire whatever action you believe is appropriate to help protect the benefits under existing law so that these concepts can go forward and help meet our Nation's clean water goals.

Thank you for your attention.

Mr. McNulty. Thank you, Mr. Goldman.

Mr. Stangeland.

Mr. Stangeland. Thank you, Mr. Chairman.

Mr. Goldman, first off, could you provide for us or document for us specific instances for the record, not today, where there has been a 20-percent cost savings by private construction of a wastewater treatment plant?

Mr. Goldman. Certainly.

[The information received from Mr. Goldman follows:]

Supplemental Information Provided by Mr. Goldman

A well publicized situation arose in Carlisle, Pennsylvania. As reported, in 1982 the community "washed its hands of EPA to clean up waste and initiated a totally locally funded project. The engineer involved is quoted as saying that compliance with the federal regulations add "15 to 20 percent to the cost." What the town, or rather the suburban Carlisle Authority actually accomplished was as reported "to build a bigger plant than anything EPS would have approved" and they accomplished it for "about the same amount of money as its 25 percent local share of a federally funded project might have been." Carlisle's plant operating cost is said to be about half what it would cost to operate a conventional EPA plant.

Mr. Stangeland. As you said, even instances of 50 to 60 percent savings specifically.

Mr. GOLDMAN. Yes, sir.

Mr. STANGELAND. A number of suggestions have been made that more water quality protection could be provided nationwide if the current program, construction grants program, were to be converted to a loan program, particularly for plants not yet in the pipeline.

What is your reaction to that proposal, and would achieving our national clean water goals be advanced or retired by such a program reorientation?

Mr. GOLDMAN. I think that a number of new approaches are necessary to help solve the funding dilemma. Having had the privilege of working with the State of New Jersey, I am somewhat familiar with the infrastructure bank concept that has been conceived for that State as well as the infrastructure bank concept implemented in the State of Utah through our work with Governor Matheson.

In both of those banks, the concepts of low-interest loans are included. Also in both of those banks the concept of privatization to go hand in hand as a supplemental tool is included.

It may well be that there could be some facilities, some communities that would not be attractive for private investment as well as not being eligible for grant funding.

In cases like that loan programs could be very important. It also could be the case that loan programs combined with private investment could be, could go hand in hand and that loan programs combined with grants can go hand in hand.

I am delighted that a loan concept has also surfaced as an additional tool for us to consider in the financing of these facilities.

Mr. STANGELAND. Thank you.

You make the point that using accelerated depreciation, the different tax laws to encourage privatization or private construction really doesn't cost all that much to the Government because, while your engineers are working, they are paying taxes, and the construction firm is working and it is paying taxes, and on and on and on.

But that same engineering firm builds the plant under the construction grants program, so really you are not adding anything additional. You have got the same revenue coming into the Government whether it is privatization with tax advantages or whether it is under construction grants program. Isn't that correct?

Mr. GOLDMAN. Well, assuming that that plant would be built with grant funds, you are absolutely correct, but looking at the base of approximately 5,000 communities in this country that need facilities, and looking at $2.4 billion versus $118 billion of need, my point is that facilities would move forward which are stalled for lack of funding right now if the privatization concept was to take hold and to prove itself.

In addition, it is important to recognize that I guess a few years back, when the grant program was at, say, twice the $2.4 billion level, there were approximately 250,000 private sector employees involved in designing and constructing facilities. That number has been slashed.

The number of construction firms that have gone out of business in the last year is staggering.

The number of engineering firms experiencing layoffs is staggering. If you believe that the plant will be built through the grant fund, then you are absolutely correct.

Mr. STANGELAND. Very good. Thank you.

Mr. McNULTY. Thank you.

Mr. Edgar.

Mr. EDGAR. Thank you very much. Mr. Goldman, how many successful plants are now operating that are private sector plants?

Mr. GOLDMAN. Not very many. This is a relatively new concept.

Mr. EDGAR. Do you know of any?

Mr. GOLDMAN. Yes. There are a number of utility type operations that are owned by private investors that have been providing wastewater treatment services in this country for years.

For example, Atlantic City, N.J., is serviced by the Atlantic City Sewage Co., a privately owned entity. There are also a few others.

Mr. EDGAR. Are they presently, let's say Atlantic City, 20 percent cheaper in their construction and planning than would be a publicly owned facility?

Mr. GOLDMAN. I don't know that.

Mr. EDGAR. What I am trying to get at is the fact that there are so few, isn't what you are suggesting to some degree theoretical in the sense that you are suggesting that tax incentives are a more efficient way to build treatment plants than other forms, and that the private sector really could get into this business in a big way and we would, rather than having a few, we would have lots of investor-owned, privately owned municipal wastewater treatment plants?

Mr. GOLDMAN. Yes; from our research we have seen that there is no shortage of qualified private sector firms that would be interested in moving forward if the concept were to catch hold.

Also, in doing our research about the concept we tried to look back to see what parallels might there be in our country's history where tax incentives and other incentives were utilized to spur a need.

We looked at the hydroelectric industry where 20 to 25 years ago, as a way of fostering the birth of this industry, specific tax advantages and so forth were granted.

Mr. EDGAR. I think Mr. Stangeland was trying to get at this. With a $200 billion deficit, if we give tax incentives as the answer to this multibillion dollar problem, that is also an investment we are making. There is cost to that tax incentive. It is just not free money.

Mr. GOLDMAN. That is correct. Perhaps I wasn't clear enough in making my earlier points. That is that because of the fact that there is a 2-year construction period, significant tax revenue will come into the Treasury before any of the tax benefits are available to be utilized, because the plant has to be up and operational before you can claim depreciation.

That depreciation even under the most accelerated basis comes in over a 5-year period versus the other revenues coming in in the initial years as the plant is being built.

Mr. EDGAR. What would keep you from having a private investor-owned waste water treatment center cut corners in order to have more profitability back to their investors?

Mr. GOLDMAN. That is a very legitimate concern. We address that in all of our consulting work by working with the community to outline an oversight program that would be essential to protect the community's interest.

For example, by requiring a performance bond. By having the comunity's consulting engineering firm or another firm of its choice do independent operational reviews of that facility to be sure it is being properly operated and maintained. By specifying in advance and including in the contract the performance standards, maintenance levels, inventory levels, and so forth that have to be maintained, and, moreover, by having the private group that is operating the plant face the penalties of noncompliance if clean water standards are violated.

It would be a whole set of factors that would come together to address issues like you just raised.

Mr. EDGAR. What would you do if you had a privately owned plant, investor owned, and you found they were violating Federal standards and you said, naughty naughty. You are violating these standards. You are going to be fined, and they came back and said, We are going to file chapter 11.

We are going to go belly up. What recourse would the community have to come in, make the corrections, and keep that facility operating?

Mr. GOLDMAN. I don't have the appropriate legal background to properly address that question, but I would like to answer it as follows: That any community contemplating going forward in an approach like this has to be armed with a fine set of professional advisers, and questions have to be asked from various perspectives.

What are the worst things that could happen to us in this transaction? How will we be protected? By approaching it from a mode of identifying the risks and steps to prevent or mitigate the risks is the way to go forward.

Mr. EDGAR. Aren't you really saying that what you want is to be able to build with private sector investment, but with public dollars loaned or granted facilities that would not have to comply with public Federal laws such as the Davis-Bacon Act and other mandated provisions?

Isn't that really where you are getting your savings besides your accelerated construction?

Mr. GOLDMAN. Well, I am not saying that we shouldn't comply with these laws. I am saying that if these facilities were built through a private mode, there would be local preference that would determine what procurement standards or policies would be complied with.

Yes, it would take the Federal Government out of dictating this if they weren't funding.

Mr. EDGAR. So you would get the Federal Government off our backs and out of our pocketbooks——

Mr. GOLDMAN. But still setting standards, performance standards would have to be met and still granting the permits.

Mr. EDGAR. But even if you had a loan program that was Federal dollars, we at the Federal level would have some responsibility on how in fact those Federal dollars would be expended.

Mr. GOLDMAN. That is correct.

Mr. EDGAR. And Davis-Bacon and some of the other prevailing provisions would still apply.

Mr. GOLDMAN. Yes, but, as I understand it, again I don't have an engineering background either, as I understand it a major reason why these projects take so long and cost so much money is the public bidding laws, the various reviews and interfaces with the delegated State agencies or regional offices of EPA reviewing and approving steps throughout the process and what some engineers might refer to as deliverables out of the grants program which aren't necessarily directly related to the treatment facility at hand, but are interim actions, or interim reports which have to be prepared, and that if you could eliminate some of those activities and save time, time is money.

Mr. MCNULTY. The gentleman's time has expired. Mr. Smith.

Mr. ROBERT SMITH. I think it is a fascinating discussion and an interesting thought that you have.

I am trying to determine in my mind how it would work. Help me, if you will.

I am assuming that you would go to a community, suggest to them, after outlining the plan, a cost per month for the improvement, and that would be the determination by the city council as to whether or not to go ahead with privatization or how would you go to a community, and on what basis would you go, outlining the cost ultimately to the consumer, so they can make a decision whether to provide for a bond issue, for their waste water treatment, or whether merely to hire a private firm to do it and then, of course, pass on the cost.

Mr. GOLDMAN. Let me explain how our firm has been involved in serving as consultants and let me cite a specific case which there is public information about, the city of Bayonne, N.J.

Through our work consulting with the State of New Jersey, Bayonne was designated formally as a pilot community to go forward with this approach. A consultant team for our firm worked with the city in identifying all of the funding alternatives that were available to them. Local funding, the chance of getting a grant, the chance of getting a loan through the infrastructure bank if that materialized or privatization.

Based on a very objective analysis, it was determined that the economics of privatization was the best scenario for the community to follow if it could see itself that a qualified private group would come and work with the community.

On the basis of the analysis, the community has since advertised requesting qualifications from private sector groups interested in designing, constructing, owning, and operating facilities to serve that community. That advertisement took place about 3, 4 weeks ago.

The community will be receiving statements of qualifications from interested groups within the next 2 weeks, and then the community will take appropriate steps to determine which of those groups that submitted qualifications it wants to receive formal proposals from.

And the community will lay out very carefully what it expects to get out of the transaction in terms of time period, quality of deliv-

ery of service and expected range of cost because they had the initial study done up front estimating the costs.

By arming themselves with consultants who knew tax benefits, and with our consulting engineers who pointed to the construction savings that would result if this was built privately and so forth, the community, before it enters into discussions, has a reasonable idea as to where the range of resultant user fees should be.

Mr. ROBERT SMITH. One thing you didn't mention that I can see is a direct benefit would be to a community that obviously couldn't pass a bond issue. This is an alternative method of financing.

Mr. GOLDMAN. That is exactly the case in Bayonne because New Jersey, you may be aware, imposes a cap on the outstanding indebtedness a community can have at any point in time.

The cost of Bayonne's facility is beyond their ability to pay for it themselves under State law.

Mr. ROBERT SMITH. Thank you.

Mr. MCNULTY. Thank you.

Mr. Packard.

Mr. PACKARD. Mr. Chairman, I too am very intrigued by this alternative concept. Those of us who come from local government, in fact any government, recognize that increased cost in public facilities is attributable generally to long delays.

In our case, our waste-water treatment plants more than doubled simply because we couldn't get through the maze of government regulations, and at the same time come up with a funding process.

That is a story I think that is heard all across America and that is why we are lagging significantly behind in our facilities and infrastructure.

I was going to ask the gentleman from Pennsylvania to yield but felt it might be best just to address it to my time.

When the question was asked about would this tend to invite cutting of corners, and avoiding government regulations, I thought perhaps that could be turned to a benefit because there is some gold plating and there are some corners that perhaps could be cut in terms of meeting all the regulatory and funding processes.

But, and also the question as to whether or not government can build better than private sector, I am not convinced government builds better. I think we all know that they build more expensive, but not better necessarily.

But I am not denegrating the process that we now go through. It is accomplishing, much belatedly in many cases, our goals. But I think an alternative is certainly worthy of looking at.

Do you feel it would require changes in existing laws or regulations to allow the tax benefits for privatization of waste-water treatment construction in order to enhance or permit that to happen?

Mr. GOLDMAN. Let me address that on two levels. One at the Federal and one at the State level. At the Federal level I think what has to be done is retain existing laws as opposed to permit the changes discussed by the Senate Finance Committee to go through. Specifically preserving the ability to use industrial development bonds for waste-water treatment and assuring that in a legitimate service contract mode of transaction that the accelerated depreciation benefits which were already there can be utilized.

At the State level from our work around the country we have seen, there are generally two or three legal matters that have to be addressed.

One is enabling communities to enter into long-term contracts with the private sector to provide the service. Many States limit the number of years for contracts. In addition, in many States the procurement laws would have to be clarified as to exactly how a community can go about, do they advertise for service delivery, what parts of the service are considered professional procurements versus commodity type procurements and so forth?

In addition, the role of the public utility commission needs to be carefully designed to determine to what extent, if at all, the State PUC should be involved in rate regulation.

What we have seen in most situations is that PUC's apparently would be willing to step aside or grant a waiver as long as they can see through a clear set of contractual conditions that the public's interests are protected against rate increases which aren't justified.

Mr. PACKARD. Have you or anyone else done any national studies or surveys that would verify or substantiate your indications of a savings and, if so, if you have done them, or if they are being done, we would appreciate it I think if the committee could have access to that information, if you would provide it.

Mr. GOLDMAN. Yes; we will be glad to provide you with three or four examples that have been written up in the press that we drew upon as well as other cases.

[The information received from Mr. Goldman follows:]

SUPPLEMENTAL INFORMATION PROVIDED BY MR. GOLDMAN

The example in Carlisle, Pa., has already been cited in response to Mr. Stangeland's question. Another example is in Loudon, Tenn., where, it is reported, a 14 mgd plant was built in 13 months at a cost of $4.6 million. Built through the grants program, the plant probably would have cost double if not triple that amount and taken 4 to 7 years to complete. Other examples of significant savings exist, although the cases that have been publicized are limited.

Mr. PACKARD. Thank you. Assuming that your estimates are correct and your evaluation is correct, that there could be a savings with privatization, and assuming that they can be built cheaper than what Government processes now permit these to be built, can they operate after the construction is completed and they are still operated as a private concern, can they operate at a profit?

Mr. GOLDMAN. I believe they can. I am aware of at least a dozen firms in this country that offer contract operations and maintenance services for waste water treatment facilities. Naturally the more facilities that a company has under contract, the greater the chance to use economies of scale.

But we have seen cases where the private sector has moved in to provide contract O&M in facilities that were out of compliance with discharge standards, gotten them into compliance, and has certainly not raised the previous cost.

So I assume they are making a satisfactory profit level within the previous cost.

Mr. PACKARD. I assume that that implies that these private companies are meeting all the requirements or regulations of the State PUC or other regulatory agencies, rate regulations?

Mr. GOLDMAN. I am sure that there may be some exceptions that I am not aware of, but to the extent of my knowledge, yes.

Mr. MCNULTY. The gentleman's time has expired.

The gentleman from Minnesota.

Mr. STANGELAND. Mr. Chairman, in the interest of time, I ask unanimous consent that all members be allowed to submit questions in writing to Mr. Goldman for his written response to the record.

Further, I ask unanimous consent that all testimony this morning be entered into the record in its entirety for those who have paraphrased.

Mr. MCNULTY. Without objection, so ordered.

Mr. EDGAR. Mr. Chairman, could I just ask very quickly?

Mr. MCNULTY. Yes; Mr. Edgar.

Mr. EDGAR. If you could provide for the record an answer to this question: If Congress decided to preserve the 1981 tax incentives for private waste water treatment facilities, could you estimate the cost to the Treasury in terms of the immediate loss of revenues of that?

Suppose we pursue your direction? What kind of estimates do you have in terms of loss to the revenues, loss to the Treasury?

Mr. GOLDMAN. The immediate loss, I think, would be minimal. Again, because it takes a year to two to build these facilities.

Perhaps in cases where an existing facility that wasn't built with Federal dollars was sold——

Mr. EDGAR. I am talking about the tax incentives.

Mr. GOLDMAN. Yes, but again it is the point that you can't draw upon the tax incentives until after the facility is built and operational.

Mr. PACKARD. Would the gentleman yield for a moment on that question because I would like to piggyback onto that question and not take the time for the answer to come today, but I assume you are requesting that a written answer come.

I would like not only to see what the cost to the Government would be as requested by the gentleman from Pennsylvania, but also tie that with the benefits that would be accrued financially to the local entities, so that there would be a comparison.

Where there really is a cost/benefit ratio there, that is plus.

Mr. GOLDMAN. Fine.

[The information received from Mr. Goldman follows:]

SUPPLEMENTAL INFORMATION PROVIDED BY MR. GOLDMAN

We analyzed the tax tradeoffs on one project we had recently worked on in terms of a privatization feasibility study. It was approximately a $50 million treatment system which might have been eligible, if funds were available, for a combination of a federal and state grant funding of approximately $30 million.

Given our assumptions, that same project, if owned and operated by a qualifying private sector group, could have possibly provided the owners with approximately $51 million of tax benefits over the project life, from deductions for interest payments, depreciation and the investment tax credit. However, it was also estimated that, before the facility was put into service, taxes on labor and the profits from design, equipment sales, and construction would have exceeded $4 million and over the course of the project, total taxes paid by the business would have exceeded $69 million. On balance, therefore, the tax scenario on the potential privatization transaction was a positive inflow to the government of $18 million. Using the same assumptions, grant funding of the facility would have cost the taxpayers $30 million

in grant funds, less $4 million inflow of taxes due to profit on creating the facility, or a net outflow of $26 millon to the taxpayers. On that basis, privatization approaches should be preferable, from a treasury perspective, to grant programs.

Mr. McNULTY. Members of the audience, with respect to witnesses, members of the committee, we have yet to hear from OTA, National Water Resources Association, folks from the Port Authorities and Water and Wastewater Equipment Manufacturers Association, and American Society of Civil Engineers, five presentations.

Given the hour, and after consultation with Mr. Stangeland, it seems most appropriate that we recess at this time and we propose to do so, barring any better suggestion, until what time? One o'clock? At which time we would expect to begin with Mr. Barnard from the Office of Technology Assessment.

We are in recess. Thank you.

[Whereupon, at 12 noon, the subcommittee was recessed, to reconvene at 1 p.m., the same day.]

AFTERNOON SESSION

Mr. McNULTY. The hearing will reconvene.

This is the Water Resources Subcommittee of Public Works Committee. We are considering amendments to the Clean Water Act. When we recessed at noontime we agreed to be back at 1 o'clock. I apologize for the delay. We are ready now to proceed with Dr. William Barnard from the Office of Technology Assessment.

Good afternoon.

Mr. BARNARD. the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY OF WILLIAM D. BARNARD, OFFICE OF TECHNOLOGY ASSESSMENT

Mr. Chairman, my name is William D. Barnard. I am the project director of the Office of Technology Assessment's study of Approaches to Wetlands Use, which was undertaken at the request of the Senate Committee on Environment and Public Works in October 1981. Our final report, which is scheduled for completion in January 1984, deals broadly with wetlands and addresses topics such as wetland values, trends in their use, and state and federal wetland programs. The report does not focus exclusively on Section 404 of the Clean Water Act, which regulates the discharge of dredged or fill material. However, many of our findings relate directly to the 404 program and its implementation by the U.S. Army Corps of Engineers.

INTRODUCTION

I would like to begin by discussing three major findings concerning wetlands. First, Fish and Wildlife Service (FWS) data indicate that in the 20-year period prior to the full implementation of the 404 program, approximately 11,000,000 acres of vegetated wetlands were converted to other uses. Second, many Federal policies and programs have opposing effects on wetlands. Third, States generally have neither the capability nor the desire to assume responsibility for regulating wetlands use.

I will elaborate on these findings and discuss a different approach for managing wetlands that may overcome some of the problems that now hamper our efforts to effectively manage the use of wetlands.

TRENDS IN WETLAND USE

Between the mid-1950's and the mid-1970's about 10 percent of all vegetated wetlands in the lower 48 states were converted to other uses. This corresponds to a net loss of approximately 550,000 acres of wetlands/year. About 80 percent of actual wetland losses during this period involved drainage and clearing for agricultural purposes. Although recent trends in wetland use are not well documented, decreas-

ing rates of agricultural drainage suggest that the current national rate of wetland conversion may be half as much as those rates of the 1950's and 1960's. However, agricultural conversions are continuing at relatively high rates in some regions of the country.

THE EFFECTS OF FEDERAL POLICIES ON WETLANDS

Federal programs that affect wetlands often do so in opposing ways. Federal tax deductions and tax credits for all types of general development activities (regardless of their location) provide incentives for farmers to clear and drain wetlands. These incentives can indirectly reduce conversion costs for farmers by as much as 30 to 45 percent. Other forms of Federal assistance to farmers, such as price supports and target prices for commodities, have not had a significant effect on wetland conversions in recent years.

The Corps' 404 regulatory program provides the major avenue for Federal involvement in regulating some activities that occur in wetlands. Based on data from 1980 and 1981, the 404 program, in combination with State regulatory programs, reduced conversions nationwide by about 50,000 acres of wetlands per year. This represents about half of the acreage that would have been converted if projects were completed as originally designed. In coastal areas, wetland conversions were reduced by 70 to 85 percent. However, activities such as excavation, clearing, drainage, and flooding, which were responsible for the vast majority of past conversions, are not actively regulated by the Federal Government or States.

STATE WETLAND PROGRAMS

State policies and practices for managing wetland use vary significantly from State to State. Most coastal States (including those bordering on the Great Lakes) regulate the use of their coastal wetlands (only). Most inland States do not have specific wetland programs. While most coastal wetlands are reasonably well regulated, inland wetlands, which comprise 95 percent of the Nation's wetlands, are generally not regulated by most States. Although States can assume responsibility for administering a portion of the 404 program, most States generally have neither the capability nor the desire to assume sole responsibility for regulating wetlands use without assistance from the Federal Government; some States would be reluctant even with assistance. Most States with wetland programs believe that State and Federal regulatory programs complement on another.

TAILORING EXISTING POLICIES TO WETLANDS

To make the Corps' regulatory program manageable in scope and to realistically limit its burden on developers, all activities that occur outside of somewhat arbitrary boundaries are not required to obtain individual permits. For example, isolated wetlands less than 10 acres in size or wetlands above the headwaters of rivers are generally not regulated by the Corps on an individual basis. However, the natural values associated with wetlands vary widely and are not necessarily related to size. wetland type, or geographic location. Therefore, many high-value wetlands are not well regulated. Similarly, for those activities that are regulated, projects occurring on high-value wetlands are treated about the same as similar projects on low-value wetlands. An alternative approach could be considered.

This approach would involve "tailoring" or adjusting existing acquisition, leasing, or regulatory policies to different wetlands (prior to possible wetland conversion). This would involve three major steps. First, wetlands would be inventoried as part of the FWS's ongoing wetland inventory. Next, regional committees composed of Government officials, wetland scientists, developers, and the general public would group the wetlands in their respective region into 3 to 5 broad categories based on the relative natural value of the wetlands. Fianlly, after considering the value of conversion activities, existing Federal, State, or local policies, would be tailored to the different development activities in each wetland category.

In this way, a coordinated mix of different policies could be applied to different wetlands and development activities. For example, undergraded, highvalue wetlands (e.g., coastal wetlands) could be acquired, covered by easement, or stringently regulated. Other wetlands, depending on their natural values, could be individually regulated, covered by general permits, or left unregulated. Several optional policies might also be used for some wetlands. For example, if certain kinds of development activities were prohibited by regulators, the owner might be given the option to sell the wetland or an easement to the Federal or State government. Priority for tailor-

ing would be given to those areas of the country where both wetland values and development pressure are high.

Although the tailoring concept appears viable, some wetland scientists and many environmentalists have reservations about its implementation. They believe that wetlands should be uniformly regulated regardless of their relative value. Other concerns focus on the uncertainties about the administration of the tailoring process, the potential for controversy and for the use of political influence, and the possible high costs associated with implementing such a scheme.

Although the process of categorizing wetlands could be controversial, the tailoring approach does have advantages over existing approaches. High-value wetlands could be given a higher level of protection than they now have. Regulators, developers, and the public would be aware of the status of the wetlands in their particular areas prior to any proposals to convert them to other uses. Agency funding and personnel could be more effectively focused on the high/value wetlands in different regions of the country rather than on all wetlands in general. The time required for any required permit decisions might be reduced. Finally, decisions about wetland use would be more predictable and consistent.

There are about a dozen areas in the United States where wetlands have been inventoried and broadly categorized according to their relative natural values. In one case, the Anchorage (Alaska) Wetland Plan is being used by local authorities and the Corps to control the development of wetlands. OTA recognizes the concerns of environmental groups, but believes that procedures can be developed for implementing the tailoring process effectively. However, it would be desirable to first test any proposed procedures on a pilot scale prior to making a decision about the desirability of full-scale implementation.

If Congress were to adopt a tailoring approach, it would also be necessary to gather additional policy-related information on: (1) recent trends of wetlands use; (2) the significance of conversion for the environment; and (3) the effect of different policies and programs on wetlands use. To ensure that these activities are relevant both to the mission s of the involved Federal agencies as well as to the policymaking process in general, an intergrated and widely reviewed work plan could be developed by an interagency working group. This plan should include a description of all ongoing and new research activities, agency responsibilities and coordination procedures, funding requirements, and opportunities for congressional oversight. The development of such a plan, which could be accomplished over a 1- or 2-year period, would require a congressional mandate.

Mr. McNULTY. Please proceed.

TESTIMONY OF WILLIAM D. BARNARD, OFFICE OF TECHNOLOGY ASSESSMENT

Dr. BARNARD. Good afternoon, Mr. Chairman.

Mr. McNULTY. The floor is yours.

Dr. BARNARD. Thank you. My name is William D. Barnard. I am the project director of the Office of Technology Assessment's study of Approaches to Wetlands Use, which was undertaken at the request of the Senate Committee on Environment and Public Works in October 1981. Our final report, which is scheduled for completion in January 1984, deals broadly with wetlands and addresses topics such as wetland values, trends in their use, and State and Federal wetland programs. The report does not focus exclusively on section 404 of the Clean Water Act, which regulates the discharge of dredged or fill material. However, many of our findings relate directly to the 404 program and its implementation by the U.S. Army Corps of Engineers.

I would like to begin by discussing three major findings concerning wetlands. First, Fish and Wildlife Service data indicate that in the 20-year period prior to the full implementation of the 404 program, approximately 11 million acres of vegetated wetlands were converted to other uses. Second, many Federal policies and programs have opposing effects on wetlands. Third, States generally

have neither the capability nor the desire to assume responsibility for regulating wetlands use.

I will elaborate on these findings and discuss a different approach for managing wetlands that may overcome some of the problems that now hamper our efforts to effectively manage the use of wetlands.

I would like to first discuss trends in wetlands use. Between the mid-1950's and the mid-1970's about 10 percent of all vegetated wetlands in the lower 48 States were converted to other uses. This corresponds to a net loss of approximately 550,000 acres of wetlands/year. About 80 percent of actual wetland losses during this period involved drainage and clearing for agricultural purposes. Although recent trends in wetland use are not well documented, decreasing rates of agricultural drainage suggest that the current national rate of wetland conversion may be half as much as those rates of the 1950's and 1960's. However, agricultural conversions are continuing at relatively high rates in some regions of the country.

Federal programs that affect wetlands often do so in opposing ways. Federal tax deductions and tax credits for all types of general development activities (regardless of their location) provide incentives for farmers to clear and drain wetlands. These incentives can indirectly reduce conversion costs for farmers by as much as 30 to 45 percent. Other forms of Federal assistance to farmers, such as price supports and target prices for commodities, have not had a significant effect on wetland conversions in recent years.

The corps' 404 regulatory program provides the major avenue for Federal involvement in regulating some activities that occur in wetlands. Based on data from 1980 and 1981, the 404 program, in combination with State regulatory programs, reduced conversions nationwide by about 50,000 acres of wetlands per year. This represents about half of the acreage that would have been converted if projects were completed as originally designed. In coastal areas, wetland conversions were reduced by 70 to 85 percent. However, activities such as excavation, clearing, drainage, and flooding, which were responsible for the vast majority of past conversions, are not actively regulated by the Federal Government or States.

State policies and practices for managing wetland use vary significantly from State to State. Most coastal States—including those bordering on the Great Lakes—regulate the use of their coastal wetlands—only. Most inland States do not have specific wetland programs. While most coastal wetlands are reasonably well regulated, inland wetlands, which comprise 95 percent of the Nation's wetlands, are generally not regulated by most States.

Although States can assume responsibility for administering a portion of the 404 program, most States generally have neither the capability nor the desire to assume sole responsibility for regulating wetlands use without assistance from the Federal Government; some States would be reluctant even with assistance. Most States with wetland programs believe that State and Federal regulatory programs complement one another.

Now I would like to make a few comments about one particular approach that we have explored which has the potential for deal-

ing with a lot of problems associated with the 404 program, and other programs that affect wetlands use.

To make the corps' regulatory program manageable in scope and to realistically limit its burden on developers, all activities that occur outside of somewhat arbitrary boundaries are not required to obtain individual permits. For example, isolated wetlands less than 10 acres in size or wetlands above the headwaters of rivers are generally not regulated by the corps on an individual basis.

However, the natural values associated with wetlands vary widely and are not necessarily related to size, wetland type, or geographic location. Therefore, many high value wetlands are not well regulated. Similarly, for those activities that are regulated, projects occurring on high value wetlands are treated about the same as similar projects on low value wetlands. An alternative approach could be considered.

This approach would involve tailoring or adjusting existing acquisition, leasing, or regulatory policies to different wetlands—prior to possible wetland conversion. This would involve three major steps. First, wetlands would be inventoried as part of the FWS's ongoing wetland inventory. Next, regional committees composed of Government officials, wetland scientists, developers, and the general public would group the wetlands in their respective region into three to five broad categories based on the relative natural value of the wetlands. Finally, after considering the value of conversion activities, existing Federal, State, or local policies, would be tailored to the different development activities in each wetland category.

In this way, a coordinated mix of different policies could be applied to different wetlands and development activities. For example, undegraded, high value wetlands (for example, coastal wetlands) could be acquired, covered by easements, or stringently regulated. Other wetlands, depending on their natural values, could be individually regulated, covered by general permits, or left unregulated. Several optional policies might also be used for some wetlands. For example, if certain kinds of development activities were prohibited by regulators, the owner might be given the option to sell the wetland or an easement to the Federal or State government. Priority for tailoring would be given to those areas of the country where both wetland values and development pressures are high.

Although the tailoring concept appears viable, some wetland scientists and many environmentalists have reservations about its implementation. They believe that all wetlands should be uniformly regulated regardless of their relative value. Other concerns focus on the uncertainties about the administration of the tailoring process, the potential for controversy and for the use of political influence, and the possible high costs associated with implementing such a scheme.

Although the process of categorizing wetlands could be controversial, the tailoring approach does have advantages over existing approaches. High value wetlands could be given a higher level of protection than they now have. Regulators, developers, and the public would be aware of the status of the wetlands in their particular areas prior to any proposals to convert them to other uses. Agency

funding and personnel could be more effectively focused on the high value wetlands in different regions of the country rather than on all wetlands in general. The time required for any required permit decisions might be reduced. Finally, decisions about wetland use would be more predictable and consistent.

This concludes my comments. I would be willing to answer any questions that you might have.

Mr. McNULTY. Dr. Barnard, in a society that considers wetlands and swamps a positive social good, I wonder, is there a distinction between converting wetlands and reclaiming swamps.

Dr. BARNARD. No.

Mr. McNULTY. Those scientists you mentioned on the next to last page of your testimony who think all wetlands should be treated the same I assume would take a position that any reclaiming of the swamp is, per se, not in the national interest?

Dr. BARNARD. That is right.

Mr. McNULTY. That doesn't leave any blurred lines, does it?

Dr. BARNARD. Well, I think their view is that the values that are associated with wetlands outweigh the benefits that would accrue from conversion activities in most cases.

Mr. McNULTY. Like sanctuaries for mosquitoes that carry malaria and things like that? I withdraw the question.

Dr. BARNARD. Thank you.

Mr. McNULTY. Mr. Stangeland.

Mr. STANGELAND. Thank you. We are having a little discussion on understanding exactly what we have got before us. You state that between the mid-1950's and the mid-1970's, or about a 20-year period, about 10 percent of all wetlands were converted. The net loss was approximately 550,000 acres of wetlands a year.

Dr. BARNARD. That is right.

Mr. STANGELAND. Then in 1980 and 1981 under the 404 program, I interpret the loss to be 50,000 acres without the 404 program, or if the projects had been completed as originally designed without 404 it would have been 100,000 acres?

Dr. BARNARD. That is right.

Mr. STANGELAND. So our loss has dropped now, through conversions from an average of 550,000 acres for those years up to the mid-1970's to now 100,000 acres. Am I interpreting your figures correctly, or am I interpreting them incorrectly?

Dr. BARNARD. The 100,000 acres would be for those activities that the corps regulates. There are activities that occur on wetlands that are not regulated actively by the corps. The 404 program only covers the disposal of dredged or fill material. There are other activities that result in wetland conversions which are not regulated.

Mr. STANGELAND. OK. On page 3 you indicate most States are not desirous to assume responsibility for regulating wetland use without assistance from the Federal Government. Some States would be reluctant even with the assistance. Why is this so? Or why do you believe it is so?

Dr. BARNARD. Well, many States feel that the benefits associated with developing wetlands outweigh their natural benefits. In a lot of cases the States would rather have the Federal Government involved so that they can remain out of this controversial area.

Mr. STANGELAND. Buck passing, so to speak then?

Dr. BARNARD. So to speak, yes.

Mr. STANGELAND. To what extent do you believe there exists opportunities to reduce some unnecessary delays in reaching 404 permit decisions? What suggestions do you have in this connection?

Dr. BARNARD. There has been a lot of discussion about the impact of delays on development activities. I think that there are a number of things that the corps could do to improve the administration of the program. In a lot of cases, corps district procedures could be standardized. They could improve the coordination between State agencies that are involved in the 404 program. And I think there are other things they could do to improve the program that might not necessarily reduce permitting processing time, such as improving monitoring enforcement and establishing reporting requirements for general permits.

Many people think that the permit processing time is not too lengthy, whereas a lot of the industry folks feel that it is very time consuming.

Mr. STANGELAND. What do you think about it?

Dr. BARNARD. Well, I think that obviously there is time required for permit processing in any regulatory program. Permit processing time for the 404 program has decreased over the last few years, and especially over the last couple years with the administrative changes that have been made by the Corps. So processing times have decreased. And I think that there is some processing time that would be associated with any regulatory program, regardless of whether it controls the use of wetlands or something else.

Mr. STANGELAND. Mr. Chairman, I have some other questions, but I think they are questions that might better be answered in writing for the record.

Dr. BARNARD. Fine.

Mr. STANGELAND. Dr. Barnard might be able to take a look at them and think through some of them.

Dr. BARNARD. OK. Fine.

Mr. STANGELAND. They will have to do with exemptions to be granted certain types of wetland areas and what you think of that. Also the definition of navigable waters, it has been suggested that we make changes there. So I will submit those in writing, Mr. Chairman.

[The questions submitted by Representative Stangeland and responses received from Dr. Barnard follow:]

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Congress of the United States
OFFICE OF TECHNOLOGY ASSESSMENT
WASHINGTON, D.C. 20510

JOHN H. GIBBONS
DIRECTOR

February 6, 1984

The Honorable Arlan Stangeland
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Stangeland:

I appreciate this opportunity to respond to your questions in conjunction with the hearings held by the Subcommittee on Water Resources on November 2, 1983. Our responses follow each of your questions, which are restated below.

QUESTION 1. On page 2 of your written statement, you point out that the 404 program has reduced wetlands conversions nationwide by about 10 percent, representing approximately half of the acreage that would have been converted if projects had been completed as originally designed. You also note that in coastal areas, wetlands conversions were reduced by 70 to 85 percent. Would you conclude from these numbers, as I think could be warranted, that our current 404 program appears to be working quite well in terms of striking a necessary balance between environmental and developmental interests?

Answer. How well the 404 program works in terms of balancing environmental and developmental interests is open to debate. Wetlands are presently converted to other uses at an approximate rate of 300,000 acres per year. About 50,000 of these are converted to other uses by activities that are regulated under the 404 program. This represents about half the acreage that would have been converted if projects were completed as originally proposed on permit applications. Because most coastal wetlands are well protected by the 404 program and State wetland programs, wetland conversions in coastal areas are reduced by 70 to 85 percent. Developers feel that Federal involvement in regulating the use of wetlands through section 404 borders on land use control and imposes unfair burdens on development activities.

About 250,000 acres per year are being converted by agricultural activities involving clearing and drainage that are generally not regulated by either the Federal government or the States. Many environmentalists feel that the absence of any regulations on these activities allows significant and continuing rates of wetland conversion.

QUESTION 2. On page 3 of your written testimony, you indicate that most States do not desire to assume responsibility for regulating wetlands use without assistance from the Federal government and that some States would be reluctant even with assistance. Why do you believe this is the case?

Answer. Based on the responses of 48 States to an OTA questionnaire about wetlands, twelve States have evaluated or are evaluating the possibility of assuming responsibility for administering a portion of the 404 program. Four are administering pilot programs to gain practical experience prior to possible program assumption. However, over two thirds of the States do not have the capability or desire to take on this responsibility without additional resources from the Federal government. Even with additional resources some States would be reluctant due to a desire to promote development and an opposition to land use controls. Another possible reason for State reluctance may be the requirement for States to develop their programs in accordance with EPA regulations that they may see as being too stringent. In addition, the scope of the areas that States would be given jurisdiction over may be too restricted to generate State interest. Since regulating the use of wetlands is often controversial, many States see few advantages in getting involved in this Federal program.

QUESTION 3. To what extent do you believe there exist opportunities to reduce unnecessary delays in reaching 404 permit issuance decisions? What suggestions do you have in this connection?

Answer. Over the past three years the Army has focused a great deal of attention on decreasing the delays in issuing 404 permits. According to one source, in 1980, the average permit processing time was about 130 days. However, Army Corps of Engineers' data for the last quarter of FY 1983 indicate that average processing time has decreased to about 70 days. It may be possible to decrease processing time even more over the short-term by further encouraging applicants to take advantage of pre-application consultations with the Corps, by improving coordination between the Corps and other Federal agencies and State regulatory programs, and by increasing the number of Corps personnel that are assigned to the program.

Over the long-term, permit processing time could be reduced by developing an integrated approach to wetlands management. This would involve three steps. First, the Fish and Wildlife Service's ongoing inventory of wetlands would be continued or accelerated. Second, the wetlands in an inventoried area would be categorized according to their relative values. And third, the 404 permit processing procedures could be "tailored" or adjusted based on the relative value of different wetlands. In this way, agency funding and personnel attention could be focused on high-value wetlands in different regions of the country instead of all wetlands in general. Regulators, developers, and the public would be aware of the status of wetlands in their particular region prior to any proposals to convert them to other uses and could plan accordingly. Thus, in addition to reducing permit processing time for a permit application, decisions about the use of wetlands would be more predictable and consistent.

QUESTIONS 4 AND 5. It has been suggested to the Committee that wetlands exemptions under section 404 should be granted for the following types of wetland areas: (1) lands adjacent to streams that either flow or overflow as a result of runoff waters; (2) lands adjacent to isolated lakes, potholes,

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arroyos, intermittent streams and other waters that are not part of the tributary system to interstate waters or navigable waters; and (3) land areas containing wetlands-type vegetation as a result of irrigation practices. What recommendations do you have, either here or for the record, concerning this suggestion? It has also been suggested that the definition of navigable waters for purposes of section 404 should be narrowed to eliminate (4) artificial and/or seasonal wetlands. What comments would you have concerning this proposal?

Answer. If section 404 is intended to protect only the quality of the Nation's waters, then lands adjacent to isolated lakes, potholes, arroyos, intermittent streams and other waters that are not part of the interstate tributary system could be exempted, as could most wetland areas resulting from irrigation practices and artificial and/or seasonal wetlands. However, if section 404 is intended to protect other wetland values, such as food and habitat for wildlife, then none of the types of wetland areas described in questions 4 and 5 can be generically excluded without the risk of exempting some high value wetlands along with those of lesser value.

QUESTION 6. Approximately what percentage of the converted wetlands that you discuss would have required permit action under section 404? That is, which were lost because of deposition of dredged and fill material and which were lost for other reasons?

Answer. Between the mid-1950's and mid-1970's, wetlands were being converted to other uses at a rate of about 550,000 acres per year. About 80 percent of these coversions were for agricultural uses and generally not regulated by either 404 or State programs. In fact, normal farming activities are specifically exempted by section 404. The remaining 20 percent were converted by activities that involved the disposal of dredged or fill material and in all likelihood would have fallen within the jurisdiction of the Corps' 404 program had it existed during that time period.

Please let me know if you or your staff have any further questions about the use of wetlands in the United States or about the responses to these questions.

Sincerely,

William D. Barnard

William D. Barnard
Director, Wetlands Project

cc. Mr. Joseph A. Italiano
Public Works Committee Editor

Mr. McNULTY. Thank you. Dr. Barnard, thank you.

Dr. BARNARD. Thank you very much.

Mr. McNULTY. Thank you for submitting to a certain amount of mischievousness here this afternoon. We are grateful for your testimony. How long have you been at OTA?

Dr. BARNARD. Approximately 5 years, sir.

Mr. McNULTY. If you have suffered mischievousness at the hands of anyone else named McNulty, I owe you an apology.

Dr. BARNARD. OK, thank you.

Mr. McNULTY. Our next witnesses are from Texas, Carson H. Hoge, general manager, Brazos River Authority, Waco, Tex., and I. M. Rice, executive vice president of the Trinity Improvement Association from the home of the Dallas Cowboys and testifying in behalf of the National Water Resources Association.

Mr. Hoge, Mr. Rice, good afternoon and welcome.

The full text of yor prepared statements will apear in the record at this point.

[Statements referred to follow:]

STATEMENT OF BRAZOS RIVER AUTHORITY, IN SUPPORT OF AMENDMENT OF SECTION 404 OF THE FEDERAL WATER POLLUTION CONTROL ACT

The Brazos River Authority is an agency of the State of Texas created in 1929 and given statutory responsibility for conservation and development of the surface water resources of the Brazos River Basin in Texas, an area of about 42,000 square miles. Although it is a political subdivision of the State of Texas, the authority does not levy taxes and does not receive appropriations from the State, but is entirely self-supporting, utilizing revenues from its own operations to pay all of its costs.

In carrying out its statutory responsibilities, the Authority has financed, built and operates three major reservior projects of its own, and has contracted with the Federal government for use of the conservation storage space in nine Corps of Engineers reservoirs in the Brazos Basin. These reservoirs are operated as elements of a basin-wide water supply system to meet municipal, industrial and agricultural needs. This reservoir system has a total conservation storage capacity exceeding 2.1 million acre-feet, and a total long-term dependable water supply yield exceeding 600,000 acre-feet. Utilizing this system, the Authority supplies water from reservoir storage for municipal use to more than 60 cities, towns and water districts througout the Brazos Basin. The Authority also owns and operates more than 200 miles of canals through which it can supply up to 237,000 acre-feet of Brazos River water for municipal, industrial and agricultural uses in the Gulf coastal area south of Houston.

Water quality enhancement and protection are also primary objectives of the Brazos River Authority. The Authority owns and operates three regional sewage systems to help protect the quality of surface waters in the Brazos Basin. The Authority has developed and helped to implement the State's water quality management plan for the Brazos Basin and is presently engaged in a number of studies and management programs to identify and control non-profit sources of water pollution, both man-made and natural, in specific areas throughout the Brazos Basin.

The Section 404 permit program, as currently applied, results in needless delay and expense to agencies such as the Brazos River Authority in the development of vital water resoure projects at a time when the States and their political subdivisions are being urged by the Federal government to undertake greater responsibility for meeting the needs of their citizens.

Two actual Brazos River Authority projects, one now in planning and one in operation, best illustrate how the Section 404 permit program results in needless waste of both time and public funds.

The project in planning is Lake Bosque about 40 miles northwest of Waco, Texas, on the Bosque River, a tributary of the Brazos River. Planning on this project was initiated at the request of the City of Waco and nine smaller municipalities in Bosque and McLennan Counties. All of these cities other than Waco are presently dependent on dwindling groundwater supply sources. The City of Waco currently obtains its water supply from Lake Waco, a Corps of Engineers reservoir project, under contract with the Brazos River Authority. The combined municipal needs of the area are projected to exceed the dependable yields of Lake Waco and the area's groundwater sources in the relatively near future.

The Lake Bosque project will involve no expenditure of Federal funds whatsoever. The project will be financed entirely by Brazos River Authority through the issuance of revenue bonds based on water supply contracts with the participating cities. Because of the limited financial resources of the relatively small cities and rural areas it will serve, it is essential that Lake Bosque project costs be kept to the minimum consistent with sound development.

When completed, Lake Bosque will cover about 4,500 acres and will have a long-term dependable water supply yield of about 16,000 acre-feet per year. The project site is in the upper Bosque River watershed, barely within the prescribed reach of the Bosque River where a Section 404 permit is required.

The total estimated cost of the project in 1983 dollars is $33,200,000, including direct costs for obtaining the 404 permit. It is estimated that the direct costs associated with obtaining the 404 permit will be $800,000, not including any allowance for possible mitigation costs, which cannot be estimated at this time. The time required to obtain a 404 permit is estimated to be 305 calendar days more than that required to obtain all necessary State and local approvals. The increase in construction costs caused by this delay in beginning actual construction is estimated to range from a low of $1,660,000, assuming a 6 percent inflation rate, to a high of $2,766,667 at a 10 percent inflation rate. Taking a middle rate, 8 percent inflation, the permitting delays will cost the project participants an extra $2,213,333. Coupled with the $800,000 in direct costs, the total of the costs that will be added to the project just to obtain the 404 permit are estimated to be $3,013,333, or a 9.1 percent increase in estimated project costs, not including any allowance for mitigation costs which may be imposed on the project under the terms of the 404 permit.

Based upon amortizing the revenue bonds issued to finance construction of the project over a 25-year period at 9 percent interest, the estimated additional $3,013,333 direct and inflation costs imposed on the project to obtain the 404 permit will cause a $306,776 increase in the annual payments required of the users of water from the project.

The very substantial cost burden cited above is just for preparing, submitting and following through on the processing of the 404 permit application. If mitigation requirements are imposed as conditions for issuance of the 404 permit, their costs will be in addition to those summarized above. While these additional costs, in both time and public funds, are not quantifiable at this time, the Authority's past experience in the development of its Lake Limestone project indicates that they can be substantial.

In 1973 the Authority began planning for the construction of Sterling C. Robertson Dam and Lake Limestone on the upper Navasota River, a tributary to the Brazos River, to furnish water supplies needed to develop and utilize extensive lignite reserves in the area for thermal generation of electricity. Since no federal funding was involved in the financing of the project, and since the Navasota River, with flows of less than five cubic feet per second more than 25 percent of the time and zero flow for periods of up to 100 consecutive days, is not now nor ever has been navigable, no Federal interests were considered to be involved in the project. In fact, the Authority asked the Corps of Engineers whether any Federal government permits or approvals were required, and by letter dated July 19, 1974, the Corps informed the Authority that none was needed.

In accordance with State law, the Authority applied to the Texas Water Rights Commission for a permit to construct the project, and, after a public hearing by the Commission, a State permit was granted on October 1, 1974.

In June 1975 the Authority advertised for construction bids, sold $30 million in revenue bonds to provide the first increment of financing for the project, and on July 21, 1975, awarded a contract for construction of the dam and related facilities.

Subsequent to the initiation of construction, the Corps of Engineers was required by court order to publish revised Section 404 regulations, making its permit program for discharge of dredged or fill material into navigable waters applicable to the Navasota River beginning July 1, 1976. Accordingly, on October 9, 1975, the Authority submitted an application for a Section 404 permit for Sterling C. Robertson Dam and Lake Limestone. The Authority also agreed to pay an estimated $35,000 to underwrite the expenses of the Corps of Engineers to approve and reissue an Environmental Assessment previously prepared by the Authority and considered by the Texas Water Rights Commission before issuing the State permit for Lake Limestone.

The Corps circulated the Authority's permit application to a myriad of Federal agencies for comment, and no objections to the issuance of the permit were received from any of them until February 2, 1976. At that time the U.S. Fish and Wildlife Service recommended that the permit be denied unless the Authority agreed to pur-

chase 15,800 acres of land (in addition to the 15,000 acres required for the dam and lake) for use as wildlife management areas to be administered by the Texas Parks and Wildlife Department. The Authority strenuously objected to this recommendation on the grounds that taking an additional 15,800 acres of farm and ranch land out of private ownership to create a wildlife management area where none had existed before was contrary to the public interest, that the Authority had no source of funds to pay the enormous costs that such an acquisition would require, and that, other considerations aside, the Brazos River Authority has no legal authority to take land from private ownership for such use. The Authority's position on the matter was strongly supported in writing and in public statements by the citizenry of the project area, by numerous local governmental units and by the Governor of the State of Texas.

In December 1976, the U.S. Fish and Wildlife Service reduced its demands from 15,800 acres to 5,000-6,000 acres and demanded that construction of the project be halted pending resolution of the Section 404 permit question. In view of the strong State and local support for the project and the fact that the requirement for a 404 permit was applied to it retroactively, the Corps of Engineers allowed the Authority to proceed with construction while the Section 404 permit dispute was elevated from the District Engineer to the Division Engineer to the Chief of Engineers and finally to the Secretary of the Army for resolution.

As the project neared completion, the Authority's Board of Directors was faced with the possibility that Lake Limestone could not be placed in operation to perform the water supply function for which it was designed because of the continuing dispute over issuance of the 404 permit. To eliminate this threat, the Authority's Board reluctantly agreed in October 1977 to the terms of a Section 404 permit which required the Authority to commit and set aside $500,000 from its working capital to be used for acquisition of land or interests in land for wildlife mitigation purposes, on the basis of advice from and subject to the concurrence of the U.S. Fish and Wildlife Service and the Texas Parks and Wildlife Department. Finally, in April 1978, more than 900 days after the permit application was submitted, a Section 404 permit for Lake Limestone was issued.

This issue is still unresolved. It has thus far not been possible to obtain lands for wildlife mitigation in accordance with criteria established by U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department. Five hundred thousand dollars of the Authority's working capital is unavailable for use and enormous amounts of public and private time and money have been wasted because of mitigation demands imposed in obtaining a permit under Section 404 of the Federal Water Pollution Control Act. The bureaucratic permit requirements imposed on the project were totally unrelated to water quality and no justification based upon the public interest was ever established.

The problems encountered by the Brazos River Authority on these two projects in connection with the Section 404 permitting process are typical of those faced by the Authority and similar agencies throughout the nation on every project undertaken to meet the water supply needs of their citizens. The Federal Clean Water Act urgently needs to be amended to eliminate the unnecessary delays and expenses that Section 404 of the Act in its present form presently imposes on needed water resource development.

The National Water Resources Association, of which the Brazos River Authority is a member, has long called for amendment of Section 404 to alleviate the problems it causes to the Association's members. The Association has adopted a resolution which sets forth specific proposals for amending Section 404 to help achieve this objective. The Brazos River Authority endorses and urges that the proposals of the National Water Resources Association be incorporated into amendments of the Clean Water Act.

STATEMENT OF DR. I. M. RICE, EXECUTIVE VICE PRESIDENT, TRINITY IMPROVEMENT ASSOCIATION

Mr. Chairman and Members of the Committee, my name is I. M. Rice, of Irving, Texas, and I am speaking in behalf of the Trinity Improvement Association. This is a basin-wide organization of citizens who are dedicated to the wise use and development of the Trinity River basin in Texas.

I am most grateful to appear before you in order to recommend amendment of the Clean Water Act, particularly Section 404. I will present to you our views as to problems arising from the present language of the Act, comment briefly on H.R. 3282 and make suggestions as to how the Clean Water Act might be improved.

You have just heard testimony from Mr. Carson Hoge concerning specific problems he has encountered with the Act. When I appeared before this committee on July 28, 1982, during the last Congress, I cited a number of specific examples in Texas and throughout the nation where the requirement to comply with Section 404 has resulted in needless costs without commensurate benefits. I will not repeat this testimony but will update those earlier comments in the light of developments since a year-and-a-half ago.

Next, I would like to address what are perceived to be undesirable features of H.R. 3282. By way of background, in 1980, over 10,000 Section 404 permit applications were submitted and more than 8,000 permits were granted. The cumbersome review process was far too slow. Overlapping agency jurisdiction and repetitive reviews by each layer of the federal hierarchy nullified adherence to any reasonable time schedule. For controversial applications, the processing time averaged 271 days.

H.R. 3282 would amend Section 404(b) making the guidelines regulatory in nature. This has the effect of establishing a presumption that a proposed discharge will be prohibited unless the guidelines are met. It is recognized that the guidelines should and will be followed, but if they are made regulatory, it opens up any alleged variation from the guidelines to third party litigation. Adherence to the guidelines should be a matter for executive department to decide, not offer a fertile hunting ground for project opponents to find ways to transfer the decision to federal court and, if noting more, delay the project.

One of the goals of this administration has been to reduce paper work and streamline government procedures. Assistant Army Secretary Giannelli was assigned the task of preparing a memorandum of agreement on the processing of applications for Section 404 permits. Significant accomplishments of Mr. Giannelli's rules included setting an objective of processing a permit in 60 days unless an environmental impact assessment was required. Agencies were given specific time limits in which to respond to an application. Moreover, it had become customary to delay issuance of permits by reraising the same issues at the successive hierarchical levels of government. The general permits:

Section 404(e)(1)—Authorize the Secretary to issue general permits for head waters and isolated waters.

Section 404(e)(2)—Rather than automatically expiring at the end of 5 years, general permits should be subject to review at the end of 5 years.

Lastly, and most importantly, it is urged that Congress clarify the wetlands issue. The Clean Water Act has been used to impose federal control of land use on the individual property owners. Any unbiased person recognizes that some of the partially or periodically inundated lands in this country are a national resource whose total destruction would be a national loss. The problem is to define or delimit wetlands in a way that the ordinary citizen can understand. Surely not every damp spot in the United States warrants federal control.

Determination as to what constitutes a wetland is an uncertain process. It varies from district to district, from biologist to biologist. Some developers would want a definition that left them free of any control. Some no-growth advocates and ardent environmentalists would preserve every inch of land that could possibly be defined as a wetland. The federal government can bring enormous resources to bear in a disputed case and, to some federal agencies, the amount of time and, effort consumed on an application review is not a consideration. Sometimes the owner gives up on what he believes to be just because of the inability to cope with the federal forces ranged against him.

Mr. McNULTY. Please proceed.

TESTIMONY OF CARSON H. HOGE, P.E., GENERAL MANAGER, BRAZOS RIVER AUTHORITY, WACO, TEX.; I. M. RICE, EXECUTIVE VICE PRESIDENT, TRINITY IMPROVEMENT ASSOCIATION, IRVING, TEX.

Mr. HOGE. Thank you, Mr. Chairman, members of the subcommittee. I am Carson Hoge, general manager of the Brazos River Authority of Texas. I am appearing here today both in that capacity and on behalf of the National Water Resources Association to urge amendment of the section 404 of the Federal Clean Water Act.

In addition to this oral statement, we are submitting more extensive written testimony on behalf of both the Brazos River Authority and the National Water Resources Association, and I ask that this written testimony be incorporated into the record.

Mr. McNulty. It has been made a part of the record. Thank you.

Mr. Hoge. The National Water Resources Association, which was founded in 1932, is a confederation of State water users associations in the 17 continental Western States and Hawaii. The objectives of the association include promotion of the development, control, conservation, preservation, and beneficial utilization of the water resources of the Nation; development of irrigated lands for present and future generations; cooperation with and assistance to Federal water resource development agencies in securing authorization, appropriation of funds, and construction of Federal water resource projects which meet with the approval of the States and localities affected; assistance to States and their water users in the economic development and operation of water improvements; preservation of the rights and interests of the States in their water resources; and the promotion of legislation in furtherance of, and opposition to legislation detrimental to, these purposes.

For a number of years, the association and its individual members have consistently urged amendment of section 404 of the Federal Clean Water Act and adoption of administrative reforms to the section 404 permit program to reduce the costly and time-consuming burdens they impose on State, regional, and local water resource development agencies in their efforts to complete water resource projects necessary to meet the needs of their citizens.

The problems faced by the Brazos River Authority in connection with a project it currently has under development is typical of the burdens imposed by the section 404 permit program on all of the members of the National Water Resources Association and on water resource development and management agencies throughout the Nation.

The Brazos River Authority is an agency of the State of Texas created in 1929 and given statutory responsibility for conservation and development of the surface water resources of the Brazos River basin in Texas, an area of about 42,000 square miles stretching across the heart of Texas from the New Mexico border to the Gulf of Mexico. Although it is a political subdivision of the State of Texas, the Brazos River Authority does not levy taxes and does not receive appropriations from the State of Texas, but is entirely self-supporting, utilizing revenues from its own operations to pay all of its costs.

I might digress from the written statement here, Mr. Chairman, to point out and emphasize that the Brazos River Authority and others who are members of the National Water Resources Association support completely the objectives of the Clean Water Act, including the objectives of section 404 of that act. We spend a great deal of our time in the field in the expenditure of time and effort and money to achieve those purposes.

The authority itself is engaged extensively in water quality protection activities throughout the Brazos basin. And I am sure that is true of other members of the association as well. Our concern is with the problems that we feel are unnecessary impediments to

water resource development that result from the way in which section 404 now is interpreted and administered. And my testimony today, my oral testimony, will concentrate on bringing to you an example of how that has occurred, an actual example of how that is occurring at this present time in connection with a project we are trying to develop that we think will show the impact of 404.

Dr. Rice, who represents the Trinity Improvement Association here today will then give you some elaboration. He will supplement my testimony by elaborating on what we think could be done to improve this situation.

Mr. McNULTY. All right.

Mr. HOGE. In carrying out its statutory responsibilities, the Brazos River Authority has developed a basinwide water supply system consisting of 12 major reservoirs with a total conservation storage capacity exceeding 2.1 million acre-feet and a long-term dependable yield of more than 600,000 acre-feet of water per year. The authority also owns and operates three regional sewerage systems and engages extensively in other programs directed toward enhancement and preservation of water quality.

Problems experienced by the Brazos River Authority with the section 404 permit program are typical of the needless delays and added expenses encountered by water resources development agencies throughout the Nation in trying to meet the water supply needs of the citizens they serve.

The authority is currently engaged in planning for the development of a lake on the Bosque River, a tributary of the Brazos River, to furnish the water supplies needed to meet the near- and long-term future needs of the city of Waco and nine smaller municipalities and rural areas in Bosque and McLennan Counties in central Texas. This project will involve no expenditure of Federal funds whatsoever; it will be financed entirely by the Brazos River Authority through the issuance of revenue bonds based on water supply contracts with the water users. Because of the limited financial resources of the relatively small cities and rural areas it will serve, it is essential that the Bosque project costs be kept to a minimum consistent with sound development.

The total estimated cost of the project in 1983 dollars is $33,200,000, including the direct costs estimated for obtaining the section 404 permit. It is estimated that the direct costs associated with obtaining the 404 permit will be $800,000, not including any allowance for possible mitigation costs, which cannot be estimated at this time. The time required to obtain a 404 permit is estimated to be 300 calendar days greater than that required to obtain all necessary State and local approvals, and the increase in construction costs caused by this delay in beginning actual construction combined with inflation is estimated to be more than $2 million.

Coupled with the $800,000 in direct costs, the total of the costs that will be added to this project just to obtain the 404 permit are estimated to be more than $3 million, or a 9-percent increase in estimated project costs, not including any allowance for mitigation costs which may be imposed on the project under the terms of the 404 permit. Based upon the estimate that the revenue bonds issued to finance the project will be amortized over a 25-year period at 9-percent interest, the total estimated additional costs imposed on

the users of water from this project just for preparing, submitting, and following through with the processing of the 404 permit application will be $7,670,000.

If mitigation requirements are imposed as conditions for issuance of the 404 permit, their costs will be in addition to those summarized above. While the additional costs of mitigation cannot be quantified at this time, actual experience on other authority projects in the past would indicate that they could be very substantial both in time and in expenditures of public funds.

Both the written testimony of the National Water Resources Association and the testimony of the Trinity Improvement Association of Texas at this hearing include specific proposals for amendments of section 404 of the Clean Water Act. The Brazos River Authority endorses these proposals and respectfully urges that they be incorporated into amendments of section 404 in order to relieve the water resources program of this Nation of the unnecessary burdens of delay and expense that the section 404 permitting program presently imposes on it.

Mr. McNulty. Mr. Hoge, thank you.

Mr. Rice, we would be pleased to hear from you now.

Mr. Rice. Mr. Chairman, members of the committee, my name is I. M. Rice, of Irving, Tex., and I speak on behalf of the Trinity Improvement Association. You have my remarks in front of you.

I may digress from time to time for amplification.

This association is a basinwide organization of citizens. It is publicly supported, nonprofit, and we are devoted to the wise use and development of the Trinity River basin in Texas.

I would like to present to you our views as to problems arising from the present language of the act, comment briefly on H.R. 3282, and make suggestions as to how the Clean Water Act might be improved.

You have just heard testimony from Mr. Carson Hoge concerning specific problems he has encountered with the act. I appeared before this committee on July 28, 1982, during the last Congress. At that time I cited a number of specific examples in Texas and throughout the Nation where the requirement to comply with section 404 has resulted in needless costs without commensurate benefits.

I will not repeat this testimony. I have a copy of it with me, if you would care to have it.

I would like to update where we stand today.

First, the Clean Water Act. There is confusion and uncertainty which accompanies Federal enforcement of section 404. I would like to cite a recent example to you. That is the case of the Avoyelles Sportsmen's League versus Secretary of the Army John Marsh. The case involved the clearing of a 20,000-acre tract on the Avoyelles Parish of Louisiana. It is a part of the Bayou Natchitoches basin. There are about 140,000 acres in that basin and about 60,000 had already been cleared.

The owners of the 20,000-acre tract which still had forest on it wanted to convert that to agricultural land. They wanted to raise soybeans. They started this conversion action in 1978 but on August 25 of that year, the Corps of Engineers ordered the owner

of the land, Mr. Prevo, to halt his operations pending a decision on wetlands.

The corps made a study and their expert determined that 35 percent of the 20,000 acres constituted wetlands and would require a 404 permit. But, following that, the sportsmen's league brought suit claiming that section 404 of the Clean Water Act was being violated.

This was taken before the court of Judge Scott in the western district of Louisiana.

He granted an injunction against any further clearing pending determination of the EPA as to the extent of the wetlands.

About a year later, in March 1979, EPA determined that 80 percent of the tract was wetlands. We had 35 percent; now we have 80 percent. But the court then decided that 90 percent of the tract was wetlands and required that before any more clearing of any of that 90 percent of the tract could be undertaken, a 404 permit was required.

This case was appealed to the fifth circuit court in New Orleans, which overruled the judge, stating that he should leave it up to the administrative agencies to determine the extent of wetlands, which had the effect of leaving the 80 percent in control.

The point I am trying to make is this. Three presumably competent and sincere entities viewed an identical problem and came up with three different answers: 35 percent, 80 percent and 90 percent.

That is really too big of a spread. Surely it would be beneficial to the citizens if Congress would clarify its intention as to what is and what is not wetlands within the meaning of section 404.

I will later suggest a remedy.

Now, to address for a moment H.R. 3282, I am going to talk about just that part of H.R. 3282 that has to do with section 404.

By way of background, in 1980, over 10,000 section 404 permit applications were submitted and more than 8,000 permits were granted. The cumbersome review process was far too slow.

Overlapping agency jurisdiction—but more important, repetitive reviews of the same comments at each successive level of the Government hierarchy, starting with the district engineer and coming all the way to Washington were the causes of delay.

As a result, the average processing time for any controversial action was 271 days.

H.R. 3282 would amend section 404(b), making the guidelines regulatory in nature. This creates a great problem. This has the effect of establishing a presumption that a proposed discharge will be prohibited unless the guidelines are met.

We recognize that the guidelines should be and are followed, but if they are made regulatory, it opens up the review process to third party litigation.

We believe that adherence to the guidelines should be a matter for the executive branch to decide, not offer a fertile hunting ground for project opponents to find ways to transfer the decision to Federal court and, if nothing more, delay the project, hopefully to the point where the sponsor of the project would give up.

One of the goals of this administration has been to reduce paperwork and streamline Government procedures. What I am saying

now has to do with the question Mr. Stangeland asked the previous witness.

Assistant Army Secretary Giannelli was assigned the task of preparing a memorandum of agreement for the processing of applications for section 404 permits.

Significant accomplishments of Mr. Giannelli's rules included setting an objective of processing a permit in 60 days unless an environmental impact assessment was required.

Agencies were given specific time limits in which to respond to an application. Moreover, it had become customary to delay issuance of permits by reraising the same issues at the successive hierarchical levels of the Government but the memorandum of agreement limited the appeal process to only one reclama and that was at the Assistant Secretary level.

We believe there has been no demonstrated need to alter this memorandum of agreement, but H.R. 3282 would add 30 to 60 days to the normal processing time, raising that objective to 90 or 120 days from the present 60 days.

A 30-day delay would be imposed even when a permit was not opposed by anyone.

An additional automatic 30-day delay would be imposed by any agency commenting on the permit.

H.R. 3282 would also reinstate the repetitive reviews at successive agency levels. It is poor management to have more than one agency in charge of a program. Statutory imposition of automatic rights will, in our opinion, only serve to further confuse an already confused procedure.

H.R. 3282 also transfers final decisionmaking from the assistant department secretary level to the secretary. We do not believe that the public interest will be better served nor will the Secretary of the Army welcome this additional burden. Had I been asked the same question, Mr. Stangeland, I would have said if the procedure of processing which is now imposed by the Giannelli reforms, were adopted by the statute, I think that would be excellent.

If you are not already aware, those reforms are under attack in court also.

Now, for proposed changes to the Clean Water Act.

Rather than the proposed amendments of section 404 contained in H.R. 3282, beginning on line 13, page 15 and continuing through line 24, page 18, we would suggest three changes or clarifications.

With regard to section 404(b), make it clear that the guidelines developed under this section shall not be regulatory criteria but rather advisory guidance for the Secretary.

With regard to section 404(e)(1), authorize the Secretary to issue general permits for headwaters and isolated waters.

Third, section 404(e)(2), rather than automatically expiring at the end of 5 years, general permits should be subject to review at the end of 5 years.

Lastly and most importantly, I want to urge that Congress clarify the wetlands issue.

The Clean Water Act has been used to impose Federal control of land use on the individual property owners. Some of the partially or periodically inundated lands in this country are a national resource whose total destruction would be a national loss. The prob-

lem is to define or delimit wetlands in a way that the ordinary citizen can understand. Surely not every damp spot in the United States warrants Federal control.

Determination as to what constitutes a wetland is an uncertain process. I have cited the case in Louisiana. We know from experience that it varies from Corps of Engineering district to district. Different biologists have different decisions on wetlands. We know that some developers would want a definition that left them free of any control and I don't believe that is right.

We know some no-growth advocates and some ardent environmentalists would preserve every inch of land that could possibly be defined as a wetland. There has to be some happy medium in there.

Now, the Federal Government can bring enormous resources to bear in a disputed case and to some Federal agencies the amount of time and effort consumed on an application review is not a consideration.

Sometimes the owner is forced to give up what he believes to be right because he just can no longer contend with Federal forces ranged against him. So again I would say we respectfully urge that Congress clear up the ambiguity concerning wetlands. If development of wetlands is to be controlled, let them be defined, let them be demarcated by metes and bounds or on maps. Let the owners be reimbursed for taking of property rights or otherwise compensated when their use of the land is inhibited by Federal rulings.

The present situation is unsatisfactory, leaving decisions too much to junior Federal officials, thereby inviting the courts to take over the management of the permit process.

One final word, dredging and filling, construction operations, are not the only ways a wetland is destroyed or altered. Withholding water supplies, drainage resulting from actions taken at other locations, introduction of new plant species, either accidentally or by design, can change; grazing and just plain eutrophication or changes by nature, all these things can affect welands and do not involve a section 404 permit.

Mr. Chairman, thank you for this opportunity to express these views.

Mr. McNULTY. Mr. Rice, thank you.

Members of staff, have you questions for Mr. Hoge or Mr. Rice?

Well, we thank you for coming clear up here from Texas to talk about these things, and we are grateful for your testimony, the lucid way you presented it.

Mr. HOGE. Thank you very much.

Mr. RICE. Thank you.

Mr. McNULTY. Here is our friend from Minnesota. I don't know whether he might have questions.

Mr. STANGELAND. Thank you, Mr. Chairman, I have no questions.

I do want to join the chairman in commending you on some excellent testimony and thank you for coming and contributing to the hearing process as we move forward with this very important piece of legislation. I think your comments will be very helpful.

Mr. RICE. Thank you.

Mr. HOGE. Thank you, sir.

Mr. MCNULTY. From the American Association of Port Authorities, Alfred Hammon, chairman, AAPA Committee on Harbors and Navigation and supervisor of the Harbor Planning, Port Authority of New York and New Jersey. He is accompanied by Peter Gatti, his counsel. You two gentlemen are here. Mr. Hammon, good afternoon.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF ALFRED HAMMON, CHAIRMAN, HARBORS AND NAVIGATION COMMITTEE, THE AMERICAN ASSOCIATION OF PORT AUTHORITIES

Mr. Chairman and distinguished members of the Committee, my name is Alfred Hammon. I am appearing here today as Chairman of the Committee on Harbors and Navigation of the American Association of Port Authorities, a professional and trade association comprised of more than 130 public port agencies as corporate members and an additional 250 firms and individuals as contributing, associate, or honorary members. The Committee of which I serve as Chairman is responsible for responding to the increasing difficulties that have confronted AAPA member ports in the disposal of dredged material and for recommending needed legislative and regulatory changes in programs that affect port activities.

I would like to express AAPA's appreciation at the opportunity to testify here today in the consideration of H.R. 3282, the "Water Quality Renewal Act of 1983." This bill proposes water quality amendments and changes in the Sec. 404 program and other matters relating to dredged material that will have a direct effect upon ports and their navigation needs.

Our Nation's ports have a deep involvement in the 404 permit process. The maintenance of adequate water depths in the channels, berths and basins of this country's ports is critical to the proper and efficient operation of port facilities. In addition, the development of efficient modern port facilities on a continuing basis is necessary to maintain our national security, economic stability, and the appropriate import and export of commodities. The extent of this country's reliance upon ports is illustrated in the Summary Fact Sheet prepared by AAPA, a copy of which is attached to this statement.

Port dredging involves a continuing need to dispose of dredged material. The 90 public port agencies of the U. S. are faced with obtaining disposal permits on an almost continuing basis. Over the past five years, this experience has called attention to very fundamental aspects of the 404 program that have failed to meet the need of the U. S. port industry, and that therefore urgently require change. The regional, national, and international interests that depend upon port activities can be served only through a permit system that allows a full and fair consideration of dredging projects, and provides for expeditious decisions. This need, however, has generally not been met. To the contrary, ports have often found the 404 program to be characterized by delay in the processing of permits, uncertainty over the scope and meaning of the criteria and standards for evaluation, interagency disputes as to permit decisions, and disagreement (and litigation) as to how environmental concerns are to be brought together with this country's equally important economic, governmental, and defense needs.

In this testimony, the AAPA wishes to commend the Committee's recognition of a need for changes in the 404 program and to express support for a number of features in H.R. 3282. We also wish to identify other areas of the bill that are of concern and as to which the AAPA requests change. Our recommendations are not designed to interfere with the goal--shared by all of us--protecting our Nation's waters from unreasonable degradation. Port interests are not unresponsive to environmental concerns. The two can and must be accommodated in a fashion that takes realistic account of navigation needs that must go on. In our testimony, we have tried to present such an accommodation.

1. Sec. 6, amending Sec. 303(c),(2), pp. 7-9

AAPA supports the approach taken in proposed Sec. 303 (c) (2) (B) (p.7) of allowing States flexibility in revising water quality standards to allow less restrictive uses based upon realistic "attainability" limitations. The AAPA feels, however, that such flexibility should also apply where existing water quality standards were established on the basis of insufficient information regarding naturally-occurring parameter levels, requirements for environmental health, or where a change in designated uses is sought by a State for economic, governmental, commercial, social or other "public interest" reasons. This type of latitude is essential for the orderly planning of future growth and development.

AAPA is also concerned about the proposal in Sec. 303 (c) (2) (C) (pp.7-8) that, where water quality exceeds the levels necessary to support uses designated in an existing standard, upward revision of the standard is required to preserve the higher quality of the water. Where a designated use is being met, this additional water quality level should not be imposed upon a State without any consideration of social, economic, navigation, and commercial needs and consequences.

AAPA supports the principle expressed in new Sec. 303 (i) of allowing a state to modify water quality which exceeds the levels necessary to support propagation of fish, shellfish, wildlife and recreation "because of essential economic and social development for which there is no feasible alternative." However, AAPA would recommend substitution of the word "practicable" for the word "feasible" on p.9, line 4, as related to alternatives, to take account of the decision of the U. S. Supreme Court in American Textile Manufacturers Institute, Inc. v. Donovan, 452 U.S. 490, 509 (1981). There, the Court held that use of the word "feasible" in Sec. 6(b) (5) of the Occupational Safety and Health Act of 1970 meant "capable of being done", without consideration of costs and benefits. Use of the word "practicable" would also conform with the approach taken in regard to alternatives on p.15, line 20, in the proposed amendments to Sec. 404(b).

AAPA is also concerned about the provision in Sec. 303(i) (p.9, lines 5-7) that "(i)n no event, however, may degradation of water quality interfere with or become injurious to existing instream water uses". This would appear to largely negate the authority given the State to modify water quality standards for such waters. If existing instream water uses cannot to any extent be "interfered with" for overriding reasons, then the ability of a State to make meaningful choices as to future growth and development is seriously impaired.

From the standpoint of ports, it is essential that a mechanism be provided in Sec. 303 to allow change in the designated uses of a waterbody. Expansion of critically needed port facilities and the development of new channels will at times justify such a redesignation of uses (e.g., from propagation of fish and shellfish to navigation needs).

2. Sec. 9, adding new section 319 ("Estuaries")

AAPA has a number of concerns about proposed Sec. 319 relating to "Estuaries". The definitions of the terms "estuary" and "estuarine zone" in Sec. 319 (e) are unclear. If, on the one hand, they are limited to waters having a measureable salinity content (as provided in Sec. 104(n) (4) of the Clean Water Act), then Sec. 319 would apply to a very limited number of "estuaries", and it is difficult to discern the reason and need for the section. On the other hand, if extension of the term "estuarine zone" to include "the estuarine basin or estuarine watershed, consisting of the estuary and all tributaries that are within that basin of water" is in fact intended to include all fresh waters, it would include so many states that the program would be unworkable. If there are existing needs for this type of management in specific areas, they should be identified and disclosed to allow an informed evaluation of and comment upon the proposed new section.

Section 319 is also unclear as to the extent of the requirement for development of a "comprehensive master plan". There are often practical and political disagreements between states, and differences in state goals and policies, that may present very real difficulties in achieving final development of such a master plan. Such difficulties, however, should not be allowed to interfere with, impede, or otherwise adversely effect the continued conduct of needed port improvements and operations, such as channel improvements and landside terminal facilities.

Section 319 also does not take port concerns and needs into account in its proposal for development of a master plan. The emphasis is upon "... the attainment or maintenance of that water quality in an estuary which assures protection of public water supplies and the protection and propogation

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of a balanced, indigenous population of shellfish, fish, and wildlife, and allows recreational activities, in and on the water,...". No consideration is given to navigation needs and other port uses of these waters. Indeed, the listed fish, wildlife, and recreational uses might be construed (or asserted) to preclude new port operations.

Given that estuaries frequently sustain port activities, we believe that any true "comprehensive master plan" must also consider economic, commercial, navigation, or trade needs. The failure to consider such port-related concerns has been a fundamental problem with "standard-setting" in the past. It has often resulted in unrealistic and one-sided standards that fail to take into account important elements of the total "public interest" that should have been considered.

3. Sec. 10, amending Sec. 404(b), p.15

AAPA has serious concerns with new language proposed in Sec. 404 (b) (1) (B). It creates a presumption that all discharges of dredged material are unacceptable and must be prohibited, and requires that this presumption be "disproved" in the permit process. In the view of AAPA, discharges of dredged material associated with navigation needs should be presumptively allowed unless a finding ismade that the discharge will have an unacceptable adverse effect. This determination should include a consideration of all factors affecting the public interest--either by inclusion of such factors in the 404(b) (1) Guidelines, or by separate public interest review.

Under the proposed language, even if there will be no unacceptable adverse effects from the discharge, a permit applicant must still show that there is no practicable alternative which will have less adverse effect on the aquatic environment, and will not have other significant adverse environmental

consequences. AAPA feels that this further showing is unnecessary and inappropriate. The consideration of alternatives should not be required where a discharge will not have an unacceptable adverse effect. In that event, the discharge should be allowed. It is in cases where adverse effects would be produced that consideration of alternatives becomes crucial. This consideration becomes a fundamental part of the determination of "acceptability" of the discharge from the standpoint of the overall public interest. In that determination there should be no bias against the acquatic environment as a disposal medium. The recent scientific evidence and experience indicates equal consideration should be given to all disposal options.

4. Sec. 10, amending Sec. 404(q), pp. 16-18

AAPA supports a number of the changes proposed in the amendment to Sec. 404 (q). The general tightening of the time limits for "comment" by other Federal agencies, and for "elevation" of a disputed decision to issue the permit, has been long overdue. AAPA would, however, urge the Committee to make certain modifications in the proposed language.

(a) The language should clarify that the interagency notice required to be given by the District Engineer (p. 16, line 7-10) of the filing of a permit application must be within the fifteen (15) day period specified in Sec. 404 (a) for issuance of public notice. Any further delay in the giving of such notice would unnecessarily extend the time for permit review, decision, and coordination.

(b) The reference to "the heads of other appropriate Federal agencies" (p. 16, lines 9-10) is vague and could lead to disputes as to what other Federal agencies are "appropriate". The other agencies should either be

specified, or their appropriateness should be determined by the Secretary of the Army.

(c) Other agencies should not have a right to an automatic extension of the comment period for an additional period of thirty (30) days (p. 16, lines 13-15). The right to the extension should be allowed only for "just cause".

(d) The AAPA is concerned about the requirement (p. 16, line 20 and p. 18, line 10) that the District Engineer and Division Engineer give "full consideration" to the comments of other Federal agencies. This implies that greater consideration will be given to these comments than to other relevant factors in the permit process. AAPA would recommend that this provision be deleted, or else that the phrase "along with all other relevant factors and information" be added to these two sections to make clear that "full consideration" is to be given to all pertinent information.

(e) The Administrator, the Secretary of the Interior, and the Secretary of Commerce should not have an automatic right of "elevation of a dispute" simply "upon request" (p. 17, lines 24-25 and p. 18, lines 1-4). The right to request elevation should be allowed only for narrowly defined reasons, such as for insufficient interagency coordination at the district level, development of significant new information not previously available or the need to resolve environmental issues of national importance requiring policy level review. These are limitations contained in the current Memoranda of Understanding executed between the Secretary of the Army and the heads of these other Federal agencies, and they reflect the recommendations of the Presidential Task Force on Regulatory Relief for simplifying the 404 permit process. We believe these limitations should be continued.

* * *

This concludes the AAPA testimony upon H.R. 3282. We have tried to offer constructive suggestions for changes that the ports of this country feel are clearly needed. We do not comment from the standpoint of an idle observer. Ports are involved day-in and day-out with the 404 permit process. Our appreciation of its shortcomings is based upon direct experience.

In an effort to offer a sense of direction to the basic structure of the 404 permit program, AAPA has prepared a more comprehensive statement of principles that was contained in a letter to Senator John Chafee. We strongly feel these principles should guide and govern any amendments to Sec. 404. A copy of this letter (yellow insert) is attached to my testimony for inclusion in the Hearing Record. These principles entail no sacrifice of environmental protection; but they would achieve a more manageable, workable, and balanced regulatory program. We ask that they be reviewed and carefully considered by the members of the Committee in these Clean Water Act hearings.

Thank you.

American Association of Port Authorities

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THE AMERICAN ASSOCIATION OF PORT AUTHORITIES

SUMMARY FACT SHEET

U.S. SEAPORT INDUSTRY--STRUCTURE

-- 189 deepwater ports on the Atlantic, Gulf, and Pacific coasts and the Great Lakes capable of handling vessels with drafts of 14 feet or more.

-- 1,456 marine terminals including 2,939 ship berthing facilities. Approximately 51 percent are publicly-owned by state and local government entities and 51 percent are privately-owned.

-- Actual cash value and estimated replacement cost of all marine facilities in the U.S. is $40.4 billion and $54 billion respectively (in 1977 dollars).

-- Total facility investment by public port authorities of $4.86 billion, in the period 1946-1978, including $1.6 billion for 1973-1978.

-- Projected port capital expenditures for 1980-1990 will be in excess of $5 billion.

-- An industry that is overwhelmingly the product of local and private initiative and investment.

U.S. SEAPORT INDUSTRY--ECONOMIC IMPACT

-- In 1980, U.S. ports accounted for:

- more than one million jobs
- $86 billion in gross sales within the nation
- $35 billion of Gross National Product
- $23 billion in personal income
- $7.9 billion in business income
- $5.0 billion in state and local taxes
- $10 billion in federal tax and customs revenues

-- The value of foreign trade equates to more than 20 percent of the value of the U.S. Gross National Product.

-- Oceangoing vessels carry more than 95 percent of the tonnage in

U.S. overseas foreign trade, all of which moves through seaports by necessity.

-- U.S. waterborne foreign commerce in 1981 totaled 886.3 million short tons valued at $318.8 billion.

-- U.S. seaports provide essential services to the nation's transportation system.

U.S. SEAPORT INDUSTRY--THE NATIONAL INTEREST

-- Provides the necessary transportation infrastructure to transfer cargo and passengers efficiently between ship and shore.

-- Facilitates movement of U.S. exports and thus helps the nation's balance of payments.

-- Provides means of entry for imports of strategic materials essential to national security - petroleum, metallic ores, etc.

-- Maintains facilities needed for the deployment of U.S. military forces and for the reinforcement and support of U.S. allies in time of war or international emergency.

THE ROLE OF GOVERNMENT

STATE AND LOCAL GOVERNMENT

-- Public port agencies are established, administered, and operated under state and local laws.

-- Public port agencies are generally self-supporting, with revenues coming from user fees, property rentals, etc.

-- Public port agencies act as local sponsors for navigation projects undertaken by federal government.

FEDERAL GOVERNMENT

-- Historically has provided anchorages, harbors, main shipping channels, navigation aids, harborworks (such as breakwaters).

-- U.S. Army Corps of Engineers and U.S. Coast Guard have been traditionally involved in port matters, with the Corps' involvement dating from 1824.

-- The policy of non-discrimination between ports is rooted in the U.S. Constitution and various shipping acts.

-- Federal investment in deepwater navigation projects is a fraction

of federal customs and vessel tax receipts collected from commerce generated by the ports. Fiscal year 1981 collections at U.S. seaports amounted to $5.6 billion from customs duties and $14 million from vessel tonnage fees contrast with total expenditures by the Coast Guard and Army Corps of Engineers for navigation projects of some $700 million.

-- Federal investment in deepdraft navigation from 1824 through FY 1979 amounted to around $4.4 billion; investment in port facilities by non-federal entities amounted to at least $5 billion for the 1946-1980 period.

THE COSTS OF SEAPORT OPERATION

-- Seaports are largely dependent on revenues generated by operations and to a lesser extent, on state and local tax monies.

-- Many are required to be financially self-supporting under state law.

-- Most seaports have only marginal returns, ranging from +2 to -2 percent.

-- Inflation has significantly raised the cost of land, equipment, construction, fuel, and all other aspects of marine terminal expansion and operation. The high cost of capital also affects the ability of ports to provide new or expanded facilities.

-- Compliance with federal health, safety, security and environmental protection has added significantly to the burden of public port costs - $194 million in the period 1970-1976 alone.

-- Excessive delays in the processing of federal permits needed to proceed with essential terminal and navigation projects mean even higher costs, economic losses, and actually threaten to shut down some U.S. ports.

American Association of Port Authorities

J. Ron Brinson,
President

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April 18, 1983

Senator John H. Chafee, Chairman
Subcommittee on Environmental Pollution
61 Capitol Hill Apartments
128 "C" Street, N.E.
Washington, DC 20510

Dear Mr. Chairman:

In connection with the Subcommittee hearings on reauthorization of the Clean Water Act (33 USC §§ 1251 et. seq.), the American Association of Port Authorities (AAPA) urges the Subcommittee to consider fundamental changes that are urgently needed in Section 404 (33 USC §1344) and that are, from the standpoint of ports, long overdue.

This nation's ports have a deep involvement in the 404 permit process. The maintenance of adequate water depths in the channels, berths and basins of this country's ports is critical to the proper and efficient operation of port facilities. In addition, the development of efficient modern port facilities on a continuing basis is necessary to maintain our national security, economic stability, and the appropriate import and export of commodities. The extent of this country's reliance upon port operations is perhaps best illustrated in the Summary Fact Sheet prepared by AAPA, a copy of which is attached.

These port operations involve a continuing need to discharge dredged material in our nation's waters. The 90 public port agencies of the U.S. face the challenges of obtaining Section 404 permits on an almost continuing basis. The experiences of these AAPA members with the 404 permit program have been fraught with difficulty and are characterized by unnecessary delays, increased project costs, worsening bureaucratic red tape, endless disagreements among federal agencies who "comment" upon 404 permit applications, and needless expenditures which bear little relation to the goal of environmental protection. These concerns require legislative action to correct effects which, AAPA believes, were never intended by Congress in its passage of Section 404. The administrative process has simply not proven adequate to correct its own abuses. It is time for the Congress to speak directly to port concerns.

In this letter, AAPA presents a statement of principles that

represents the basis for the changes which we believe are necessary.

Statement of Principles

- Section 404, as presently worded, does not specify the "standard" upon which permit decisions are to be made. In practice, decisions have been based upon confusing and often conflicting applications of the Corps of Engineers "public interest review" and the EPA 404(b)(1) Guidelines. This uncertainty must be removed. Section 404 should be amended (i) to specify "unreasonable degradation" as the "standard" to be applied (i.e., a 404 permit will not be issued if it would result in "unreasonable degradation" of "waters of the United States"), and (ii) to provide that this determination is to be based upon a "balancing" of all factors affecting the "public interest"--not just certain concerns (such as environmental or economic) to the exclusion of others.

- Section 404 should specify the relationship between the Section 404(b)(1) "guidelines" and the "standard" for permit decision. AAPA supports the view that the guidelines should not be "binding" compliance requirements, but "guidelines" to be considered with other relevant factors in determining whether "unreasonable degradation" will occur. If the "guidelines" are to be binding, they should not be restricted to environmental concerns alone, but should include appropriate consideration of other relevant factors in determining the question of "unreasonable degradation."

- The special recognition of port concerns in Section 404(b)(2)--i.e., "economic impact of the site on navigation and anchorage," which includes defense, employment world trade and tax revenues--should be retained to assure full and adequate consideration of the major national, regional, state, and local interests which ports serve.

- Consideration of "alternatives" (i.e., other means or methods of disposal) should be required only in those cases where a proposed discharge has a potential for causing significant adverse effects. If the discharge is essentially innocuous, there should be no rote insistence upon consideration of "alternatives."

- The Section 404(c) "veto" authority of the Administrator should be related to the standard of "unreasonable degradation" (including the consideration of all factors affecting the "public interest") i.e., a "veto" should be authorized only where the Administrator finds that the specified environmental concerns "outweigh" other factors relating to

the public interest and will result in "unreasonable degradation."

- Provision should be made for the issuance of permits for recurring maintenance dredging activities for a period of up to 10 years--either in connection with the individual permit process, or as general permits. Moreover, permit periods for construction activities should reflect time rather than arbitrary and possibly disruptive time limits. The Secretary can assure sufficient review and supervision of such activities by including appropriate monitoring and reporting requirements as conditions to the permit.

- The "general permit" procedure of Section 404(e) should be amended to specifically authorize "general permits" (i) for geographic areas, (ii) for categories of activities which, while not necessarily "similar," are appropriate for authorization by general permit, and (iii) as a means of avoiding duplication of effort and reducing unnecessary bureaucratic red tape. The Secretary can maintain adequate supervision and control over activities covered by such general permits through establishment of appropriate advance notification or reporting requirements.

- Expansion (or clarification) of Section 404(f)(1)(B) exemption from permit requirements to include shoreside structures such as piers, docks, wharves, and marine terminals.

- Section 404(q) should require that final decision be made upon a Section 404 permit application to the maximum extent practicable within 60 days, and in no event later than 90 days from the date of the Public Notice, with provision for only a single extension of time, not to exceed 30 days, when the Secretary finds "just cause" for the extension.

- Section 404(m) should specify that the right and opportunity of other federal agencies to comment upon 404 permit applications is subject to the time specified for <u>final</u> permit decision. Section 404(m) and (q) should further provide that "comments" upon 404 permit applications must be based upon "criteria" and "standards" established by the commenting agency that implement clearly defined statutory authority and are not inconsistent with the 404 program.

- Where "comments" upon 404 permit applications include recommendations for <u>affirmative action</u> to be undertaken by a permittee (<u>e.g.</u>, mitigation, compensation, or enhancement), the recommending agency should be required to show that the

action (i) will achieve significant benefits for resources within the statutory authority of the commenting agency, (ii) is reasonably available to the applicant, and (iii) under the circumstances is feasible and practicable.

- Other federal agencies should have no "right" to force referral of "unresolved" objections to the permit to higher levels of the agencies involved. Only the Corps of Engineers, as the permitting authority, should have the "option" to seek referral or to grant the permit.

- Specific provision should be made to confirm that the final permit authority under Section 404 remains with the Corps of Engineers, limited only by the EPA's Section 404(c) "veto" authority.

We urge the Subcommittee to expand its examination of the Clean Water act to include a review of the present Section 404 permit program. We pledge to you any assistance that you may require in addressing this most important area of concern to our nation's ports.

Sincerely,

J. Ron Brinson

J. Ron Brinson
President

Alfred Hammon

Alfred Hammon
Chairman, AAPA Committee
on Harbors and Navigation

Mr. McNULTY. Please proceed.

TESTIMONY OF ALFRED HAMMON, CHAIRMAN, AAPA COMMITTEE ON HARBORS AND NAVIGATION AND SUPERVISOR, HARBOR PLANNING, PORT AUTHORITY OF NEW YORK AND NEW JERSEY, ACCOMPANIED BY PETER GATTI, COUNSEL FOR GOVERNMENT RELATIONS

Mr. HAMMON. Good afternoon, Mr. Chairman.

Mr. McNULTY. The floor is yours.

Mr. HAMMON. Thank you, sir.

Mr. Chairman, and distinguished members of the subcommittee, my name is Alfred Hammon. I am appearing here today as chairman of the Committee on Harbors and Navigation of the American Association of Port Authorities.

With your permission, I would like to omit certain elements of my statement with the request that they appear in the full transcript as part of the record.

Mr. McNULTY. It has been made a part of the record.

Mr. HAMMON. Thank you.

I would like to express AAPA's appreciation at the opportunity to testify here today in the consideration of H.R. 3282, the "Water Quality Renewal Act of 1983." This bill proposes water quality amendments and changes in the section 404 program and other matters relating to dredged material that will have a direct effect upon ports and their navigation needs.

In this testimony, the AAPA wishes to comment the subcommittee's recognition of the need for changes in the 404 program and to express support for a number of features in H.R. 3282. We also wish to identify other sections of the bill that are of concern and as to why AAPA requests change.

The AAPA supports the approach taken in proposed section 303(c)(2)(B), page 7, of allowing States flexibility in revising water quality standards to allow less restrictive uses based upon realistic attainability limitations. The AAPA feels, however, that such flexibility should also apply where existing water quality standards were established on the basis of insufficient information regarding naturally occurring parameter levels, requirements for environmental health, or where a change in designated uses is sought by a State for economic, governmental, commercial, social or other "public interest" reasons. This type of latitude is essential for the orderly planning of future growth and development.

AAPA is also concerned about the proposal in section 303(c)(2)(C), pages 7 and 8, that, where water quality exceeds the levels necessary to support uses designated in an existing standard, upward revision of the standard is required to preserve the higher quality of the water. Where a designated use is being met, this additional water quality level should not be imposed upon a State without any consideration of social, economic, navigation, and commercial needs and consequences.

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AAPA has a number of concerns about proposed section 319 relating to "Estuaries." The definitions of the terms "estuary" and "estuarine zone" in section 319(e) are unclear. If, on the one hand, they are limited to waters having a measurable salinity content, as provided in section 104(n)(4) of the Clean Water Act, then section 319 would appear to apply to a very limited number of "estuaries," and it is difficult to discern the reason and need for the section. On the other hand, if extension of the term "estuarine zone" to include "the estuarine basin or estuarine watershed, consisting of the estuary and all tributaries that are within that basin of water" is in fact intended to include all fresh waters, it would include so many States that the program would be unworkable. If there are existing needs for this type of management in specific areas, they should be identified and disclosed to allow an informed evaluation of and comment upon the proposed new section.

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Given that estuaries frequently sustain port activities, we believe that any true "comprehensive master plan" must also consider economic, commercial, navigation, or trade needs. The failure to consider such port-related concerns has been a fundamental problem with "standard-setting" in the past. It has often resulted in unrealistic and one-sided standards that fail to take into account important elements of the total "public interest" that should have been considered.

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Under the proposed language, even if there will be no unacceptable adverse effects from the discharge, a permit applicant must still show that there is no practicable alternative which will have less adverse effect on the aquatic environment and will not have other significant adverse environmental consequences. AAPA feels that this further showing is unnecessary and inappropriate. The consideration of alternatives should not be required where a discharge will not have an unacceptable adverse effect. In that event, the discharge should be allowed. It is in cases where adverse effects would be produced that consideration of alternatives becomes crucial. The consideration becomes a fundamental part of the determination of acceptability of the discharge from the standpoint of the overall public interest. In that determination there should be no bias against the aquatic environment as a disposal medium. The recent scientific evidence and experience indicates equal consideration should be given to all disposal options.

AAPA supports a number of the changes proposed in the amendment to section 404(q). The general tightening of the time limits for comment by other Federal agencies and for elevation of a disputed decision to issue the permit, has been long overdue. AAPA would, however, urge the committee to make certain modifications in the proposed language.

First, the language should clarify that the interagency notice required to be given by the district engineer of the filing of a permit application must be within the 15-day period specified in section 404(a) for issuance of the public notice. Any further delay in the giving of such notice would unnecessarily extend the time for permit review, decision and coordination.

Second, the reference to "the heads of other appropriate Federal agencies" is vague and could lead to disputes as to what other Federal agencies are appropriate. The other agencies should either be specified, or their apropriateness should be determined by the Secretary of the Army.

Third, other agencies should not have a right to an automatic extension of the comment period for an additional period of 30 days. The right to the extension should be allowed only for just cause.

Fourth, the AAPA is concerned about the requirement, page 16, line 20 and page 18, line 10, that the district engineer and division engineer give full consideration to the comments of other Federal agencies. This implies that greater consideration will be given to these comments than to other relevant factors in the permit process. AAPA would recommend that this provision be deleted, or else that the phrase "along with all other relevant factors and information" be added to these two sections to make clear that full consideration is to be given to all pertinent information.

Fifth, the Administrator, the Secretary of the Interior, and the Secretary of Commerce should not have an automatic right of elevation of a dispute simply upon request. The right to request elevation should be allowed only for narrowly defined reasons, such as for insufficient interagency coordination at the district level, development of significant new information not previously available, or the need to resolve environmental issues of national importance requiring policy level review.

These are limitations contained in the current memorandums of understanding executed between the Secretary of the Army and the heads of these other Federal agencies, and they reflect the recommendations of the Presidential Task Force on Regulatory Relief for simplifying the 404 permit process. We believe these limitations should be continued.

This concludes the AAPA testimony on H.R. 3282. We have tried to offer constructive suggestions for changes that the ports of this country feel are clearly needed. We do not comment from the standpoint of an idle observer. Ports are involved day in and day out with the 404 permit process. Our appreciation of its shortcomings is based upon direct experience.

In an effort to offer a sense of direction to the basic structure of the 404 permit program, AAPA has prepared a more comprehensive statement of principles that was contained in a letter to Senator John Chafee dated April 18, 1983. We strongly feel these principles should guide and govern any amendments to section 404.

A copy of this letter is attached to my testimony for inclusion in the hearing record. These principles entail no sacrifice of environmental protection, but they would achieve a more manageable, workable, and balanced regulatory program. We ask that they be reviewed and carefully considered by the members of the committee in these Clean Water Act hearings.

Thank you.

Mr. McNulty. Thank you, Mr. Hammon.

Had you proposed to testify, Mr. Gatti?

Mr. Gatti. No, I had not.

Mr. McNulty. On page 2 of your testimony, Mr. Hammon, talking about section 303(c)(2)(C), you said that where the water quality exceeds the levels necessary to support use and designating an existing standard that there should not be an upward revision of the standard to preserve the high quality of water. Why not?

Mr. Hammon. You are referring to the bottom of the page, sir?

Mr. McNulty. At the bottom of the page.

Mr. HAMMON. What we are saying is that upgrading should not occur unless there is also consideration of social, economic, and commercial navigational needs. There are instances where it might be appropriate to upgrade, and there might be instances where these other factors should be considered in a decision for such upward revision.

We would not be opposed, per se, to the upward revision. We would simply ask that these other factors be considered in such a step.

Mr. MCNULTY. You are suggesting, then, there might be social, economic, navigational, or commercial needs of a nature that would make it appropriate that the quality of the water be somewhat reduced?

Mr. HAMMON. It could be, sir. For example, in a harbor where elevation of the quality of water to say, recreational swimming levels, was comtemplated, the commerce of the harbor could be impacted. This might be a situation where, you certainly would want to consider those factors in deciding upon the wisdom of elevation.

Mr. MCNULTY. Mr. Stangeland?

Mr. STANGELAND. Thank you, Mr. Chairman.

In your discussion of water quality standards, you mentioned the need to provide a mechanism in 303 to allow change in the designated uses of a water body. If the existing law and regulations were left in place, are they adequate to address your concerns?

Mr. HAMMON. If the existing mechanism——

Mr. STANGELAND. Existing law and regulations were left in place.

Mr. HAMMON. No. As a matter of fact, I think we are quite pleased that the bill does have some mechanisms for change. We are only emphasizing the fact that the bill should include full consideration of social, commercial, economic, and navigational factors in deciding such change.

For example, in Section 303(c)(2)(B)(iii), a less restrictive water quality standard requires "substantial and widespread adverse economic and social impact." This suggests a need for nearly catastrophic circumstances. There are significant adverse impacts to justify revisions below such a level that warrant consideration.

Mr. STANGELAND. So you would like to see some changes in section 303 then.

Mr. HAMMON. Yes.

Mr. STANGELAND. But perhaps not to the extent the legislation addresses?

Mr. HAMMON. One of our standing concerns here and in previous testimony has been a need for more consideration of economic commerce, trade, and navigation factors in the matter of aquatic disposal of dredged materials as these affect the total public interest.

Mr. STANGELAND. On page 5 you express concern about the definitions of the term "estuary" and "estuarine zone" and that estuarine zone would concern me as well because Bemidji would be an estuarine zone to New Orleans and the Gulf of Mexico.

Mr. HAMMON. Chicago might also?

Mr. STANGELAND. Well, yes, I think it would be.

Mr. HAMMON. That has been the concern expressed by some of our members.

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Mr. STANGELAND. If the definition was limited to waters of a certain salinity, would that limit the concern of AAPA?

Mr. HAMMON. It would certainly narrow the geographic scope. At least it would confine participation in comprehensive master planning to those States that generally are adjacent to the harbor and port area, and thus would hopefully have a more direct concern with the outcome of the plan.

What would be of great concern could be "way up-river" interests far removed from the port and harbor benefits of the plan in contrast to the surrounding States.

Mr. STANGELAND. If there were no legislative changes in section 404 of the act, what is AAPA's views of that provision and existing regulations?

Mr. HAMMON. We have a series of problems, some of which have already been covered in this statement. Perhaps I could quickly go over some of them.

One is that we would like to see more use of general permits, especially for maintenance dredging. We also continue to be concerned over the possible timing and scope of comments of the various other agencies on permit applications, comments which may not always be pertinent or within agency mandates.

The elevation of permit disputes needs careful discipline to avoid undesirable delays. Disposal alternatives should be explored only when aquatic disposal would result in unreasonable degradation of the marine environment..

Extensions for additional review time should be limited to just cause. We also believe that longer permit periods could be allowed in certain instances. A more balanced approach between consideration of environmental and economic factors in the issuance of dredged material disposal permits if also needed. Some of these are expressed, in the AAPA statement of principles that has been appended to this statement.

Mr. STANGELAND. OK.

Mr. HAMMON. They will be made available for you.

Mr. STANGELAND. Very good. Thank you.

Mr. MCNULTY. Mr. Hammon, Mr. Gatti, thank you for your testimony here this afternoon.

Mr. GATTI. Thank you.

Mr. HAMMON. Thank you, Mr. Chairman.

Mr. MCNULTY. Kenneth Spear and Frank Browne are the next two witnesses, but I am sorry to say that the two lights on the clock—are you Mr. Spear—have told us that we must cast a record vote. We have got about 9 minutes to do that.

If you and Mr. Browne would not mind staying here, I think Mr. Stangeland and I can be back here in 15 minutes or less. We apologize for the delay.

[Recess.]

Mr. MCNULTY. Well, our much-recessed meeting will reconvene. We will begin with you, Kenneth Spear, from Infilco-Degremont, Richmond, Va. We are sorry for the many delays today and are grateful for the many hours that you have been here. The floor is now yours.

TESTIMONY OF KENNETH SPEAR, INFILCO DEGREMONT, RICHMOND, VA., ON BEHALF OF WATER & WASTEWATER EQUIPMENT MANUFACTURERS ASSOCIATION, INC.

Mr. SPEAR. Thank you, Mr. Chairman.

Mr. Chairman and members of the subcommittee, my name is Ken Spear of Infilco Degremont. I currently serve as a board member of the Water & Wastewater Equipment Manufacturers Association, Inc. [WWEMA]. I am very pleased to have the opportunity to offer the association's view about the state of America's clean water program. We recognize and appreciate the role of your committee and its excellent staff in shaping the important water pollution control policies of this country.

WWEMA is an association comprised of major corporations that develop technology, manufacture and supply equipment, materials and services in the water and wastewater industry. At the outset, we wish to emphasize that our organization carries a very positive attitude about the accomplishments of the clean water program and, in contrast to what the subcommittee may have heard from other sources, we remain optimistic about the opportunities that lie ahead.

This is not to say that we are unaware of the complexities and ambiguities of problems that have plagued the national effort to improve water quality. WWEMA is pleased, therefore, to be able to share the following views and comments with you.

In 1982 WWEMA submitted its recommendations concerning amendments to the Clean Water Act. We are providing for the record our full statement on our position on select sections of the Clean Water Act (attachment A). However, at this time WWEMA would like to voice its very strong opposition to EPA's proposed water quality standards.

First and foremost is the fact that the pre-1972 water quality approach was ineffective at reducing water pollution. Congress recognized this frailty and in its wisdom changed from "water quality" to "limits on pollutant" parameters, subsequently embodied in the Clean Water Act of 1972. Decidedly, the Federal Government superseded the State's role in setting, implementing, and enforcing water pollution controls in order to provide nationwide uniformity. Do we wish to return to "pollution shopping" where industry can measure the economic feasibility of plant location predicated on State standards?

The underlying principle of a water quality-based program is that the environment exists to receive waste, rather than the more reasonable approach of how to avoid release of waste. More importantly, the proposed changes are unnecessary. The current regulations governing State water quality standards strike a reasonable balance between protection and flexibility—insuring good water, while allowing States the freedom to make exceptions in those rate cases where the attainment of environmental goals would cause substantial economic hardship.

The proposed water quality standards would undermine this Nation's water pollution control efforts by allowing and encouraging States to weaken their water quality standards and would make economically hard-pressed States vulnerable to pressures from pol-

luting industries. Existing regulations have the flexibility necessary to make any exceptions needed in water quality standards without exposing the States to pressure from industry. In fact, since 1974 fewer than a dozen changes in State water quality standards were disapproved by EPA.

WWEMA believes that the proposed changes should be deferred for several years. Priority should be shifted to organizing a nationwide water quality monitoring program that will provide an accurate account of water quality levels for all bodies of water. Then, and only then, can informed judgments be made possible.

Finally, since States can only downgrade designated uses if they have not yet been attained, these proposals reward States and firms that have done a poor job of cleaning their waters by allowing and encouraging them to easily downgrade designated uses. Downgrading designated uses of water bodies will certainly increase the cost to process drinking water from the same source. States that have done a good job of setting and meeting water quality goals will not be able to downgrade.

According to recent polls, the American people are firmly in favor of a strong and continued water pollution control effort. If such drastic changes in the clean water program are to be made, we feel that the EPA should let them come from the Congress. One other area WWEMA strongly supports is the increased authorization level for the EDPA's construction grants program, as found in Representative James Howard's bill, H.R. 3283, calling for an authorization level of $4 billion for fiscal year 1984, $4.5 billion in 1985, and $5 billion for fiscal years 1986–88.

Mr. Chairman, in addition, I would like to express WWEMA's support for remarks that Mr. Goldman made previously concerning private construction and ownership of treatment plants. We feel that that is an issue that we also can support.

Thank you for allowing us to comment on this important subject. We feel confident that your committee will again provide sufficient oversight to make only the necessary adjustments and corrections to the act maintaining consistent scope and continued momentum toward achieving its environmental goals.

Mr. McNULTY. Mr. Stangeland?

Mr. STANGELAND. Thank you, Mr. Chairman.

Just to touch quickly on downgrading, are you saying that we ought to not allow downgrading?

Mr. SPEAR. Yes, sir.

Mr. STANGELAND. Isn't there a possibility that that can be counterproductive? I will just put it this way. We have got a Federal standard set and established, and the State sets its standard equal to or higher. If we don't allow any adjustment, don't we tend to have the State only set the minimum Federal standard, and not try to achieve the higher standard?

And if we allow them to adjust, and we had testimony yesterday where a State had set substantially higher standards at a time when there really wasn't a state of the art, they just kind of set up theirs real high, and the companies had made their best effort to achieve. They didn't achieve the State standards, but they were far superior to the Federal, and all they asked a State was to bring your designated use and standard down to where we are.

The State agreed to do that, and doesn't that encourage States to set a higher standard, to shoot for a goal, but if that goal isn't attainable in a cost-benefit fashion, then they can come down, just so long as they are superior to the Federal standard?

Mr. SPEAR. I believe, sir, that we are primarily interested in seeing that uniform standards be applied throughout the country, that industry is not allowed to go "pollution shopping," if you will. If a State chooses or has chosen to set some higher standards, then I think that it might be that they might be allowed to downgrade those, but as long as they maintain the Federal standard.

Mr. STANGELAND. Oh, yes. When we speak of downgrading, I think we are not talking about downgrading the Federal standards, unless, of course, those Federal standards have been set at a level that are just unattainable.

In your statement you support creation of a nationwide water quality monitoring program. Will you expand on your concept for this program and provide the committee information on cost scope and length of such a program that you believe is needed?

Mr. SPEAR. Yes, sir, we would be glad to. Very briefly, there is technology available to monitor the water quality of rivers and streams, and there is also the technology to do a computer mathematical modeling, that based on the data would allow a prediction of the effect on a river or stream from adding additional pollution. We feel that before the pollution is added, if we are going to go to water quality standards, that we need that data, and we would be glad to expand on that further.

Mr. STANGELAND. I gather that WWEMA is interested in maximizing the dollars available for the largest volume of construction that we can get on line and get going out there. Do you have any feelings for privatization, or any feeling for switching from the construction grants program to a loan program?

Mr. SPEAR. We would support a loan program, and the privatization, sir. We are interested in seeing that the program moves ahead as rapidly as possible, that the waters of this country are cleaned up as rapidly as possible, and if some other method other than a grant program can be used we are very much in favor of it. We are very much in favor of the privatization.

Mr. STANGELAND. Thank you, Mr. Spear. Thank you, Mr. Chairman.

Mr. MCNULTY. Mr. Daub.

Mr. DAUB. My ranking member asked my questions. I would just be clear in my own mind. You are saying essentially the rules and regulations currently in existence are adequate and reasonable and no change needs to be made?

Mr. SPEAR. Yes, sir.

Mr. DAUB. Thank you.

Mr. MCNULTY. Mr. Spear, staff has suggested to me that the standards to which you are objecting are last year's version, and that the stuff that is in the mill now may be a good deal more stringent. I think those are going to be along very shortly, and I commend them to your consideration. I would appreciate your views on this new draft, when it is known to you.

Mr. SPEAR. I would be glad to, sir. Thank you.

Mr. McNULTY. Mr. Spear, thank you very much. We are sorry for the long delay and consumption of your time here today, but the process would not admit anything otherwise. Thank you very much.

Mr. SPEAR. I understand. Thank you, sir.

[The following was received for the record from Mr. Spear:]

WATER AND WASTEWATER EQUIPMENT
MANUFACTURERS ASSOCIATION, INC.

Position Paper on the

1982 Clean Water Act Amendments

Legislative Goals

WWEMA fully appreciates both the effort and dedication of the Congress in securing the successful passage of PL 97-117. The signing of the construction grants reform bill marked a rededication of federal funding under Title II more toward environmental goals than a public works oriented program which tends to promote construction without regard to environmental results. The Clean Water Act in this reauthorization, however, does not require modifications anywhere near the magnitude of the construction grants amendments of 1981. Most of the problems still associated with today's clean water program result from the way in which the act has been implemented, not from the act itself. WWEMA believes the Clean Water Act including its overall goal to restore and maintain the integrity of the nation's water is fundamentally sound and does not require structural changes. It has been our experience in the past that any modification has resulted in a slowdown or backsliding of the entire program. The clean water program cannot afford further slowdowns and extensions of time if the industry is to maintain the quality, quantity, and technical expertise that presently exist.

However, if the Congress feels compelled to make minor adjustments to the act, then WWEMA suggests no change to the technology-based effluent standards and continued tight control of discharges containing toxic pollutants from either municipal/industrial sources. Technology should remain paramount to any water quality based control approach that might be advocated by some during this reauthorization. We further urge the Congress to view the tight control of toxic pollutants as an utmost urgent environmental goal. While we support technology-based effluent standards,

we also recognize that legislation cannot be tailored to a narrow base to cover all site-specific environmental conditions. Therefore, any variations requested of this type are a regulatory matter requiring no legislative input.

Extension of BAT Compliance Deadlines

The Clean Water Act requires industries to reduce their discharge of pollutants to water bodies by installing progressively more controls complying with the more stringent BAT requirements. In our opinion, the current BAT compliance date of July 1, 1984 cannot be met since the EPA is yet to issue BAT effluent limitation standards for direct discharges from 34 major industries involving 129 chemical or other toxic substances which require regulation under the act. This same tight compliance scheduling is present in the municipal construction grants program. However, in the 1981 Clean Water Act Amendments, the POTW secondary treatment compliance schedule was extended to 1988 for those POTW's experiencing reduction in financial assistance under the act or where changed conditions go beyond the control of the owner affecting the current compliance date. WWEMA agrees that the current BAT compliance schedule cannot provide for orderly industrial implementation by the 1984 deadline. We believe that an extension is warranted to a certain date between 1986-1988, as set by Congress.

It has been proposed to extend the deadline for issuance of regulations covering BAT effluent limitation guidelines to July 1984 including the national categorical pretreatment effluent limitation guidelines. WWEMA believes that the July 1, 1983 deadline should be maintained for major industrial categories such as organic chemical, pesticides, petroleum refining, etc. Maintaining the current compliance date for these industries would create an optimum impact on pollution and paralleling the water quality impact priority policy established by

Congress in P.L. 97-117 emphasizing projects that address water quality management considerations to achieve optimum water quality consistent with public health and water quality goals. We suggest the EPA be allowed to segment the issuance of these regulations with the major categories by July 1, 1983 and the balance by July 1, 1984.

NPDES Permit Life

Consideration has been given to providing for a ten-year NPDES permit life compared to the present five year. WWEMA believes that granting of said extension should be based on a demonstrated need by the permit holder. While we agree the extension of the permit term will reduce the annual permitting workload and provide more certainty for a long period making investments in pollution control more economical, the granting of such extension should not be a common or routine practice without a demonstration of need. A ten-year permit covers a long time which, as we have observed from the past, can include a multitude of national trend changes in financial, social and environmental priorities.

Civil Penalties

Section 309 provides the administrator with authority to administratively assess civil penalties up to $10,000 per day. WWEMA supports this provision as the minimum level to be levied upon a violator, provided civil penalties are enforced equitably between municipal as well as industrial violators of the Clean Water Act.

# # #

Mr. McNULTY. Our next witness is Frank Browne of the American Society of Civil Engineers and the chairman of the professional coordination committee, accompanied by Clyde Wilber, member of the professional coordination committee, will make the last presentation of the day.

Messrs. Browne and Wilber, the same apology to you; I know you spent long hours here today, and we are sorry that the process has eaten up as much of your time as it has. I had a client once that was given 25 years, and as he left the courtroom he said, "That guy is getting mighty reckless with other people's time." And I kind of feel like maybe that would be an appropriate thing for us to say to you here now. In any event, the floor is yours.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

COMMENTS ON THE CLEAN WATER ACT AMENDMENTS OF 1983

PRESENTED TO THE

SUBCOMMITTEE ON WATER RESOURCES
COMMITTEE ON PUBLIC WORKS AND TRANSPORTAITON

NOVEMBER 2, 1983

BY

FRANK BROWNE, PH.D., P.E.
CHAIRMAN
PROFESSIONAL COORDINATION COMMITTEE
AMERICAN SOCIETY OF CIVIL ENGINEERS

American Society of Civil Engineers

Members of the American Society of Civil Engineers (ASCE) do not just design buildings and bridges; many ASCE members are environmental engineers actively involved in the design and operation of municipal and industrial wastewater treatment plants. They provide the public with a safe water supply, and they protect them from hazardous wastes. ASCE members perform conprehensive nonpoint source and watershed management studies. They also perform water quality studies of lakes, streams and estuaries. ASCE members, therefore, play a primary role in the environment while working in consulting firms, industries, universities, and governmental agencies. A large percent of the 92,000 ASCE members are involved in environmental affairs. It is this involvement that brings us to these hearings on the Clean Water Act Amendments.

Primary Areas of Concern

The primary areas of concern in the Clean Water Act Amendments include:

- Nonpoint Sources
- Construction Grants Program
- NPDES Permits
- Enforcement/Civil Suits
- Operator Training

Nonpoint Sources

Discussion

Nonpoint sources of pollution include all pollutant sources related to rainfall, stormwater runoff, soil erosion and groundwater movement. Typical nonpoint sources include:

agricultural runoff
construction erosion and runoff
urban runoff
roadway runoff
septic tank effluents and
streambank erosion.

In order to properly manage nonpoint source pollution, we must first evaluate the magnitude of the nonpoint source problem. We must look at the magnitude of three elements of the problem:

1. What is the magnitude of nonpoint source relative to point sources?

2. What is the magnitude of the impact of nonpoint sources on water quality?

3. What is the magnitude of the nonpoint source clean-up effort needed?

Point vs. Nonpoint Pollutants

It is estmated that more than half of the pollutants reaching our waters are from nonpoint sources. Agricultural activities cause an estimated 5 billion tons/year of topsoil erosion. The total suspended solids concentration in some urban runoff is 100 times the concentration in raw sewage. The lead concentration is sometimes 1000 times greater than the lead concentration in domestic sewage. Livestock produce 1.2 billion tons of wastes each year.

From a quantity viewpoint, the magnitude of nonpoint sources are significant.

Impact on Water Quality

The impact of nonpoint source depends on the receiving water. In general, nonpoint sources have a minor impact on small and medium-size streams; they have a significant adverse impact on lakes, impoundments, large slow-moving streams, and sensitive areas. Since they are caused by rain events, nonpoint sources usually occur during high flow conditions and are flushed out of the stream system. Poor water quality conditions occur for small periods of time. The recently completed EPA Nationwide Urban Runoff Program (NURP) concluded that nonpoint sources from urban areas cause temporary violations of water quality criteria but, in general, do not adversely impact beneficial uses of the streams and rivers. The imapcts of nonpoint sources on stream biota are not well documented because the NURP studies and most past 208 studies concentration on physical and chemical water quality parameters rather than on biological parameters such as macroinvertebrates and fish.

Lakes, unlike streams, are significantly adversely affected by nonpoint sources. Nonpoint sources cause siltation, loss of capacity, eutrophication, and impaired water supply. These problems are caused by excessive amounts of sediments, nutrients and toxics entering and remaining in lakes, impoundments and large slow-moving rivers.

The following table presents a comparison of annual point source and nonpoint source loadings for total phosphorus and suspended solids for seven watersheds:

Watershed	TOTAL PHOSPHORUS % Point Source	TOTAL PHOSPHORUS % Nonpoint Source	TOTAL SUSPENDED SOLIDS % Point Source	TOTAL SUSPENDED SOLIDS % Nonpoint Source
Lake Nockamixon, PA	49	51	2	98
Rivanna Reservoir, VA	9	91	<1	100
Lake Chesdin, VA	2	98	<1	100
Sylvan Lake, NJ	0	100	0	100
Etra Lake, NJ	0	100	0	100
Lake Wallenpaupack, PA	2	98	<1	100
Columbia Lakes, MD	0	100	0	100

The above values, measured for both small (several square miles) and large (1200 square miles) watersheds, indicate that nonpoint sources contribute almost all of the suspended solids (sediments) and most (51 to 100%) of the phosphorus to lakes.

Magnitude of Clean-Up Effort

If nonpoint sources were managed based on their relative magnitude versus point sources, and no consideration for their impact on water quality, the magnitude of the clean-up effort would be almost impossible and certainly not cost-effective. The nonpoint source clean-up effort should be based on a careful assessment of both the relative magnitude of the pollutant loadings and the impact on water quality. In many cases, such as lake watersheds, nonpoint source controls can be effectively used to restore water quality or at least maintain existing water quality. A study of Brown County Lake in Kansas indicated that implementation of low-till agricultural methods would reduce the sediment loading to the lake by about 56% from 5.6 tons/acre/year to 2.5 ton/acre/year.

Recommendations

From our very limited knowledge of nonpoint sources and their impacts on water quality, we can conclude the following:

1. We do not know enough about nonpoint sources: how they are generated, how to control them.

2. We do not have sufficient data on the impacts of nonpoint sources on aquatic life.

3. We do not have sufficient data to evaluate cost-effective controls.

4. We do not have sufficient site-specific data to properly evaluate whether a problem exists and how to solve the problem.

5. We do know that ultimately nonpoint source control is a local-state responsibility.

Based on these conclusions, the following recommendations are made:

1. Set up a National Commission on Nonpoint Sources to develop a nonpoint source management plan within 3 to 4 years. The plan should identify the real magnitude of the problem, identify realistic, cost-effective solutions, provide protocol for implementing the plan, and be national in scope. Congress should provide funds for this work.

2. EPA and SCS watershed management related programs should be continued at a much higher level of funding. A good example of an effective nonpoint source control program is the EPA Section 314 Clean Lakes Program. The Clean Lakes Program uses 50-70% federal funding to study and to implement lake restoration and watershed management projects.

3. EPA programs such as 205(J), 303 and 208 should be integrated to provide a maximum of 50 to 70% funding to states and local agencies to develop local nonpoint source management plans.

Construction Grants Program

Discussion

The construction grants program has created the impression that the Federal Government will pick up the tab for pollution control work. Local funding of projects, even if available, is often delayed in hopes of obtaining federal assistance.

The construction grants program has resulted in high-tech, sophisticated (and often over-designed) plants being built to serve a limited area that cannot or will not hire experienced operators to run them. Moshiem, TN, for example, is installing a pressure sewer system with over 200 pumps and is not making provisions for maintenance. Another city passed a sewage rate ordinance promising to collect money for the operation and maintenance of the wastewater treatment plant. This money, however, is being used to extend sewer lines while the plant deteriorates.

Too often the construction grants program has been used to construct expensive tertiary treatment plants without first performing a detailed water quality study of both point and nonpoint sources. Many tertiary plants, therefore, were constructed but no improvement in water quality resulted.

Recommendations

The construction grants program should be phased out over a period of nine to ten years. Congress should provide a reasonable level of funding to the program while it is being phased out.

NPDES Permits

Recommendations

Since both Epa and state resources are relatively scarce and should be used as efficiently as possible, permit terms should be extended from five years to ten years.

Enforcement

Recommendations

Present EPA enforcement is unrealistic; it has no credibility. EPA should enforce industries, municipalities, and nonpoint sources equally. EPA should set firm and realistic schedules, and EPA should strictly enforce these schedules.

Operator Training

Recommendations

EPA should provide funds and support for wastewater treatment plant operator training and permit writer training.

Mr. McNULTY. Please proceed.

TESTIMONY OF FRANK BROWNE, PH. D., P.E., CHAIRMAN, PROFESSIONAL COORDINATION COMMITTEE, AMERICAN SOCIETY OF CIVIL ENGINEERS, ACCOMPANIED BY CLYDE WILBER, MEMBER, PROFESSIONAL COORDINATION COMMITTEE

Dr. BROWNE. I have a written statement I would like to have put in the record. I am going to try to summarize it in my own words. I am Frank Browne, chairman of the Professional Coordination Committee of the American Society of Civil Engineers. I am also president of an engineering consulting firm in Pennsylvania.

The American Society of Civil Engineers has 92,000 members. Not all of these members are designers of bridges and buildings. I am going to give you some background so you can see why we are so involved in the environment.

A good percentage of the ASCE members are environmental engineers and scientists who are involved in municipal and industrial wastewater treatment, and in water supply and treatment. They are also involved in hazardous wastes and in nonpoint sources and watershed management studies, and even some engineers get to the point of being involved in ecological surveys of lakes and streams.

Civil engineers are not just engineers. In background they have knowledge and education in biology, chemistry and mathematics. You find ASCE members as consultants, like myself, and you find them in universities, you find them in industries, and in government.

Therefore, based on this background, you can see that the ASCE and their members have a primary interest and a very, very strong role in the environment. Today I would like to talk about several areas of concern. In general, we think the Clean Water Act is a good law. The areas of concern we are talking about would be nonpoint sources, construction grants program, the NPDES permit program, enforcement by EPA and the States, and treatment plant operator training.

Again I would like to emphasize that we think the existing Clean Water Act is a good act. I think I would like to see more refinement rather than an overhaul, of the Act. Every time there is an overhaul there is a tremendous delay in getting anything done over the next several years. One of the major changes I feel might be in the area of nonpoint sources.

I would like to go through each area just briefly. My main concentration will be on nonpoint sources. I want to just give a brief definition; nonpoint sources are caused by stormwater runoff and erosion. They are basically defined as anything that is not permitted under the NPDES program. Obviously, you are probably aware that you have agricultural runoff, construction erosion and runoff, urban runoff, and roadway runoff. Every time we build a highway or a roadway, it becomes a conduit right down to the stream. We have septic tanks and stream bank erosion, which is a natural process usually aggravated by development and agricultural practices.

To properly manage the nonpoint source problem we must look at the magnitude of the problem. This has been looked at over many years by different studies like the NURP program and 208 program. I think we have to look at the magnitude of the nonpoint source loading relative to point source. We have to look at the magnitude of nonpoint sources as they impact water quality, what harm is it really doing, and then the magnitude of the required cleanup effort.

As we look at point sources versus nonpoint sources, we find that some people estimate that half the pollutants entering our waters are from nonpoint sources. We find that agriculture erosion is equal to around 5 billion tons of soil per year, and livestock produces 1.2 billion tons per year of animal waste. There are all sorts of numbers I could go on and on about, but basically if you want to look at the magnitude of nonpoint sources it is a tremendous magnitude. It is significant.

Let's look at its impact on water quality. If you look at the impact, it really depends on what kind of receiving water we are talking about. If we are talking about small to medium size streams that flush themselves very quickly, many studies are showing that nonpoint sources are not a major water quality problem. Where they become a major problem is where you have large sluggish rivers, where you have lakes and impoundments or sensitive areas.

If you look at a comparison of point sources and nonpoint sources, you see that point sources are something that flow into a stream or a lake every day and can cause a problem. They are there all the time during low flow and high flow. If you look at nonpoint sources, you basically find that 80 percent of the loads

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come in 5 percent of the time, and usually when it is raining, obviously, and usually during high flow conditions, so you have a lot of dillution water.

Now, let's look at streams. If we look at the EPA nationwide urban runoff program, what we call the NURP program, they just recently came out with a final report which was asked for by Congress several years ago, and two major conclusions came out.

Remember, it is an urban runoff study even though many of the studies ended up being in suburban and urban areas, but one conclusion was that nonpoint sources cause temporary violations of water quality criteria. Nonpoint source produce low dissolved oxygen, high heavy metals and high suspended solids. Their second conclusion was that nonpoint sources do not adversely affect the beneficial uses of the streams. Thus we have nonpoint sources violating the laws but they don't really violate the stream use, at least when we are talking about medium and small streams.

One weakness I would like to point out as we have heard earlier when we talked about 316(a) studies and things like that is that one weakness of the NURP study and a weakness of the 208 program that went on in the past five to six years was that we spent too much time looking at water quality.

You have heard people today talking about water quality not being impacted. What happened in many cases, we have not studied the biota, the biology of the stream. We haven't looked at the macroinvertebrates or the fish carefully enough. You could have a stream with good water quality but poor biology.

Why do we have water quality? Mainly for the use of man and the biota. The big weakness in all of the EPA programs now is not having enough biological data.

Let's go into lakes for a few moments. Where I feel that we have a nonpoint source problem is in lakes, impoundments and in very large rivers.

The nonpoint sources cause lake siltation, loss of capacity, eutrophication as you are aware with the algae blooms and health problems and also the loss of recreational benefits.

You have impaired water supply when you have siltation in a lake or an impoundment. You have loss of recreational use and, of course, economic losses.

Nonpoint sources impact lakes due to sediments and nutrients like phosphates, nitrates, and toxics that stay in the impoundments. This is why nonpoint sources are so important. In a stream there is a tendency for the pollutants to flush downstream to a large river or to the ocean.

In the lake, the lake is like a big settling basin. It stays in the basin so there is very little flushing of pollutants. A comparison of seven watersheds that we have studied in Virginia, Maryland, Pennsylvania, and New Jersey actually show that nonpoint sources account for almost 100 percent of the sediments that go into it each year, and even when you have several sewage treatment plants you will find that almost 100 percent of the sediments come from nonpoint sources.

We found that roughly 50 to 100 percent of the phosphates come from nonpoint sources, so you can see that the real problem in lake impoundments and big rivers is going to be the nonpoint sources.

The magnitude of the clean-up effort is looked at too. It is impossible to clean up all the nonpoint sources. Some Congressmen in the past have been talking about having buffer strips throughout the country on every farm. I don't think this is a solution we want to go to. I don't think we can afford it.

We, basically, can come up with a management program if we find out where we have the problems, and can we even do anything about them, and where we can do something about them, try to fix them up.

We have some recommendations which are a little bit different than some of the proposals coming through Congress right now. We feel, No. 1, that Congress should set up a national commission on nonpoint sources, something similar to the National Commission on Water Quality.

Right now EPA is doing something very similar in-house. I think they have a couple million dollars to study past studies, but we feel something like this has to be more formal. We think there is a lot of data available. We don't want to see Congress funding many more studies. I think we need more of an evaluation of past studies.

We feel the Commission should develop a nonpoint source management plan within 3 to 4 years rather than 1 or 2 years as proposed right now.

Basically, they should identify the magnitude of the problem, identify cost effective solutions, and provide guidelines for the States for implementing this, and these guidelines should be technical and financial.

I think financial assistance is going to be very, very important in the future.

Obviously, we feel that Congress should fund this commission.

A second recommendation is that EPA and the Soil Conservation Service, [SCS] watershed management programs should be continued and should be given higher funding.

There are some real good nonpoint source watershed programs around, but every year they get killed and they get resurrected at the last moment or they are reduced in funding, and then we talk about creating new programs, when we really have some great programs on the books.

A good example is the EPA's Section 314 Clean Lakes Program. It is a program that uses 50 to 70 percent Federal funding, not 100-percent funding like many programs. to study the program, the problem, and then to actually implement changes. A lot of people think of the clean lakes program as a lake restoration program when actually more than half of the programs are watershed management-oriented. It just depends on the year and how EPA is feeling as to which ones they fund. Sometimes it is dredging, sometimes it is dredging in conjunction with cleaning up land use problems.

Third, as a recommendation we feel that programs such as Section 303, 208, and 205 should be integrated to provide funding for State and local nonpoint source activities.

We do believe that in concurrence with some sort of a commission we should have more money going to the States to identify

nonpoint source problem areas rather than coming up with implementation programs at this time.

Getting into the construction grants program, we feel that the program has created the impression that the Federal Government is responsible for pollution control work; that the Federal Government should pay for it all, but we don't think that is really the answer.

Some resulting treatment systems are too complex; they are much too big in many cases; they are overdesigned and they are energy-inefficient. They actually cost too much also.

Many tertiary treatment plants were built without evaluating the nonpoint source problems, so they were built with the idea that if we put in tertiary treatment with all sorts of chemicals, we will get a nice water quality, and we didn't get the water quality because nonpoint sources were the problem.

A good example is the Blue Plains Treatment Plant, which Mr. Wilber has actually worked on. This year they had a tertiary treatment plant that cost a lot of money, public funds; it works very well, but it hasn't solved the problem it was designed for and that was to avoid algae blooms.

In general what I found is that locally funded treatment plants are and would be simpler, smaller and cheaper. As a consulting firm, we work a lot with local clients who don't have money, and it is amazing how much cheaper you can design a treatment plant and build it for when you don't have the redtape and regulations or just the idea that you know there is a lot of money available.

We feel that to some extent the construction grants program should be phased out over a 9- to 10-year period.

You might want to give consideration to the low interest loan programs or even private approaches as we heard earlier today. That is a nice approach also.

It should be probably phased out as we know it now. If not phased out, it definitely needs some streamlining.

Just some quick comments on the NPDES permits. We feel since both EPA and the States have very limited resources, these resources should be put in an area that is really important rather than every 5 years reviewing permits, so we feel the permit period should be extended from five to 10 years.

You can have an intermediate review if need be so you can open them again, but they should be extended to 10 years.

Relative to enforcement, it all comes down to what enforcement. It used to be years ago that EPA and the State would enforce industrial discharges because you can close down an industry, and you couldn't enforce a municipality because you couldn't close them down. That has been corrected because in the last few years they don't enforce either one.

I think there is no credibility at all in the enforcement program. I find industries in Virginia say—that have heavy metal discharges, yet their permit makes them measure things like BOD and pH, no metals at all.

It is obvious to the regulatory agencies that they have heavy metal. It is kind of a laissez-faire program. We feel that there should be equal enforcement of individuals, municipalities and even nonpoint source areas.

We think that EPA should set realistic schedules and strictly enforce them. Sometimes they don't enforce schedules because they are just not realistic.

Last, we have operator training. I think we do need trained operators to care for the billions of dollars worth of equipment that the Government has funded so we feel that the EPA should definitely provide funds for operator training.

In summary, we really feel that the Clean Water Act is a good act. It doesn't need a lot of changes. It doesn't need higher enforcement penalties. It just needs people to do what the act says.

I do think it needs help on nonpoint sources. That was one weak area back in 1972 and it is good to see that Congress is going that route.

Mr. McNULTY. Thank you.

Mr. Stangeland.

Mr. STANGELAND. I have no questions.

Mr. McNULTY. Mr. Daub.

Mr. DAUB. Thank you, Mr. Chairman. Just a brief question.

I am interested in your view relative to the loan program since you recommend the phasing out of construction grants program.

Would you comment as well on privatization?

Dr. BROWNE. Well, for my committee I probably can't give you an opinion. My own opinion is, I am for the private approach.

I have seen for years other areas, whether it is trash pick-up, down in Gainesville, Fla., where they abolished municipal trash pick-up years ago and went to private pick-up and it is efficient and cheaper.

Studies show New York City could have gone for the private approach except for the union problem. It could have been done cheaper.

I do think it could have been done cheaper. I don't have all the facts that Mr. Goldman had, but just from reading his and other articles, I am definitely in favor of it strongly.

Mr. DAUB. Thank you for your comment. I appreciate your testimony.

Mr. McNULTY. Members of staff.

Then that, by my agenda, completes this portion of hearings on possible amendments to the Clean Water Act. We are grateful to you, Dr. Browne and Mr. Wilber. Again, we are sorry for the length of time you were here.

If there is nothing further, the subcommittee will stand in recess.

[Whereupon, at 3:25 p.m., the subcommittee recessed.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

THURSDAY, NOVEMBER 3, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:07 a.m., in room 2167 Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. The subcommittee will come to order, and we will continue our hearings on the Clean Water Act.

Our first witness for today is Maynard Stiles, director of public works, city of Memphis.

And, we have with us this morning our distinguished colleague from Tennessee, the Honorable Congressman, Don Sundquist, who we are offering the special privilege of welcoming you, Mr. Stiles.

Mr. SUNDQUIST. Thank you, Mr. Chairman.

I will try to be brief. I appreciate the opportunity to introduce this gentleman to this committee.

Mr. Maynard Stiles is director of public works for the city of Memphis, and he is here today to testify, as you know, with regard to revisions in the Clean Water Act, and related issues.

Mr. Stiles has had experience in both the private and the public sector. He has served as public works director for Memphis since 1978. Prior to that time, Mr. Stiles served the city of Memphis in a variety of positions, including director of sanitation services purchasing agent, administration, assistant to the public works director, and district superintendent for the sanitation department. He now serves as president of the Tennessee chapter of the American Public Works Association. He is a member of the board of directors of the Tennessee Municipal League, a member of the Metropolitan Sewage Association.

Mr. Stiles' experience gives him an in-depth understanding of the problems of our country's metropolitan areas, and the problems that they face in regard to Federal water pollution control.

I am sure his testimony today will be of value to the subcommittee. Let me extend a very warm thanks to Mr. Stiles for making this trip and sharing his experiences with this subcommittee.

Thank you, Mr. Chairman.

Mr. Stiles.

Mr. ROE. We thank you very much for your introduction.

Now, we would go to Mr. Stiles, if you will.

TESTIMONY OF MAYNARD C. STILES, DIRECTOR OF PUBLIC WORKS FOR THE CITY OF MEMPHIS, TENN.

Mr. STILES. Thank you, sir.

Mr. Chairman, members of the committee, I would like to extend my personal thanks for the opportunity to appear before the committee today. In addition to that, the appreciation of the city of Memphis, for the opportunity to express our views on amendments to the Clean Water Act.

In 1972, the U.S Environmental Protection Agency established secondary treatment regulations which required all wastewater to be treated to at least a level of 30 mg/l biochemical oxygen demand [BOD] and 30 mg/l total suspended solids [TSS].

These standards reflected numerical values which were believed to be obtainable by well designed, well operated and maintained secondary treatment systems.

When the Environmental Protection Agency imposed these categorical standards 11 years ago throughout the Nation, for the treatment of wastewater, there was an attempt on the part of that Agency to achieve the goals established by Congress in the shortest timeframe possible. Today, 11 years later, we have made dramatic strides toward achieving those goals, and at the same time, a tremendous amount of information has been gathered which is now ready for utilization in establishing more economical ways to achieve the desired goal of clean water.

The development of laws, regulations, and guidelines, utilizing the knowledge that has been gained over the last 11 years, can lead us on a path toward achieving our goal of clean water and, at the same time, achieve that goal in the most economical manner possible.

In accordance with current regulations, the city of Memphis constructed two wastewater treatment facilities, the first became operational in 1975, and the second in 1977. Both facilities were constructed with the assistance of Federal funds. Today, these plants consistently meet the required effluent permit limits.

While the city of Memphis consistently achieves the required level of treatment, our sewer-use fees have remained among the lowest in the Nation.

Although sewer fees paid by residential, commercial, and industrial customers in Memphis are quite low when compared to other cities across the Nation, they are a burden nevertheless; a burden that takes money out of taxpayers' pockets, a burden that raises the price of goods produced by industry.

In September 1968, the Tennessee Department of Public Health, Division of Stream Pollution Control, released a report entitled "Predicted Effects of Primary Treatment at Memphis on Water Quality in the Mississippi River." During the period the study was conducted, all of the city's wastewater entered the river untreated through four major interceptors. The report pointed out that "to date no information has been presented to indicate that a serious pollution problem exists in the Mississippi River below these discharges" even in an untreated state.

The report concluded by saying "the necessity for providing secondary treatment at Memphis, at the present time, appears unnec-

essary for the protection of water quality and downstream uses of the River," however, in compliance with the law we proceeded to construct and operate facilities capable of achieving secondary treatment.

The city of Memphis, whose sewer system serves the majority of Shelby County, because of its population and the number of industries served by the Memphis sewer system, was near the top of the priority funding list for the State and, therefore, Federal funds for construction of the two wastewater treatment facilities was readily available.

At the same time, other cities and towns across the State of Tennessee were and are faced with serious pollution problems that threaten the well-being of lakes and mountain streams. These cities and towns have been unable to address their treatment problems as local funds are insufficient to construct the needed facilities and their position on the priority funding list are too low to qualify them for Federal assistance; yet the impact of their effluent on the receiving waters is not only measurable, but highly negative.

Mandated secondary treatment in Memphis has resulted in significant Federal and local expenditures for construction and yet any improvement of the quality of the Mississippi River cannot be measured. At the same time, discharges from smaller cities and towns has continued to add to the demise of lakes and mountain streams throughout other parts of our State.

The average flow in the Mississippi River is some 353,000 million gallons per day, while the lowest recorded daily flow in history was approximately 91,000 million gallons per day. These are figures that were accumulated from the Corps of Engineers.

The assimilative capacity of the Mississippi River, at the lowest recorded flow in history which was reached in 1980, is in excess of 14 million pounds of BOD per day. Loading of approximately 8 million pounds is present in the river when the flow reaches the city of Memphis, leaving an additional assimilative capacity available in excess of 6 million pounds per day.

We are presently discharging into the river approximately 70,000 pounds per day from our treatment facilities, which equates to approximately 1.1 percent of the additional assimilative capacity.

I would point out the biochemical oxygen demand loading of the river before it reaches Memphis is not as a result of discharges from upstream cities and towns, but is rather primarily as a result of the natural environment, such as decaying vegetation, upstream from the city.

The discharge from our two wastewater treament facilities is currently 145 million gallons per day, and by using the flow of the river at the lowest recorded flow in history, this would equate to a dilution factor of 628:1, while at the average flow it would equate to 2,400:1.

The Mississippi River is the largest river in North America and obviously has a tremendous capacity to assimilate wastewater.

No one has the right to utilize all of the assimilative capacity of a stream, however, at the same time, a river is a natural resource like an underground freshwater aquifer or a natural harbor and that natural resource should be utilized. Certainly there should be

constraints, we should not allow the natural resources to be damaged, however, we should take advantage of those natural resources in a manner permissible without inflicting damage.

Utilization of our rivers and streams and their assimilative capacities can be a cost effective and environmentally sound solution to the problem of pollution. However, based upon existing laws, we have not been allowed to utilize this readily available natural resource.

Many other cities throughout the Nation are located on major inland waterways where secondary treatment facilities have been constructed, or are now being contemplated. It might be entirely possible that many of these cities where facilities have not been constructed, could design to achieve limits less stringent than the secondary requirement and, at the same time, improve water quality.

Preliminary surveys indicate there are over 100 cities located in 18 States across the Nation which could be affected if the Clean Water Act allowed for increased discharges based upon the assimilative capacity of the receiving major inland waterway.

Based upon the latest information published, in excess of $92 billion will be needed to provide funds for construction of sewage treatment plants and sewers to meet the needs of the existing population. Our preliminary survey indicates an estimated minimum of 10 percent of this amount could be deleted from the budget if the law were changed to utilize our natural resource and allow for treatment requirements based upon achieving clean water standards, as opposed to categorical standards.

In addition to the Federal savings, which could be achieved, our estimates indicate that if the city of Memphis were to reduce its level of treatment from the required secondary to a modified secondary level—70 percent removal—approximately $250 million, over a 20-year period, could be saved in operating expenses.

Assuming the savings to the surveyed 100 cities, based on their population, would be proportionate to the savings which could be realized by Memphis, their reduction in operating expenses would be approximately $3.5 billion over a 20-year period.

The advantages of ocean dumping on a case-by-case basis is being realized, as a result of amendments to the law.

I would submit that relaxing standards where the discharge is into a major inland waterway is a more attractive alternative than is ocean dumping. Considering the currents of the rivers versus ocean currents, the effects of tides, the effects on aquatic life, it is not unreasonable to expect that many of our major inland waterways are better assimilaters of waste than are the oceans.

It would appear to be critical that a practical approach, utilizing the information we have gathered over the last 11 years, for determining discharge standards for major inland waterways to be implemented.

Already the city of Memphis has detailed a proposal to study and confirm or disprove the effects of discharges of varying quality from the city of Memphis on the Mississippi River. The program would entail sampling on a weekly basis, numerous stations on the river. The analyses of those samples would include not only biochemical oxygen demand, but total suspended solids, dissolved

oxygen, and temperature, and also a variety of chemical compounds.

The quality of the effluent from the Memphis treatment plant would be carefully varied throughout the term of the study, and the resulting impact recorded. This study would be conducted by the city of Memphis, with funds being provided entirely by the city, however, the Tennessee Department of Public Health and the U.S. Environmental Protection Agency have agreed to carefully monitor the results.

The final level of treatment would then be determined as a result of the study findings after complete review by all interested parties.

We would not suggest or support any modification of the presently permitted pesticide discharge limits.

At this point in time, both the U.S. Environmental Protection Agency Region IV and the Tennessee Department of Public Health have endorsed the study, however, because current laws do not allow for even a temporary variance from secondary treatment, we have not been able to implement the proposed study.

It is clearly important, therefore, that laws and regulations be changed to allow the Administrator of the Environmental Protection Agency the flexibility to grant temporary and permanent secondary treatment variances to waste treatment plants, based upon the ability of the receiving stream to assimilate that effluent discharge without adversely affecting water quality.

The ability to allow secondary treatment variance on a case by case basis would certainly have far reaching effects.

Federal pollution abatement dollars could be beneficially reallocated so that real water quality threats could be more quickly eliminated.

Residential sewer use rates could decline as a result of decreased energy utilization and decreased operating expenses. There would be a reduction in sludge production, thereby reducing the cost to various communities of disposing of the sludges generated.

Treatment costs incurred by industries could be reduced, thereby resulting in less costly goods and services and having a positive impact upon gross national product and the ability to be more competitive at the international level.

All of the above can be accomplished while improving water quality in major inland waterways, and at the same time, continuing with concerted efforts to minimize priority pollutants in any discharge.

Certainly the industrial pretreatment program is useful in this regard, however, I would point out the city of Memphis implemented its own program with all industries discharging into the city system over 2 years ago which had the effect of improving the characteristics of waste received and the quality of our sludges.

We would strongly endorse that all local communities implement their own pretreatment program based upon characteristics of the waste to be received and the capability of the facility to properly treat the waste stream.

We would suggest that section 301(h) of our current law, public law 95-217, could be amended by simply including after the words "marine waters" the words "and major inland waterways."

We would not propose to change any other language of that section.

With this change, it is our strong opinion that the following would be accomplished:

One. In excess of 10 percent of the estimated Federal grant need could be eliminated.

Two. A major number of cities across the Nation could save in excess of $3.5 billion over the next 20 years in operating expenses.

Three. Residential, commercial and industrial sewer fees could be adjusted downward, thusly reducing the burden of fees on the taxpayers and making more funds available as spendable income.

Four. Industries could reduce their costs, resulting in less expensive goods and services, thusly having a positive impact on the gross national product, and placing those industries in a more competitive position in the international market.

All of the above could be accomplished with one change to the existing law based upon knowledge gained over the last 11 years, and at the same time, achieve our stated goals of a safe and healthy environment through the wise use of our limited resources.

Thank you.

Mr. ROE. I want to thank you very much for your substantive testimony. I do not have any questions.

Any questions of the gentleman?

The gentleman from Minnesota?

Mr. STANGELAND. I have no questions, Mr. Chairman, but I just want to thank the gentleman for some excellent testimony, something that should certainly be studied and looked at.

Thank you.

Mr. ROE. Are there any other questions?

Thank you very much.

Thank you, Mr. Stiles. I appreciate your being with us.

Our next group of witnesses is the sludge management panel of the American Clean Water Association, participating in that presentation, Mr. Larry Silverman, executive director, American Clean Water Association; Mr. Steve Campbell, Bio Gro Systems, Inc., Annapolis, Md.; Mr. John O'Neal, AD+SOIL Services, Inc., West Chester, Pa.; and Mr. N. Grove Teates, Wheaton, Md.

We want to welcome the panel to our committee, and we have your testimony, which will appear in the record in full. So, suppose we start out first with Mr. Silverman.

The full text of your prepared statements will appear in the record at this point.

[Statements referred to follows:]

TESTIMONY OF LARRY SILVERMAN ON CLEAN WATER ACT

Mr. Chairman, I am very grateful for the opportunity to testify about the many important issues surrounding the reauthorization of the Clean Water Act.

The American Clean Water Association was founded five years ago to represent a diversity of interests and disciplines united by a common commitment to clean water at an affordable price. Although most of our members are business or municipal people, we work closely with and consider ourselves part of the environmental lobby. We tend to represent innovative and alternative approaches to water and sewage management and finance. We see ourselves on the frontier of a changing water industry—a difficult and often uncomfortable outpost, but one that must be maintained. Our members include:

Sewer maintenance and repair companies, and those manufacturing products for the repair of existing structures;

Water conservation companies including manufacturers of low flow plumbing fixtures, consultants, irrigation companies and meter companies;

Engineering and other firms with a strong background in agronomy and soil science and experience managing wastewater through agricultural methods;

Practitioners of small scale, decentralized waste management techniques;

Trainers and operations specialists;

Water monitoring companies;

Media and public relations specialists with knowledge of water and waste issues; and

Financial houses with expertise in alternative finance.

My purpose here today is just to set out briefly some of the Association's views on the issues before your committee today. In general we:

1. *Oppose major changes to the 1981 municipal sewage treatment law.* Generally, the 1981 reforms to the sewage program have had a positive impact on sewage treatment planning and construction. The area of greatest concern to us is the elimination of Steps I and II grants, which has created many problems particularly in rural communities.

We would oppose at this time efforts to raise the federal grant share from 55 percent to 75 percent.

2. *Available funding.*—The sewage and water management industry is undercapitalized. We appreciate Congressman Howard's bill to raise grant money from $2.4 to 5 billion. However, we believe a Congressional policy is needed which encompasses not just EPA grants, but Farmers Home program and federal tax policy as well. Little real progress will result if Congress increases EPA grants and at the same time eliminates tax benefits which encourage private investment in wastewater systems. A lack of Congressional leadership is all too evident. In general, we concur with the testimony of Mr. Goldman of Arthur Young and Company one the subject of privatization. (Mr. Goldman is one of our members.)

3. *Sludge management.*—The sludge management provisions of the Senate bill (S-451) will greatly increase regulatory requirements while providing no clear decision making process. It represents the worst of two worlds. We need a simple, definitive regulatory process that protects the public and provides certainty to municipalities and contractors. Twenty states now make sludge management a part of their NPDES permits. This system seems to work well. Industry and the states look to EPA for information and guidance. The federal government must develop regulations that facilitate the movement of safe sludge derivatives in interstate commerce. In general, we need to navigate between over regulation and under regulation.

We need much more funding in the areas of demonstration projects, public education and operator training.

4. *Non-point source pollution control.*—In general, we support Mr. Oberstar's bill on this subject. We believe a clearer decision or arbitration process is needed to settle interstate conflicts. The Water Quality Act of 1965 may provide an excellent model.

Demonstration grants should be available to states, municipalities, and private organizations (profit and non-profit) who have something useful to offer in this field.

5. *Wetlands protection.*—We support the provisions in the Howard bill dealing with wetland protection. They are a necessary protection against unwise regulatory decisions that have been made or are threatened by the present administration.

6. *Pretreatment.*—It is time to get on with the job of pretreatment. The unregulated flow of industrial toxics into POTW's is a great impediment to clean water, economical utility operations and safe sludge management. We oppose the "opt out" proposals and other schemes to delay implementation of pretreatment standards by excessive regulatory changes.

We also oppose efforts to immunize indirect dischargers of non-toxic pollutants from federal enforcement actions. When a POTW is polluting the waters, EPA and the states should be permitted to take any steps necessary consistent with law, to abate the nuisance. If the best way to stop pollution is through disconnection of the industrial hook-up, so be it.

7. *Training.*—More funds should be authorized and appropriated in the field of operator training and information dissemination. We encourage the Investigations and Review Subcommittee to look into the manpower training situation today and to recommend broad reforms to this entire effort.

Thank you.

STATEMENT PRESENTED TO WATER RESOURCES SUBCOMMITTEE OF THE HOUSE PUBLIC WORKS AND TRANSPORTATION COMMITTEE. THURS., NOV. 3, 1983.

My name is Stephen Campbell and I represent Bio Gro Systems, Inc. Thank you for providing me with the opportunity to present information regarding land application as a means of removing sludges from waste treatment systems and simultaneously providing a beneficial re-use which is economically and environmentally sound.

Bio Gro Systems is a privately owned company with headquarters in Annapolis, Maryland, which specializes in the application of suitable sludges as fertilizer/soil conditioner to private agricultural land. Bio Gro Systems has operated over 30 successful land application projects in 9 states in its 5 years of operation. These projects range from several thousand wet tons to over 150,000 wet tons per year. In its 5 years of operation, Bio Gro has obtained land application permits for over 70,000 acres of productive farm land. Bio Gro Systems has a highly qualified technical staff of agronomists, soil scientists and project personnel as well as the specialized equipment required for a successful land application project.

Any evaluation of the potential for land application must include a realistic assessment of both positive and potential negative effects of sludge application. On the positive side, land application presents an excellent opportunity to recycle rather than dispose of a nutrient-rich material, i.e. sludge, and is thereby a positive environmental program. Because it adds substantial amounts of organic matter to many soils, a good land application program can reduce erosion potential in sensitive areas such as watersheds as compared to the erosion which may be experienced in conjunction with the use of conventional tilling practices and application of conventional fertilizer materials. Land application of sludges at agronomic rates, that is, at rates which satisfy the nutrient needs of the crops being grown, will provide substantial economic benefit to the recipient farmers, as may be demonstrated by the fertilizer value which is contained in the Blue Plains sludge currently being land applied by Bio Gro Systems in several counties in Maryland and Virginia. These values are based on the analyses of the sludge nutrient content over a period of 1½ years of operation. The $166.50 per acre figure represents the value during the first year after application. During subsequent years, additional nitrogen and phosphorus, as well as lime, will become available, although in smaller amounts. In addition to the direct economic benefit to the farmers who receive sludge, such application will also substantially improve the soil properties of the land so treated. The improved moisture holding capacity, tilth and nutrient holding capacity, are all of substantial benefit to the farming operation.

With all the positive effects I just mentioned, we frequently are asked during such presentations as I'm giving today—"then how have we gotten along without sludge all these years?" One of the reasons is inherent in the very question as posed. The potential negative effects of sludge land application center primarily around the lack of public knowledge and thereby, public acceptance of such practices. Although land application of sludges is increasing in this country, and I believe will continue to do so beyond the approximately 40% which is currently being returned to the land, many people remain uninformed and skeptical about land application. Public acceptability can be achieved by the dissemination of information at public hearings, public meetings, through newspaper articles, and particularly by field demonstrations which clearly show how a project is operated. Once the lack of knowledge has been overcome, it has been our experience that most objections on the part of the public tend to dissipate.

Two other potential negative effects should be mentioned in any discussion of sludge and land application. These effects center around aesthetic concerns and environmental concerns. A well managed land application program is in no way offensive either to the people who are participating in the program or to the neighboring communities. By careful attention to set-back requirements, by injecting sludges wherever possible beneath the soil surface, and by working closely with farm communities receiving the sludges, the impact of a land application program from an aesthetic point of view is virtually indistinguishable from normal agricultural operations. Both public acceptability and aesthetic concerns deal with intangible effects. Environmental concerns, on the other hand, center on the real characteristics of sludges. This is the area in which a tremendous amount of research, much of which was funded by the federal government, has been conducted during the last 15 to 20 years. The technical information regarding metals, pathogens and other potential contaminants has been well documented and is available to both the scientific community and to those who operate land application programs. However, much of this information is unknown to the public at large and must be interpreted and ex-

plained to people in order to overcome the third potential negative effect of a sludge application program—environmental concerns. Additionally, it is important that any land application program utilize technically competent people to manage such a program and thereby avoid any possible environmental problem. I would like to point out that at rates suitable for agricultural use, using appropriate sludges will have no adverse environmental effects. I would also like to read to you from the "Statement of Federal Policy and Guidance Regarding Land Application of Municipal Sewage Sludge for the Production of Fruits and Vegetables". This document is dated 1981 and is signed by the Administrator of the U.S. EPA, the Secretary of the U.S. Department of Agriculture and the Commissioner of the United States Food and Drug Administration. And I quote . . . "It is therefore, the position of the Environmental Protection Agency, the Food and Drug Administration, and the U.S. Department of Agriculture, that with the adherence to the guidance contained in Part II. of this document, the safety and wholesomeness of the fruit and vegetable crops grown on sludge amended soils will be assured." Part II. contains the technical guidance for land application of sewage sludges for production of fruits and vegetables.

In any consideration of land application, a number of factors need to be addressed to determine the viability of such an option. Some of these factors are—quality of the sludge itself, that is, is it considered acceptable for agricultural or the proposed use or can it be made acceptable by some additional process? In any off-site sludge handling system such as land application, transportation distances and therefore, costs, need to be assessed in determining the viability of the option. In many cases, particularly with land application in colder climates, wintertime and inclement weather, storage facilities are essential for the operation of the land application system. I have alluded to the need for public acceptance and this is an on-going function of any land application project. Each new area must be approached with the same degree of concern on the part of those who are land applying sludges. Many of the same questions will be asked repeatedly because people's concerns are frequently very similar but they must be addressed anew and adequately each time. The regulatory framework within which sludge application can proceed also must be considered in setting up a program. Most states either have or are adopting regulations and guidelines specifically dealing with land application of sludges. Although these vary somewhat in detail, and require slight modifications of field management to conform to them, the approach is generally very similar from state to state. I would like to point out here that our 5 years of operation have shown us a tremendous growth in the number of states which have comprehensive sludge management programs for land application. This trend is continuing and we believe strongly that it should be supported by the federal effort.

To give you an indication of what is involved in most state's permitting programs, I would like to describe to you the overall process by which a land application permit to apply sludge is obtained. The primary element in the overall program is a Project Design. Such a document sets up the geneal conditions and operating procedures for land application. Conditions such as setbacks from water sources, property lines, roads and dwellings, are included, along with a description of field operations, application rates, spill control plan and specific equipment to be utilized for the project. Once a Project Design has received approval from the regulatory agency, specific sites are then reviewed and submitted for regulatory approval. Sites are selected based on their location and suitability to receive sludges. Such factors as texture, slope, proximity to residences and waterways, are all onsidered in evaluating sites. Soil samples are taken from all sites to be permitted and the results of soil analyses taken in conjunction with the specific sludge analyses for that project are used to determine application rates. Individual maps of each field must be submitted to obtain site permits. These maps are from soil surveys and topographic maps as well as any available aerial photographs. They are clearly marked to enable the regulatory agency to make a field inspection. Such inspections are a routine part of every permit that is issued and sites may be modified based on the requirements of field inspectors from the regulatory agency. Application rates may be requested in permit applications but the final determination of an applicatioin rate is made at the regulatory level and is based on information provided by the applicant as well as by the guidelines adopted by the agency.

Despite the voluminous amount of information which has already been obtained regarding sludges and their properties and the effects of sludge on soils and crops, it is the position of Bio Gro Systems that continued research should be conducted and recommendations made based upon knowledge as it is gained in this area. We believe that the land application option for sludge management is both viable and necessary and needs a firm basis in research in order to continue to grow successfully. Such groups as the EPA, the USDA and TVA have provided invaluable information

both to municipalities and to those who manage their sludge output. We would strongly urge that support for such research be continued. We also believe that the most productive and beneficial role of the federal government in the area of sludge management should remain in the realm of providing guidance and technical informatioin to the various state agencies who are now and will continue to be responsible for land application programs. We believe that the state agencies are the best judges of the specific conditions required within their jurisdictions and should receive assistance from the federal government in the form of support for such programs.

We would also like to suggest that every effort be made to depoliticize sludge as an issue. The concept of reutilization which does not involve a disposal facility and all its concomitant problems should help in this effort. We would urge each of you as individuals to evaluate the programs within your jurisdictions in that light. Agricultural utilization of sludges is not disposal, even though it may represent disposal from the perspective of the municipality or facility gnerating the material. As we have described today and have demonstrated during our last 5 years of operation, land application of sludges can turn a problem into a resource.

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Sludge Disposal

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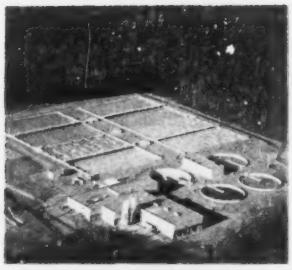
SLUDGE UTILIZATION—

BIO GRO Systems DOES MORE THAN PROTECT THE ENVIRONMENT,

WE IMPROVE IT.

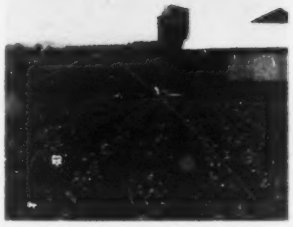
THE NEED IS INCREASING FOR SOUND SLUDGE DISPOSAL PROGRAMS

Sludge disposal has become a major environmental, operational, and economic problem for industries and municipalities. As waste treatment increases in compliance with environmental regulations, the quantity of sludge generated at treatment facilities also increases. As more sludge is generated and energy costs rise, the cost of many traditional sludge disposal methods is causing generators to look for ways of utilizing sludge as a resource rather than approaching it as a problem.

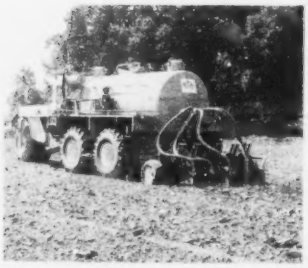


A COMPREHENSIVE APPROACH TO SLUDGE DISPOSAL THROUGH LAND APPLICATION

Treated and stabilized sludges from municipal and a variety of industrial systems are a valuable resource which can be safely, beneficially, and economically utilized as a fertilizer/soil conditioner. Bio Gro's staff specializes in such sludge disposal through land application in accordance with all EPA, state and local guidelines and recommendations. We are experienced in dealing with land owners, civic leaders, and regulatory agencies, and we have the expertise to coordinate the needs and desires of these diverse groups.



THE TOTAL RESPONSIBILITY PROGRAM



Bio Gro Systems is organized for efficient sludge disposal. Our staff of skilled professionals combines many years of agronomic, engineering, and wastewater treatment experience in a variety of methods of sludge handling. This includes liquid, cake and composted sludges handled with pumps, loaders and dredges. Projects with which we have experience include: lagoon, clarifier, and digester cleaning, both one-time and long-term; feasibility studies, and consulting services for any or all stages of sludge disposal. Bio Gro can determine the most effective program for your specific sludge disposal needs.

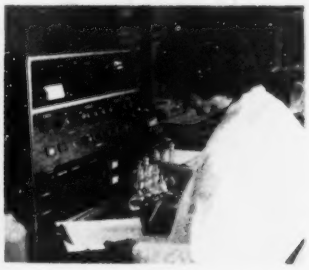
We call our program "Total Responsibility."

PLANNING

Bio Gro provides the information and expertise needed for handling the complete sludge disposal operation. Our staff prepares cost-effectiveness analyses, proposed operating budgets, public relations management and works closely with federal, state and local regulatory agencies. Project planning also involves integrating farm crop rotations, evaluating proposed truck hauling routes, interfacing with treatment plant operations and personnel and scheduling time frames for completion.

PERMITTING

Bio Gro agronomists locate land and secure owner consent for land application sites suitable for the program. They implement an educational effort within the agricultural community to insure continued favorable response; have sludge and soil samples analyzed to determine proper application rates; and, with other members of Bio Gro's staff, prepare permit applications for submission to appropriate regulatory agencies. This program includes all specialized engineering and technical data required.



OPERATING

Bio Gro owns and maintains a large fleet of sludge hauling and spreading equipment. This equipment is capable of operating over most types of terrain, even under marginal weather conditions. Sludge is land applied by high flotation, low compaction vehicles, specifically designed to spread liquid and cake sludge while protecting soil structure. Bio Gro also has an extensive inventory of high solids ratio pumps specifically designed for hard-to-handle sludges. This equipment allows Bio Gro to be flexible and immediately responsive to our client's needs.

MANAGING

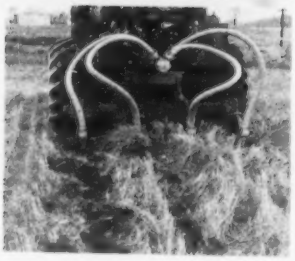
A Bio Gro Project Manager coordinates all phases of the sludge disposal program with the client, farmers, and land owners. The Total Responsibility Program encompasses the variability in sludge quantity and quality as well as the agronomic constraints of good crop management. A Bio Gro agronomist works closely with farmers to apply sludge in accordance with cropping schedules and fertilizer needs. If required, field crews can operate 24 hour shifts, 7 days per week. Equipment is maintained on-site where possible.

MONITORING

All results of sludge and soil testing are entered into permanent records. Using these data, the amounts of plant nutrients and other sludge constituents being applied to each site are calculated. This information is compiled into a system used to evaluate and plan the projected use for the site within guidelines established by the U.S. EPA, state, and local regulatory agencies. Detailed reports are filed by Bio Gro Systems as mandated by these agencies.

BIO GRO SYSTEMS

RESPONSIBLY & EFFICIENTLY MEETING YOUR SLUDGE DISPOSAL NEEDS



A sound land application program involves the agricultural and local community from its inception. The Agricultural Extension Service, Soil Conservation Service, civic leaders, and informed farmers in the area are included in planning and site selection. The capacity of sites to receive sludges varies with a number of soil, plant, and climatic factors.

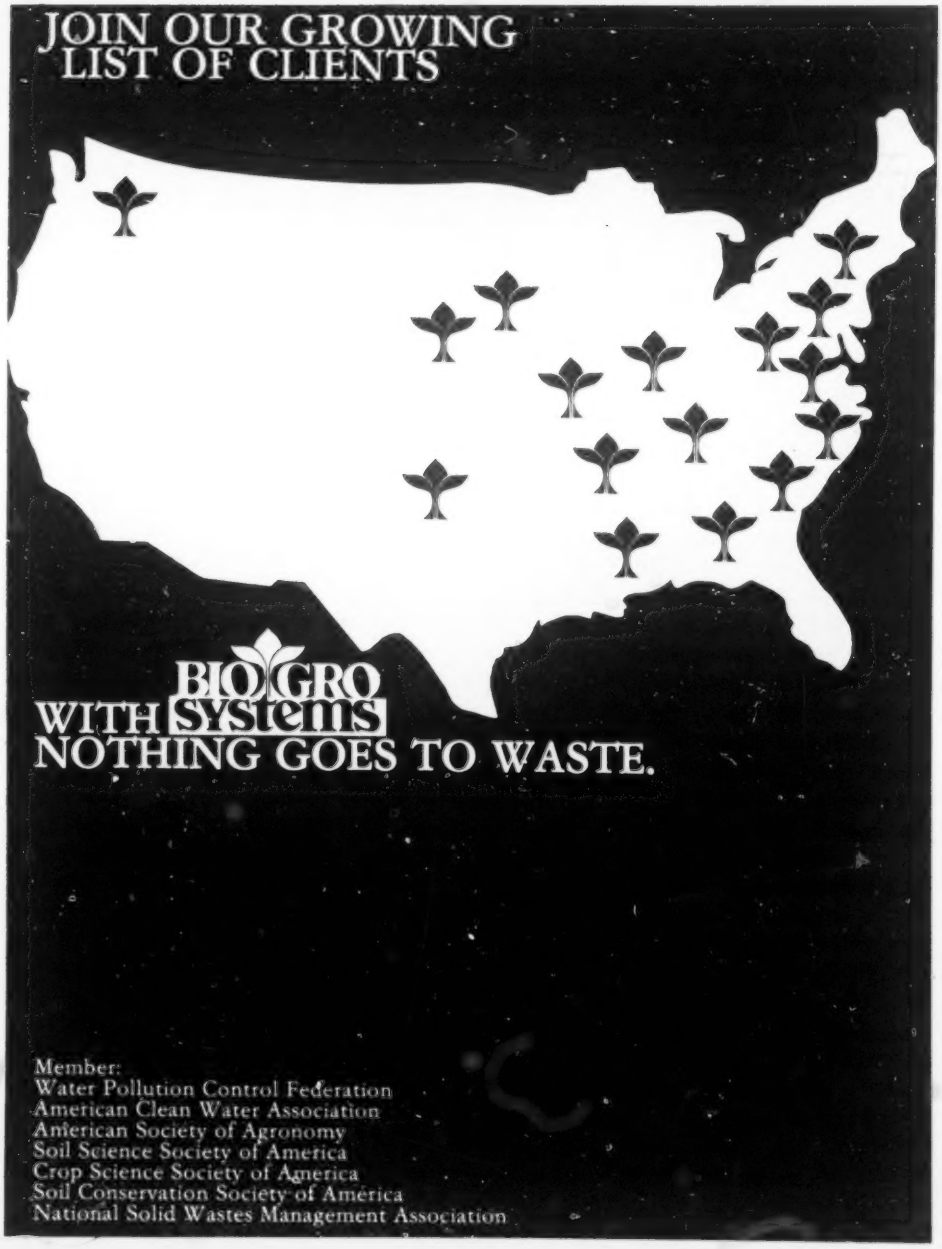
The suitability of a site is a function of the physical, chemical and mineralogical characteristics of the soil as determined by laboratory analyses and site considerations for each field. Consideration is given to texture, cation exchange capacity, (CEC) available micro- and macro-nutrients, soil pH, and any other soil properties which will influence application rates. Other factors to be considered are: landscape features (e.g., slope), proximity to surface and ground water, as well as soil parent materials, density and moisture holding capacity.

Sludge which is to be land applied must be classified as non-hazardous by the extraction procedure (EP) toxicity test as defined in the Federal Register (Part 261, sub-part c, pars. 261.20 - 261.24.) Land applied sludge must also be stabilized to reduce pathogen content and to make it more biologically inert; this is best accomplished by digestion (aerobic or anaerobic), composting or lime treatment.

Solids content of sludges varies from batch to batch, with composition data evaluated on an oven-dry solids basis. The following parameters are required to develop recommendations for application rates on agricultural soils: percent solids, total nitrogen (N), ammonia (NH_3), nitrate (NO_3-N), phosphorous (P), potassium (K), copper (Cu), zinc (Zn), nickel (Ni), lead (Pb), and cadmium (Cd).

Established principles of crop yield goals, soil testing and fertilizer recommendations are used in conjunction with sludge characteristics to determine suitable application rates. The annual rate of sludge addition is usually based on meeting the nitrogen requirement of the crop to be grown, which avoids leaching of nitrate-nitrogen into ground water. Entry into the human food chain is prevented by restricting cumulative addition of heavy metals (Cu, Zn, Ni, Pb, and Cd) to amounts well below phytotoxic levels. In addition, maintaining the soil pH prevents plant uptake of these metals. Thus, a well-managed agricultural site has the potential for repeated sludge application, depending upon the most limiting metal factor.

Complete record keeping is essential to a well-managed land application system. Representative composite sludge samples are analyzed regularly for nutrients, heavy metals, and other parameters. These analyses are used to calculate the amounts of various sludge components being applied to each site. Complete and accurate field records of gallons applied, dates and fields utilized are essential to these calculations. Besides reporting to regulatory agencies, a sound land application program maintains contact with the farmers involved in the program. The application of sludge is integrated into their fertilizer programs to insure its continued agronomic success.


JOIN OUR GROWING
LIST OF CLIENTS
BIO GRO
WITH Systems
NOTHING GOES TO WASTE.
Member:
Water Pollution Control Federation
American Clean Water Association
American Society of Agronomy
Soil Science Society of America
Crop Science Society of America
Soil Conservation Society of America
National Solid Wastes Management Association

Mr. ROE. Please proceed.

TESTIMONY OF PANEL CONSISTING OF LARRY SILVERMAN, EXECUTIVE DIRECTOR, AMERICAN CLEAN WATER ASSOCIATION; STEVE CAMPBELL, BIO GRO SYSTEMS, INC., ANNAPOLIS, MD.; JOHN A. O'NEAL, VICE PRESIDENT, AD+SOIL SERVICES, INC.; & GROVE TEATES, N. GROVE TEATES & ASSOCIATES, INC.

Mr. SILVERMAN. Mr. Chairman, thank you for this opportunity to testify.

My name is Larry Silverman. I am executive director of the American Clean Water Association. I will be very brief. You have our written statement.

Our association occupies a middle ground between environmental organizations and business groups. We are part of the environmental lobby, most of our members are business or municipal people. We are strong supporters of clean water and tough regulation, and also we are very concerned about the costs of things. We do believe that with better technology and better approaches to financing and management we can have very high standards, fishable, swimmable waters at a reasonable cost.

I have set forth in my testimony some of our positions, and I would ask, with the chairman's permission, to elaborate on that in the next week or two, some of the other issues that may come before the committee.

But the subject before us today, the one we would like to bring this committee's attention to, is sludge management. As you know, Mr. Chairman, the Senate passed a rather comprehensive or at least lengthy provision on this subject and I believe it is accurate to say that they did not hear from anyone in the sludge management industry. I knew that this committee, when its attention was brought to this fact, would respond in a different way. I very much appreciate this opportunity.

The three gentlemen we have here represent three of our members and I think they are three of the more responsible people in this business. They are very familiar with the real problems and difficulties of appropriate sludge management, and I think they understand how to do it safely. Although they each have a different approach, what unites all of our members is the belief that sludge is not a disposal problem. That is not something to get rid of but that really, if properly managed and produced, is an asset. These are all three asset managers.

I would ask permission, Mr. Chairman, to reverse the order of the program and have Mr. Grove Teates of N. Grove Teates & Associates, Inc. of Wheaton, Md., testify first, followed by Mr. O'Neal and the Mr. Campbell.

Mr. ROE. No objection, so ordered.

Suppose we hear from Mr. Teates.

Mr. TEATES. Thank you, Mr. Chairman and members of the committee, for the opportunity to talk with you.

My name is Grove Teates. I am a principal in N. Grove Teates & Associates, Inc., and a consultant to States and municipalities who produce sludge, and particularly, compost which is made of that sludge. I work to establish marketing programs for compost. We

design, install, and operate programs for compost producers for a period of time before they are turned over for the client to operate.

There are various processes by which acceptable sludge may be made into compost. Composting of sludge makes it easier and cheaper to handle, and socially acceptable. In the mind of the consumer, compost has pleasant connotations when one is considering putting it on lawns, gardens, flower beds, et cetera. I have with me samples of compost that are produced by both Ohio and Maryland programs. I believe you have samples also. The compost from Maryland is richer because the sludge comes from the Capitol Hill area. You can take it home to your wife to show that you came to work today, or give it to the person that you think has everything.

This compost is sold in both States. The sales organizations in both locations do have good public acceptance. The older program in Maryland sold approximately $150,000 worth of compost this year to date. This compost is produced by the Maryland Environmental Service under contract to the Washington Suburban Sanitary Commission. Additionally, Maryland Environmental Service has handled more than 20,000 cubic yards of compost that is produced at Blue Plains by the District of Columbia government. Compost from such locations is sold to municipal governments, to landscape contractors, homeowners, and others who desire a rich humus product.

The material from the city of Columbus, Ohio, is similarly distributed. Considerable amounts of the product have been distributed into the Central Ohio area for greenhouse, golf course, and grounds maintenance uses.

Public acceptance in both locations has been excellent. There is an initial period in which public education is paramount and, after that, it is at times difficult for production to meet the demand. Generally, compost is priced so that it is an excellent value for the customer when he purchases it. It gives visible and pleasing results in locations where it is used. Commercial customers use it because it is safe, sure to make them look good, and inexpensive.

Compost is advertised in radio, television and newspaper media. Its message is carried to the general public and to commercial interests at various shows, demonstrations, and through university grant work. The U.S. Department of Agriculture, through its research, has done considerable work in promoting its usage as well as doing some of the early developmental process work.

Compost sales and distributions are hindered by the lack of Federal regulations which would distinguish between clean sludges, which may be made into compost for unlimited distribution or compost for nonfood chain applications, and sludges which would be permit approved. There presently exists a 1979 USDA guidelines on the use of sludge compost, and a 1981 USDA, USEPA, and USFDA guidelines of municipal sewage sludge utilization. It must be emphasized that these are guidelines only. Guidelines are not regulations and State officials tend to be afraid of making a decision based on guidelines. Their indecision unnecessarily slows and makes more costly the process of taking the product to market; indeed, it may retard the decision by local officials to even make the product. There must be a decision on the part of the Federal Government to establish such regulations in this area.

The second area of concern is the non-uniformity of regulations that exists between States. There are different rules between Maryland and Virginia; compost which may be acceptable in one State is not acceptable in another. Permits for the same product may be required in one area and not in another. It is very confusing. Application rules are different in different areas.

There needs to be a uniform set of rules for all States, based on sludge quality, application, and soil type. Thus everyone would know the rules of play—the local authorities as well as the commercial interests that are applying sludge, marketing compost, or making products from either. Once the rules are known, the costs to all parties decreases and the sludge disposal problem diminishes.

The guides must be practical—one governmental writer proposed several years ago that compost could not be distributed without permit if it contained more than 2½ parts per million of cadmium. Everybody worries about cadmium. This is almost impossible to achieve in many areas, and further, the stated levels of cadmium were much lower than those that exist naturally in the native soils of many areas. It makes little sense to have a limit which could prevent good native topsoil from being sold through topsoil dealers. That is what this individual was doing. This proposal was impractical.

I feel that sludges should be classified, broadly—if the sludge is clean, as determined by known standards, then the resultant compost and other products from that sludge should not have further regulation for general distribution. It is estimated that 40 percent of all sludges nationally would fall into this category—that represents a considerable pile of material. The remainder of the available sludges may continue to be regulated by their composition and by the particular utilization that is proposed for them. Such a position, on the part of the Federal Government would greatly aid the local authorities in determining if their product may be used for general distribution or if it must be regulated by the permitting process. This first step of ranking sludge by quality would ease their load, and let the participants engaged in the sludge disposal problem know what is expected of them, regardless of their location.

In a nutshell, our problem is that the State people are not familiar with the regulations about compost and do not know what to do with it, and they are afraid to take a position. It usually wastes between 6 months and 1 year, waiting on these people, before we can go in and implement a meaningful distribution program.

Thank you for your attention and for this opportunity.

Mr. ROE. Thank you.

Mr. O'Neal.

Mr. O'NEAL. Mr. Chairman and members of the committee, I am John O'Neal. I am the vice president of AD+SOIL Services, Inc., West Chester, Pa. I think we all sit here and watch you chuckle and make comments, and we can hear them behind us also, on the little bag of product that was given to you. We had a discussion on the way over as to the polite terminology for the business that we are in, and one of the ways that we can let our mothers tell people what we do. We are surveyors of poop.

AD+SOIL is one of a growing number of professional sludge management firms that have responded to the increased demand for environmentally correct and economically feasible sludge disposal alternatives.

The description of professional sludge management firms refers to the type of personnel employed to see that the environmental concerns in sludge utilization are addressed and responded to properly. AD+SOIL currently employs degreed agronomists, engineers and environmental scientists to insure that environmental impact of sewage sludge utilization is beneficial. The "haulers" and "dumpers" of sludge are no longer well received by either municipalities or industries.

AD+SOIL is one of many sludge management firms that have taken an entrepreneurial approach to solving municipal and industrial sludge problems. These firms have recognized the resource value of sludge and used their professional personnel to develop programs to get the product from the producer to the consumer.

The basic product under discussion today has been around for quite some time, and it has been used for about the same amount of time. The perspective from which I will develop my comments will be that of sludge utilization.

Sludge has been used in agriculture for a very long time. Farmers worldwide have viewed human manure as simply another manure to be used to maintain soil fertility. Historically, sewage treatment plants have made their sludges available to nearby farmers. Farmers were more than willing to transport this manure to their farms to be used as a fertilizer.

As urban areas grew, perhaps the municipality was required to pay the farmer something to offset his transportation costs, but the demand for the product has continued. As recently as 15 years ago, sludge by the truckload was available from the District of Columbia Blue Plains Sewage Treatment Plant. The number of available truckloads was much smaller than today, however.

Although most farmers were not aware of the chemical analysis of the sludge they used, they did observe that crops responded to the addition of sludge. Analyses that are now required for both professional agricultural management and to meet regulatory requirements reveal why crops responded as well as they did. As I have shown in my figure A, Blue Plains digested sludge applied to corn land has a value to the farmer in excess of $350 per acre.

[Figure A follows:]

AD+SOIL

Constituent Loadings

for

Blue Plains Digested Sludge

Injected for Corn

18 Dry Tons/Acre

Nutrient	lbs/ac	Unit Cost	Value
Nitrogen			
Available	185	$ 0.25/lb	$ 46.25
Total	936		
P_2O_5			
Est. Available	700	$ 0.25/lb	$ 175.00
Total	1400		
Potassium	Trace	$ 0.60/lb	0
Copper (125)	12	$ 2.00/lb	$ 24.00
Magnesium	127	$ 0.30/lb	$ 38.10
Zinc (250)	21	$ 0.75/lb	$ 15.75
Manganese	28	$ 0.59/lb	$ 16.57
Chromium	5.4	-	-
Sulfur	(Not determined)	-	-
Lime	2.8 tons/ac	$22.00/ton	$ 61.60
		Total	$ 377.27
Organic Matter	18,000		
Non-Nutrients			
Cadmium (5)	0.18		
Lead (500)	8.1		
Nickel (125)	2.2		

(Values in parenthesis are limits for total metal addition for soils with CEC's less than 5 based on EPA recommendations.)

Figure A

Mr. O'NEAL. With the environmental awareness that developed in the 1960's and 1970's came two situations which required that more effort be directed toward sludge management: The first was the scientific questioning of the constituents of sludge and what their impact on soil and the rest of the environment would be. The second was the dramatic increase in the amount of sludge brought about by the increase in the number and efficiency of sewage treatment plants.

The scientific questions were reviewed by a number of research facilities at all levels. The USDA, notably the Beltsville facility, USEPA, the land grant universities, and municipalities have done extensive research work. As a result of the research, many of the questions concerning the agricultural use of sewage sludge have been answered. The conclusion that has been drawn from these answers is that in a well-managed agricultural sludge utilization program, crops and soils will benefit and alteration of the environment will be primarily beneficial.

Using the knowledge developed in the past 10 years, most States have developed rules and regulations for the agricultural utilization of sewage sludge in their particular areas. These rules and regulations have been created through the interaction of the environmental agency, the agricultural agency including the university, the municipality, the farmers, and the professional sludge management firms.

AD+SOIL's primary experiences have been with Maryland, Pennsylvania, and Michigan. These three States have developed programs which require that very specific information on sludges, fields, crops, and culture be provided to the environmental agency for review and site specific permit issuance. All three States have developed guidelines for determining what sludges are acceptable for land applications, what soils are acceptable for land application and what crops are suitable for fertilizing with sludge.

These State directed controls on sewage sludge utilization have allowed local programs to be designed in an environmentally correct manner for municipalities and industries. Generally a land application program will be determined to be the most cost-effective and environmentally safe sludge management program.

The recognition of the resource value of sludge to the farmer by the farmer, the municipality, the environmental agencies, and the professional sludge management firms has allowed lower cost sludge management programs to be implemented. These programs benefit the farmer with reduced fertilizer costs, and the municipality with reduced disposal costs.

Further economic benefits will be seen by the municipality as the agricultural community recognizes the value of the material and is willing to pay a price for the sludge and sludge application service. Again the marketplace is at work.

What we now have in place in many States is a State regulatory system that works with the professional sludge manager and the sludge producer to insure the public that sludge utilization through land application is accomplished in an environmentally correct manner.

The Federal role has been that of research and technology transfer by the Department of Agriculture and the Environmental Pro-

tection Agency. As new information is developed, it would be desirable for the Environmental Protection Agency to be charged with the task of collecting, collating, and disseminating the information.

Federal involvement in sludge management should continue in this vein giving support to State administered sludge management programs. For those States that have not yet developed sludge management programs, the Environmental Protection Agency might be charged with seeing that such a program is implemented through either the Clean Water Act or Resource Conservation and Recovery Act.

Thank you.

Mr. ROE. Mr. Campbell.

Mr. CAMPBELL. Mr. Chairman, thank you for the opportunity to speak today. My name is Steve Campbell. I work for a firm called Bio Gro Systems. We are out of Annapolis, Md. I have got a written statement and rather than follow along that, I would just like to share some offhand comments about sludge, sludge utilization in this country.

Our company started 5 years ago. There were three men started with one pickup truck. We initially cleaned out dirty lagoons, confinement systems for agricultural production of animals and so forth. Today we operate on a national scale and we specialize in the application of municipal sewage sludges and industrial sludges to prime farmland as a fertilizer. We have completed about 30 major projects. We operate in nine States presently. We have permitted—conservative number is 70,000 acres of land of prime farmland in which we applied this sludge. Our staff right now, we have 70 employees of which 10 are soil scientists, registered soil scientists and agronomists which help us implement this kind of work. These are some representative projects in the country today that utilize sludge for an agricultural resource. I would just like to kind of give you the impact of this.

The first one is Winston-Salem, N.C. Our firm was the first one to work there in North Carolina. This program is an ongoing program right now in Winston-Salem. They have had three different companies perform the work to date.

Another city is Roanoke, Va. We started their land application program back in 1981. At one time, they had seriously considered land incineration. What made land application of sludge come into its own way in this country is that in the last 5 to 10 years many people just literally dumped it in the streams, the rivers, the oceans, and there was a hope of incineration with the low prices of oil. With the oil embargo, the cost of oil, many municipalities gave up on the idea of incinerating it, and then at that point in time the land-based alternatives became much more viable. That is one of the reasons that we have grown in the area that we have grown in.

I would like to mention the third one—the fourth one down is Appleton Papers, Pa. This is a paper mill. This is not a municipality where they had planned on burning some sludge. They found out that land-based alternatives were economically feasible.

This will give you an idea of why we have grown from where we are today. These numbers are approximate, but if you will look at what I think is most important, the cost of land application, especially in the larger plants, is compatible, competitive, much more

competitive than other alternatives. If you will look, also you will notice that for the larger plants, ocean dumping and land application are very close. There is a big movement on right now to dump the sludge in the ocean. Of course, we are opposed to that. I do not have any ships or barges in my backyard.

But if you take another look at it, I think you should look at the cost of incineration against land application. There is a big movement underfoot to burn the sludge and not only is this a direct cost to burn it, but we have a cost benefit to the landowner when he has the opportunity to use the sludge.

The other two projects I would like to mention that we do do occasionally is sludge has a beneficial use for land reclamation, and this is the strip mine areas in Kentucky, Virginia, and Pennsylvania. There is a lot of public opposition to this, but it is a source of nutrient material that can bring this land back to a vegetative state that can actually put strip mine areas back into productive farmland with the use of compost and sludge.

Another item that is starting to grow in this country is the use of municipal sewage sludges as natural fertilizers for forestry products. The actual growth of trees, silviculture. This is just a process and an approach that is beginning to grow in its own way just in the last 2 to 3 years.

The positive effects of utilizing municipal sewage sludges, one, it brings the nutrients back into the soil. These nutrients are used to produce crops; by bringing the sludge back to the soil, you bring the nutrients back to the ground again, it can be used to produce future crops. Believe it or not, the application of municipal sewage sludge with the organic matter in it can reduce soil erosion, and a good example is this:

If you take a china plate and drop water on it, it will run off. This is what has happened to our farmland. The upper layer of the organic matter has left, it has been leeched and blown away with erosion. Sludge has organic matter in it and a little sludge on top of the ground actually acts as a sponge, it absorbs water and reduces the impact of surface runoff.

The benefit to the farmers is that the farmer can actually save money in his crop production by utilizing sludge as a natural resource for the nutrients. It also improves the soil properties from another effect that by having the organic matter applied to the soil, that soil can hold air and water better, and this will also increase crop growth.

The negative effects of using municipal sewage sludge, really the biggest one, is the lack of public acceptance. We find that the research is there, the facts are there, but the public does not accept sludge very well because they are afraid of it, because of other hazardous waste problems in that State. We find that one of our biggest jobs is educating the public that sludge can be managed in a safe manner.

The esthetic concerns of the community, the biggest thing that people do not like in communities is truck traffic. They are really concerned about people hauling tons and tons of poop out in their community and they do not like the truck traffic. You can manage an agricultural program to minimize that. Other nuisances are odors and just sludge that looks like black maple sirup. People do

not like to see it spread on the nice green farm countryside, but you can work around these problems and implement a good program.

When we look at sludge, what we have to consider in a land application program for municipality or any community, one is the sludge quality. It has to be low in metals. Has it been properly stabilized? Another item is how far do you have to haul it from that plant to get it on farmland? Is it economical to do that? Another problem is storage. When you spread sludge on farmland as a fertilizer, you cannot put it on the land when it is raining, snowing, and inclement weather. Therefore, you have to be able to get on that ground in limited times of the year. So it is necessary for the municipality to have storage.

One of the problems here in Washington, D.C., and Blue Plains has only about 3 days storage capacity.

Public acceptance. Again you have to have an active public relations program to be able to explain the facts to people, and you also need the support of the State agencies and the State universities. These are what the communities look to for help and guidance.

The regulatory framework is a consideration. It is amazing how many different States approach sludge from different ways and what their requirements are. Some States, Virginia, for instance, has a good set of sewage guidelines that you can operate by. You go to some of the Midwestern States, you do not know what—it is a crapshoot out there. When you try to get rid of municipal sewage sludge out there, you have no idea how you are going to get rid of it and what the regulations are. We have got the Federal guidelines in place right now. It is time to make the States at least put some guidelines into effect.

When you get a permit to put the sewage sludge on farmland, what we look at really is an operational design, it is an overall program of how the program is going to be implemented. We locate the sites, these are prime farmlands. We then analyze the sludge, we analyze the soil to see what is in the soil. At that point in time, we come up with application rates so that a farmer can decide how much sludge he needs to put on to grow his crop, whether it is soybeans, corn, wheat or whatever. We map the land, we submit all this information to the regulatory agency. Once that is done, they then issue us a permit for that site. It is on a site specific basis, and that is the best way to handle sludge in an agricultural program.

Economic benefits to farmers. Again we are back to the recycling, reutilization of a resource. While I was sitting here today, I heard the word ocean dumping. There is a big move underfoot right now to ocean dump sludge from Philadelphia, New York. It is going on. Let us use Blue Plains, for example here, Washington, D.C. This sludge is not a liability. It is an asset. Right now, very conservative numbers, the sludge generated at Blue Plains, Washington, D.C. has a value to a farmer of about $3.50 a ton. It is worth that kind of money to him. On a daily basis, at Blue Plains, it produced 1,800 tons of sludge a day, that is $6,000 a day. It is roughly $2.4 million a day that material is worth to the agricultural community. I think it is a shame and a disgrace to put it on a boat, take it out and dump it in the ocean where nobody receives a

benefit from it. It takes management to do it and it can be done. Ocean dumping is the easy way out, but it is not the best way out.

Just briefly, for a farmer, we reduce his fertilizer cost and lime costs. We increase the organic matter in the soil. The other thing is by this net savings to the farmer, he is able to have other funds available to have a complete fertilizer program which will then increase his optimum yield and produce a better quality grain out in the field.

This will give you a value in dollars and cents, and this is extremely conservative. I have left the micronutrients out to the farmer. Take a farmer who takes sludge to the Eastern Shore of Maryland or Virginia from Blue Plains. He can save himself, and it is worth a dollar value without the micronutrients, $166.50 per acre. You take the farmers over on the Eastern Shore of Maryland who are farming anywhere from 600 to 1,800 acres of land, you are talking about a lot of money to an agricultural economy that is in trouble today.

We have some recommendations that we would like to leave you with. One is I would like to make the comment that the recent problems that we have here in the public eye with the EPA did a number on this business. The last 3 years we spent hours, days, and months with public relations trying to explain to the communities that sludges can be handled in a safe way that is beneficial to the community. We used EPA and Federal guidelines, and when things fell apart at the EPA here in Washington in the last 3 months, we lost a lot of credibility in the communities that we work in. It had a real impact upon this business.

Now, when I stand up and show someone an EPA manual about all the guidelines, they have very little faith in me or the EPA, and I hope this body of politicians can help take care of that problem and put a little first aid on the wound in the years to come.

The second thing we would like to suggest is that the Federal Government actively enforce pretreatment guidelines and encourarge the States to have the pretreatment guidelines. What goes in a plant is what comes out the back end of the plant. Insecticides, pesticides, hazardous wastes go in the front of the systems. Sludges come out that have to be handled like hazardous waste. The best place to go is right back to the industrial people to put these toxic wastes in the municipal systems.

Another thing that is important is that—and I will give two examples. One is Richmond, Va., and the other is Hampton Roads, Va. Hampton Roads, Va., has done about 3 years in planning to get rid of their municipal sewage sludges. They will now have a good land application program going that will be of benefit to the community.

Richmond, Va. has never acknowledged the need to get rid of their sludge. They have dumped it here, they have dumped it there, and they now have a real problem with getting any acceptance in the community. What is important is that for a community and those who are going to produce sludge is to have a long-term goal and a long-term plan to get rid of it.

One other thing that we think is important to bring to point here to this group is that I heard today, by reducing the discharge limits on municipal plants, how this was going to help businesses in that

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city. Well, one other thing should be taken into effect. When a plant increases its standards, there are economic interests that gain from that. Equipment has to be sold to the plant, people have to be hired to manage the plant, and there are other people who have to gain from standards being maintained and not relaxed.

For instance, Memphis, Tenn. You reduced their standards, they produced less sludge. I have less sludge to haul, and the farmer has less sludge to put on his land and his production—his cost of production can go up. So the economics swings both ways in this instance.

The last thing that we would like to ask is that this group encourage the Federal Government to continue support to the U.S. Department of Agriculture for the research that they have promoted in the utilization of sludge and compost. Their funds have been restricted. These people right now who have done so much for the industry do not have the funds to operate on. Their staffs have been reduced and they are not able to continue to provide the information that is necessary to keep the industry going and solve the problems in a safe environmental fashion.

Thank you.

Mr. ROE. We want to thank you very much, Mr. Campbell, Mr. O'Neal, and Mr. Teates.

How about you, Mr. Silverman, anything else?

Mr. SILVERMAN. Just to summarize, on the subject of regulation you heard a lot of talk about over-regulation. There is also a problem of under-regulation. This industry is affected by both and I think we have to strike—we have to have a clear reliable decision-making process. And that is what is lacking now and I believe some of the proposals that are before the Congress would make that a worse situation.

Second, the pretreatment is critically important. We cannot handle the hazardous waste that we will be producing and is produced because of lack of treatment and it is just time to get on with that job. I cannot think of anything more important in this field.

The present system may not be perfect, it certainly is not—has many failings. But at least it is in place and it is ready to move forward and I would just like to see us proceed forward.

I put some comments in my testimony, the finances. Mr. Goldman from our—Arthur Young, a member of our Association testified about one alternative in finance. We would like to see a lot of alternatives in the finance plans made. And so I am pleased with this Committee's interest in increasing the grants fund. I am a little concerned that there is no congressional policy in this area. Say this Committee increases grant funds and then Ways and Means diminishes some tax benefits or OMB restricts Farmers' Home loans and the net result is you have not accomplished anything. And I do not know how it would achieve it but there definitely is a need for some kind of congressional leadership in the funding of water and sewage systems.

Thank you.

Mr. ROE. Let me ask you this. Is there some national organization that has been established in your field, particularly?

Mr. CAMPBELL. No, sir, there is not. Quite frankly, this gentleman beside me, John O'Neal and myself, we have the two largest privately owned companies in I would say in the country that specialize in this. And it is a business that we both believe it is a coming thing. We found the greatest thing in the world, we are going to recycle sludge and everybody has gotten on the bandwagon. It is a very competitive business and at the same time there is not a national coalition at all. We are fairly independent.

Mr. ROE. What do you do, go and negotiate with different sewage agencies and so forth?

Mr. CAMPBELL. Primarily we try to respond to bids from municipalities. They put this work out to bid, to dispose of the sludge.

For instance, if a city does not have a planned way to get rid of it, let us say Washington, D.C., just use that as an example, they may say we are taking proposals to get rid of our sludge. Someone may come in with composting, someone may come in with incineration, someone may come in with ocean dumping, someone may come in with land applications for agricultural reuse. Some municipalities will say we are going to go to land application or we are going to go to incineration. Some will take an RFP and which one is the most economical will be the way they would like to go.

Mr. ROE. Well, that will be based on the purely economic practice.

Mr. CAMPBELL. Exactly. And that is the reason we have grown.

Mr. ROE. But in other words, if you are in a position where the utilization of the product with an application as has been discussed by all of you is available in that marketing region, you should be able to come in with a lower bid. Is that a reasonable point to make?

Mr. CAMPBELL. Yes, sir.

Mr. ROE. So it is less costly to do it, to reuse the resource rather than destroying it by incineration or whatever?

Mr. CAMPBELL. Exactly. And one other comment that I would like to share here is that it is a shame that EPA funds are available to these municipalities. I will give you a good example. And these were not EPA funds, but many plants are land application programs. The equipment is bought with EPA funds. For instance, Hampton Roads, Va., recently put out a two-tier bid. One, we will provide all the equipment and you manage the sludge disposal for this jurisdiction.

Two, you provide the equipment and the management and do a turnkey program for us.

They found on a competitive proposal it was cheaper to have private enterprise take care of the whole program and right now we have to go out and compete with cities who get these tax dollars to buy all the equipment and the hardware to get rid of the sludge. And I guarantee you right here there is not a city that can compete with me as far as cost effectiveness to get rid of the material. And we are literally competing with our own tax dollars that we pay to some of these municipalities to even develop this industry further.

Mr. TEATES. Sir, I think there is another element that needs to be approached.

I have yet to run into a municipality or government entity that can move with the rapidity or speed and certainty that the private sector does. And sometimes in this business it is very important to be able to make a decision today and in 10 minutes implement that decision and go with it.

Mr. ROE. I think you are striking upon a number of points this morning. I think that the sludge issue is perhaps one of the greatest ones we are faced with because it triggers a whole host of other things. You have all spoken to that issue vis-a-vis whether it be ocean dumping or whatever the case may be.

I think you are making a good point that there is a lack of knowledge and a lack of acceptability as far as the American people are concerned because they do not understand this issue; they think it is a dirty thing, that it has to be hidden under the—if you will pardon me, the rug or whatever, at this point.

So I think that that is a valid situation.

What concerns the committee, of course, is the fierce problems we have in the pretreatment issue. That is where it all stems from. In fact, we had good testimony yesterday of some of the witnesses who spoke to the issue that the way to solve the toxic input in the main or in large measure would be to correct it at its source rather than let it go.

Now, let me ask you this question, having said that. When someone puts a bid out for different people to bid on, different types of utilization or destruction of sludge, do you, before you enter that bid, test that sludge out? Do you understand what is in it?

Mr. CAMPBELL. Precisely, and we found several things. One is some municipalities do not want to tell you what is in the sludge so you are kind of at your own risk. You can take their analyses and accept it.

What we do for our internal protection is we sample all sludges that are to be hauled and disposed of and make sure that they are not hazardous and that they meet the Federal guidelines and the criteria set forth by that State in compliance to the land.

Mr. ROE. Well, that goes back to the testimony by the gentleman from Memphis, Tenn., when he spoke to the issue about letting everybody decide their own thing. In other words, there are two schools of thought. Does big brother do it all; namely, the Federal Government? Or do we go back and say, well, OK, States, you have the responsibility and obligation. Why not do it at the State level?

And then you determine what the quality of the sludge will be and what you are going to do with the sludge and so forth and so on.

In other words, when you have a situation like that, then everybody is walking to their own drummer at that point. So do you think there ought to be some kind of national standards that are established? I think somebody testified to that.

Mr. CAMPBELL. I think so, and I think the important thing is to have—one of the problems right now about sludge and the disposing of sludge is that there is a tremendous wealth of information and research about it, documentation. And many States do not even know that it exists. And our suggestion is——

Mr. ROE. You mean the information?

Mr. CAMPBELL. Yes, sir. Correct. And one of the things that we think——

Mr. ROE. I am getting even, because they know the sludge exists. But go ahead.

Mr. CAMPBELL. OK. The important thing is that we believe Federal guidelines should be established and we call them guidelines. I think it is wrong to tell a State exactly what he has got to do with a kind of sludge. Because for instance, in different geographic areas the land itself has different considerations. The people in Washington, it is very difficult for them to say you get rid of a certain kind of a sludge a certain way and Richmond, Va., when you have different kinds of crops, different kinds of soils, et cetera, et cetera.

So what we believe is that the Federal Government should really work hard to provide the information to the States that is there now, based on good research. And then tell the States you have guidelines in place by certain dates.

One of the problems is we operate in 13 different States right now. One of the problems is, for instance, I can go to Virginia and they have exact guidelines that I have to follow, all municipalities have to follow. You go to Oklahoma, 2 years ago we started in Oklahoma, they had no regulations about land application and they are still trying to put them together. And the information is there if the people will at least go look at it.

The USDA has got more information than EPA, probably than anybody else.

Mr. ROE. Well, I am taking more time than I meant to. Let me just ask you two questions.

I think that, No. 1, the citizen does not understand the retrievable value of the resource. They consider it to be a waste to dispose of it and get rid of it. And the whole body of testimony in the main is directed to the methodology of safely getting rid of the sludge rather than coming back and saying this is a great national asset, it is being wasted or destroyed, just like they used to top off oil wells when they burned the gas. They did not use it. Therefore, rather than go perhaps in the direction you are thinking about, would it not be a good idea that if the grant eligibility is to be maintained, that part of the application that the applicants submit to the Federal Government before it can be funded must have a program for the optimum or whatever disposal of that sludge?

Mr. CAMPBELL. And public acceptance. One of the problems——

Mr. ROE. If the gentleman would yield, you are not listening to me. I am trying to come out and say the following, that there is no mechanism that provides incentive. Do you follow what I am trying to get at?

Mr. CAMPBELL. Right.

Mr. ROE. So it seems to me that when the municipal applicant puts in their application, they have a whole series of things that they have to do, they have to look at cost effectiveness, et cetera, et cetera, so that the determination of what that grant will be and what methodology they use in the process has to be presented and accepted. But sludge is less open in the sense that they do talk of the sludge issue but they do not list it as a possible retrievable resource with a credit against the grant. And it might very readily be that if there is innovative uses of sludge, that it should get innova-

tive incentives to go in that direction by an incentive approach rather than a penalty approach, is the point that I am trying to lead up to.

Mr. CAMPBELL. You are right.

Mr. SILVERMAN. We would support that, Mr. Chairman.

Mr. ROE. You understand what I am talking about?

Mr. SILVERMAN. Yes; I think I do.

Mr. ROE. All right.

Any questions by the gentleman from Minnesota?

Mr. STANGELAND. I have no questions. It was very interesting testimony and coincides with my thoughts as a farmer that this ought to be a prime way of getting rid of the sludge. But along that line, I think we have to be very careful that we do not improperly mix and that we have the proper kinds of sludge.

Mr. CAMPBELL. That is correct.

Mr. ROE. The gentleman from Pennsylvania.

Mr. EDGAR. Thank you, Mr. Chairman.

I spent some time in Philadelphia looking at their new southwest Philadelphia treatment plant.

Mr. CAMPBELL. I am very familiar with it.

Mr. EDGAR. The officials in Philadelphia indicated that public acceptance is the biggest problem, and you reiterated this several times today, in trying to manage their sludge problem. What are some of the techniques for public acceptance that you would suggest?

Mr. CAMPBELL. That gentleman right there, Mr. Roe, he is smoking a cigarette. The quickest way to get cadmium in your body is through smoking a cigarette.

You explain that to half the audience and you can see them putting them out out there.

Mr. ROE. We just did.

Mr. CAMPBELL. The other real problem of public acceptance is this——

Mr. EDGAR. Would you repeat that for Mr. Roe?

Mr. CAMPBELL. The other real problem with public acceptance is this, and it is—I hate to sound like a BS artist up here but the problem is this: We have EPA guidelines in effect put together by engineers and consultants. We have waste water treatment plants operated by engineers and consultants. We try to dispose of sludge with engineers and consultants. I have been in numerous public hearings where Ph. D.'s, civil engineers speak to the public and address their concerns about sludge and they are over their head before they even open their mouth. They use the terminology that the average man on the street does not understand. I will give you a good example.

I hear people complaining about heavy metals in sludge. If you take the top 6 inches of soil and you calculate the amount of heavy metals that occur there naturally, and then you calculate the amount of metals in a sludge on an annual application, there is absolutely no impact to most soils in that area. This is the kind of information that has to be explained in layman's terms to the general public and it takes a lot of time, it takes an individual who can speak and you stand in a room of 300 people who are jumping up and down and they are mad, they have never had anybody ex-

plain to them in layman's terms the pros, the cons and the hazards and the management techniques to minimize these hazards of the use of sludge.

Philadelphia's land reclamation program right now is in trouble for one reason, public relations to the western part of the State. Those people do not believe and do not understand the problems and have never had explained to them in layman's terms the potentials and the benefits of the use of sludge. It is that simple.

Mr. EDGAR. We also have the problem of 200 trucks or so every day driving all the way across the State and dumping and then driving all the way back again.

Mr. CAMPBELL. Correct.

Mr. EDGAR. I do not have any problem with their land use in reclaiming coal mines in other areas of that sludge but it does just seem a little strange to do it by truck.

Mr. TEATES. Sir, I want to address the question that you asked on public acceptance.

With compost, which we have 20,000 tons of compost within half a mile of here, you probably never knew that it went down, No. 1.

No. 2, I have probably done more video work pushing public perception as well as acceptance of compost than anyone in the Nation. I make the television ads for composts. You may have seen some in this area. Last night I just previewed a 10-minute commercial and it takes a lot of nerve to make a 10-minute commercial for anything. Nonetheless, the perception is that it is a good product because it is not sewage sludge that we are selling. We are selling a competitive product to peat moss, to other fertilizers, but this is natural, it is organic and it is good. It makes things grow.

That is where we work on the public perception as to how we even talk. I do not use the word "sludge" in my vocabulary. It is a raw material only. That way the perception is different, everything is different and it comes on in a very nice manner.

We do not have advantage that some other people have in that people can buy anything they wish in America, it is a great thing. So if they do not perceive compost, whether it is under the name of contail, whatever, well, we are out. It is that simple.

Mr. SILVERMAN. In our magazine that I handed out with my testimony, we highlighted one of our members who makes films about sludge, and particularly that western Pennsylvania problem, and we are trying to encourage people in the industry to get involved with film makers and writers, and others who can explain this thing.

The other comment I want to make about shipping, really, rail transportation, pipelines make great sense in this industry. Those are permanent installations, and it goes back to public relations problems, people do not want to have a permanent installation, so that they will resist the rail spur, or the pipeline that may be used.

Mr. EDGAR. I will have to ask Mr. Clinger whether he is for sludge slurry pipelines.

Mr. CAMPBELL. Your comment, though, is well taken in Pennsylvania, and I am sure you are fairly close to the situation in the city of Philadelphia.

One other problem is the lack of storage at municipal plants, and timing. The problem with Philadelphia is the reclamation program

in Pennsylvania is a phenomenal program, and it will work, but it is going to take time to keep it together, and that is the problem that the city does not have. They do not have the time required.

You cannot push sludge on a community, or an environment that is doubtful of it. You have to educate the public, and it has to go one step at a time. And 200 trucks is one thing they are not ready to accept right now.

Mr. EDGAR. One of the things that occurred to me in visiting the Philadelphia plant, and also listening to your testimony today, is that some effort along with the films and the public education and the commercials ought to be made in terms of teachers, and educational facilities, particularly at the elementary and secondary level. Because it seems to me, prior to 1973, all of our wastes, not just our sludge, but our hazardous wastes, were not counted into as the cost of living in a civilized society, and when we find the Love Canals and the Valley of Drums, and the thousands of other toxic disposal sites, suddenly we are shocked, that to manufacture an item, it costs us something, or to live in a society, it costs us something.

I think it would be great if we could somehow get to young people throughout the educational process, to talk to them about the value of water, the value of materials that come as a result of our waste treatment, and to increase the number of tours, not just to the Nation's Capitol, but to the sewage treatment plant, and talk about the positive aspects.

After they get done giggling about the bags filled with goop, then it seems to me that there is some value in teaching people that they have to manage that in a creative and constructive way.

Mr. O'NEAL. Mr. Edgar, if you do not mind, I will respond to that.

We worked with Philadelphia, I guess, since about 1975, and of course, Philadelphia is totally land based. You will recall that they were out of the ocean 1 year before they were mandated to.

We have gone to Delaware County, and the other surrounding counties, both for the township meetings, and we are available, and I am sure that the other two gentlemen here, and Larry also, are available to go speak to these people that you are talking about, at any level, at any time.

The second thing I would like to do is to attempt to get away from using the term waste. I think that is what all of us have done in our purveying of poop, is looking at these things as products, not as wastes, but as products, and when you are out there trying to sell, and your livelihood depends upon it, you do come up with some unique sales approaches that can convince people to put out cigarettes periodically.

Mr. EDGAR. Just a little humorously, that if we got all of our national scientists together to do some statistical analysis, to make the conformity at a national level, we could call them poop sheets.

I yield back my time.

Mr. CAMPBELL. My wife told me that any time you take two good products and put them together, they are no good. Her comment to me at the table this morning was, honey, sludge is great, sugar is great, put them together, and it is no good for anybody.

Mr. ROE. Mr. Smith.

Mr. SMITH. Thank you, Mr. Chairman.

I think the public relations point was made earlier, which I agree with. You do not call it anything but sludge. For crying out loud, it is the worst name I ever heard of. Call it grow more, or how about recycled cash, daily health, but anything but sludge.

I want to know what the cost was to the farmer, and is it competitive with other fertilizers?

Mr. O'NEAL. Well, at the moment, Steve and I have talked about this quite often. The municipalities are footing the entire bill, for all of the contracts that I am aware of, to have the sludge management firm remove the material from the plant, and apply it properly to the farm.

Now, you know the cost of farm equipment. We are talking about $120,000 to $150,000 machines to apply this to the farm. What the farmer is getting is a complete service, soil analysis, fertilizer application, lime application, and primary tillage for nothing at this point.

However, both of us also recognize, and it is in the testimony, that at some point in time the demand will be there, so that the farmer will start paying, and I think then we will get in a situation that Grove would certainly like to be in.

But at this time, the municipality foots the entire bill. No cost to the farmer.

Mr. SMITH. So you make your money on a bid to a municipality, on disposing of——

Mr. CAMPBELL. The material. Solids, we call it.

Mr. SMITH. Solids. That is not good.

Mr. CAMPBELL. No; it is not. I keep trying.

Mr. SMITH. All right, we will work on that.

But you make your money bidding to the municipality, in competition with other methods to take care of the property?

Mr. CAMPBELL. Correct.

Mr. SMITH. Without cost to the farmer. Certainly, there is such a value to the farmer. That is the whole potential.

Mr. CAMPBELL. There is a tremendous value to the farmer. You can see it in dollars and cents. We have one contract in place right now, where we are attempting, right now, and it is the first time we have done it, our business is really only developed in what I would call true hard businesses, over the last 5 years, and we have one contract with the city right now, where we are charging for the material for the sludge, and a part of that, the profits, or the moneys received, go directly back to the municipality, and I personally perceive, today, that people will pay to receive this sludge, the municipalities may get some cash from the quality of the material.

Mr. SMITH. What is the percentage of assistance to the land, say in comparison to the 200 pounds of applied fertilizer?

Mr. CAMPBELL. Well, just look at it this way.

Don, you are better at this than I am, but right now if you are a farmer, and you are farming, let us say, again you are on the Eastern Shore of Maryland, you are farming 1,000 acres of corn, I can save you, in real hard cash, today, $80 an acre in your nitrogen bill, period. That is $80,000 directly to the farmer's bottom line. That is a lot of money.

Mr. STANGELAND. That is assuming that the farmer gets that material on his land free.

Mr. CAMPBELL. That is exactly right.

Mr. ROE. Mr. Clinger.

Mr. CLINGER. Thank you, Mr. Chairman.

I am sorry Mr. Edgar left. I would support the sludge slurry concept, I could see us slurrying coal to Philadelphia and sending sludge back. It might be a real solution to this whole problem!

As a western Pennsylvanian, I can concur in your assessment that there needs to be a lot of work done with regard to the public's perception of what this would mean to them. There is a lot of resistance, clearly to this.

One of the things that is of great interest to me is your allusion Mr. Campbell, to the uses that have been made in the area of strip mine reclamation, and of revegetation of the strip mines. We have a lot of strip mines in western Pennsylvania, as you are aware.

How extensive is it? Have you really got any experience in terms of the utilization of sludge for strip mine reclamation?

Mr. CAMPBELL. Sure. Right now there are projects in Kentucky, western Virginia is not as far along as Kentucky has been, and in western Pennsylvania.

And, quite frankly, it is not whether does it work, is it a good thing. All those answers have been—are there. The answers are yes, yes, they have been there for the last 5 years. The real problem is public acceptance. That is it, in a nutshell.

I have walked over probably a third of the mines in western Pennsylvania, personally, that could utilize this material, either sludge or compost.

Mr. CLINGER. Does it accelerate the revegetation in the process?

Mr. CAMPBELL. It is a godsend to the mines. It really is. It is the—they can take—you take a strip mine in western Pennsylvania, which has no growth, which has acid mine seepage, you can take the material at the rates now allowed by the Pennsylvania State, you can establish growth, vegetation, you can establish grasses, it could be used to reestablish forest trees.

You, in that process, will reduce acid mine seepage, in the amount of moisture that goes down through these mines and pollutes the ground water, and it is a tremendous benefit, but the general public up there are very reluctant to accept it.

Mr. SILVERMAN. This effort has been monitored by Penn State University, and they did some of the earlier research, and they have done the investigation of the effects, and it is well documented. We have a film about that, just using sludge to revegetate strip mine lands.

It is there, and the leadership——

Mr. CLINGER. I am aware of that, Larry, and in fact, I have seen that film, and I did want to get it on the record. This is a proven technology for strip mine reclamation.

Mr. CAMPBELL. The problem is with the general public, there cannot be one hitch in the program, there cannot be one flaw in it. Because people just do not like the idea of somebody else's trash coming into their communities and to implement that program there cannot be one hitch. The contractor has to be spotless, clean, the university has to be there monitoring it, it has to have independent monitoring and testing and the city has got to see that all those things take place at one time. And the problem in western

Pennsylvania is that the contractor who managed the entire project was not squeaky clean and that is what the citizens used to bring the program to a halt. And it is a shame because it is a good program for the State.

Mr. TEATES. I want to go further with this, to put compost in mines, and we have done some of that here in Virginia. Compost, D.C. compost to be exact, took a 1.9 leach problem and it has held it at 5.6 the last 6 years, which is a significant increase as well as longevity of holding the acid leachate. Of course, you get immediate revegetation. At the same time with handling compost as opposed to sludge, you do not have a lot of the public sector problems that you do with the image as well as with some of the problems that are associated with sludge handling. So we have looked hard in West Virginia areas, particularly in shipping compost 400-some miles from Washington in West Virginia for mine work. You do not have to worry about the leachate, for example, and runoff.

Mr. CLINGER. Thank you very much, gentlemen.

Mr. ROE. Are there any further questions?

We want to thank you very much for a very interesting and very provocative presentation. We appreciate your testimony.

Mr. SILVERMAN. Thank you, Mr. Roe.

Mr. ROE. Our next witness is Mr. Robert A. Matthews, who is with the Union Carbide Corp. but his testimony is on behalf of the Chemical Manufacturers Association. We welcome you, Mr. Matthews, to our committee.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

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CMA

CHEMICAL MANUFACTURERS ASSOCIATION

ORAL STATEMENT OF

ROBERT A. MATTHEWS

UNION CARBIDE CORPORATION

ON BEHALF OF THE

CHEMICAL MANUFACTURERS ASSOCIATION

BEFORE THE

SUBCOMMITTEE ON WATER RESOURCES

OF THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

U. S. HOUSE OF REPRESENTATIVES

ON

POSSIBLE AMENDMENTS TO THE

CLEAN WATER ACT

NOVEMBER 3, 1983

MR. CHAIRMAN, MEMBERS OF THE SUBCOMMTTEE: MY NAME IS ROBERT MATTHEWS. I AM AN ATTORNEY WITH UNION CARBIDE CORPORATION SPECIALIZING IN THE PRACTICE OF ENVIRONMENTAL LAW. I AM APPEARING ON BEHALF OF THE CHEMICAL MANUFACTURERS ASSOCIATION (CMA) TO DISCUSS POSSIBLE AMENDMENTS TO THE CLEAN WATER ACT. GIVEN THE LIMITATIONS OF TIME, I WILL FOCUS ON WHAT WE CONSIDER TO BE THE MOST IMPORTANT ISSUES BEFORE CONGRESS IN THIS REAUTHORIZATION PROCESS.

CMA HAS FREQUENTLY STATED ITS BELIEF THAT THE CLEAN WATER ACT SHOULD BE AMENDED TO PROVIDE FOR ALTERNATIVE MECHANISMS FOR IMPLEMENTING INCREASINGLY STRINGENT EFFLUENT LIMITATIONS. FOR INDIRECT DISCHARGERS, WHOSE WASTE IS FIRST SENT TO, AND TREATED BY, PUBLICLY-OWNED TREATMENT WORKS (POTWS), CMA BELIEVES THE PROPER MECHANISM IS ONE THAT WOULD AVOID REDUNDANT TREATMENT BY ALLOWING POTWS TO ESTABLISH AND IMPLEMENT LOCAL PRETREATMENT PROGRAMS DESIGNED TO ENSURE THE ENVIRONMENT IS PROTECTED, IN LIEU OF THE NATIONAL CATEGORICAL PRETREATMENT STANDARDS. FOR DIRECT DISCHARGERS, CMA BELIEVES THE PROPER MECHANISM IS ONE THAT WOULD AVOID TREATMENT FOR TREATMENT'S SAKE BY ALLOWING PERMITTEES THE OPPORTUNITY TO DEMONSTRATE THAT MODIFIED REQUIREMENTS WOULD CONTINUE TO PROTECT RECEIVING WATER QUALITY. MY REMARKS TODAY WILL SPECIFICALLY ADDRESS THE NEXT LEVEL OF TECHNOLOGY-BASED REQUIREMENTS -- THE BEST AVAILABLE TECHNOLOGY ECONOMICALLY ACHIEVABLE (BAT) EFFLUENT LIMITATIONS GUIDELINES -- WHICH HAVE BEEN, OR SOON WILL BE, ESTABLISHED FOR ALL DIRECT DISCHARGERS, INCLUDING CMA MEMBER COMPANIES.

CMA FIRMLY BELIEVES THAT CONGRESS CAN AND SHOULD CONCLUDE, BASED ON THE INFORMATION AVAILABLE TO IT TODAY, THAT BAT LIMITATIONS CAN BE MODIFIED SELECTIVELY WITHOUT COMPROMISING THE OBJECTIVES OF THE ACT. ALLOW ME TO EXPLAIN WHY CMA BELIEVES CONGRESS SHOULD REACH THIS CONCLUSION AND HOW A SO-CALLED BAT MODIFICATION PROVISION WOULD WORK UNDER THE CURRENT STRUCTURE OF THE ACT.

TWICE IN THE PAST DECADE CONGRESS HAS MADE CRITICAL DECISIONS AFFECTING THE COURSE OF THE NATIONAL EFFORTS TO CLEAN UP OUR WATERS. IN 1972, FACED WITH EVIDENCE THAT THE SYSTEM THEN IN PLACE, WHICH WAS STRICTLY A WATER QUALITY-BASED APPROACH, DID NOT APPEAR TO BE WORKING, CONGRESS MADE TWO SIGNIFICANT CHANGES. FIRST, IT ADDED THE TECHNOLOGY-BASED REQUIREMENTS THAT I REFERRED TO EARLIER. SECOND, CONGRESS ESTABLISHED A NATIONWIDE PERMIT PROGRAM TO IMPLEMENT AND ENFORCE THE WATER QUALITY AND TECHNOLOGY-BASED REQUIREMENTS.

IN 1977, CONGRESS DECIDED THAT THE FOCUS OF THE CLEAN WATER ACT SHOULD BE SHIFTED TO A NEW SET OF IMPERATIVES. ALTHOUGH THE INFORMATION WAS NOT COMPLETE OR CONCLUSIVE, CONGRESS PERCEIVED A GROWING CONCERN WITH THE EFFECTS OF TOXIC, OR PRIORITY, POLLUTANT DISCHARGES. IN RESPONSE, CONGRESS ESTABLISHED THE CONTROL OF PRIORITY POLLUTANT DISCHARGES AS A PRIMARY FOCUS OF THE ACT.

IN 1983, CMA BELIEVES THAT THERE ARE NEW FACTS AND NEW IMPERATIVES WHICH CONGRESS SHOULD ACT ON. FIRST, WE KNOW A LOT MORE THAN WE DID IN 1977 ABOUT THE EFFECTIVE CONTROL OF PRIORITY POLLUTANTS. AS REQUIRED BY THE STATUTE, BY 1977 INDUSTRY INSTALLED POLLUTION CONTROLS NECESSARY TO COMPLY WITH THE FIRST ROUND OF TECHNOLOGY-BASED REQUIREMENTS -- THE BEST PRACTICABLE CONTROL TECHNOLOGY CURRENTLY AVAILABLE (BPT). THESE CONTROLS HAVE REMOVED LARGE QUANTITIES OF POLLUTANTS, AS EVIDENCED BY EPA AND INDUSTRY DATA. FOR EXAMPLE, THE DATA IN THE 1982 CMA/EPA FIVE-PLANT STUDY DEMONSTRATE THAT HIGH RATES OF REMOVAL OF ORGANIC PRIORITY POLLUTANTS ARE ACHIEVED BY THE KINDS OF WELL-DESIGNED AND WELL-OPERATED BIOLOGICAL TREATMENT SYSTEMS THAT WERE INSTALLED TO MEET BPT. ATTACHED TO MY WRITTEN STATEMENT ARE ADDITIONAL DATA FROM SEVERAL UNION CARBIDE PLANTS WHICH EMPLOY BIOLOGICAL TREATMENT AND WHICH HAVE ACHIEVED REMOVAL EFFICIENCIES OF 99% AND ABOVE FOR THE MAJORITY OF PRIORITY POLLUTANTS.

IN TESTIMONY BEFORE THIS SUBCOMMITTEE LAST YEAR, THE BUSINESS ROUNDTABLE PRESENTED DATA INDICATING THAT INDUSTRIAL POINT SOURCES CONTRIBUTE A RELATIVELY SMALL PORTION (3 TO 10%) OF THE NATIONWIDE DISCHARGE OF PRIORITY POLLUTANTS TO SURFACE WATERS. AS A RESULT OF BOTH THIS RELATIVELY LOW LEVEL OF CONTRIBUTION AND THE HIGH LEVELS OF PRIORITY POLLUTANTS REMOVED THROUGH BPT, THE BUSINESS ROUNDTABLE DATA INDICATE THAT THE IMPOSITION OF BAT WILL ACHIEVE ONLY AN ADDITIONAL 2-3% REDUCTION IN THE NATIONWIDE DISCHARGE OF PRIORITY POLLUTANTS.

IN ADDITION, WE HAVE GAINED CONSIDERABLE EXPERIENCE WITH A PERMIT PROGRAM WHICH ALLOWS THE FEDERAL AND STATE AGENCIES TO EFFECTIVELY ENFORCE EFFLUENT DISCHARGE LIMITATIONS DERIVED ON THE BASIS OF EITHER TECHNOLOGY OR WATER QUALITY.

FINALLY, WE HAVE SIGNIFICANTLY IMPROVED OUR ABILITY TO ASSESS THE PRESENCE AND IMPACTS OF PRIORITY POLLUTANT DISCHARGES IN AND ON RECEIVING WATERS. WE CAN NOW DETECT SUCH POLLUTANTS IN EXTREMELY SMALL QUANTITIES. TOOLS SUCH AS BIOLOGICAL MONITORING ARE NOW AVAILABLE AS SCREENING DEVICES TO IDENTIFY AREAS WHICH MAY BE DISCHARGING TOXIC POLLUTANTS IN TOXIC AMOUNTS.

THESE ARE THE 1983 FACTS. LET ME NOW DESCRIBE WHAT CMA BELIEVES ARE THE 1983 IMPERATIVES.

ALL OF INDUSTRY MUST NOW INSTALL BAT. IN THE CASE OF PRIORITY POLLUTANTS, THEY MUST DO SO WITHOUT REGARD TO THE HIGH RATES OF REMOVALS THEY ARE CURRENTLY ACHIEVING. MORE SIGNIFICANTLY, EACH PLANT MUST INSTALL BAT WITHOUT REGARD TO WHETHER THE ADDITIONAL CONTROLS WILL PROVIDE ANY ADDITIONAL PROTECTION TO THE RECEIVING WATER QUALITY.

CMA BELIEVES THAT THE CLEAN WATER ACT SHOULD CONTAIN A MECHANISM TO ALLOW PLANTS TO DEMONSTRATE THAT MODIFICATION OF THE BAT REQUIREMENTS WILL NOT CREATE A RISK OF HARM TO THE RECEIVING WATER QUALITY. WE BELIEVE THAT THE USE OF SUCH A

MECHANISM WOULD BE LIMITED, BUT WOULD AT LEAST PROVIDE A PLANT WHICH FACED A COSTLY BAT REQUIREMENT WITH THE OPPORTUNITY TO PRESENT EVIDENCE THAT MEETING THOSE REQUIREMENTS WOULD NOT RESULT IN A DISCERNIBLE WATER QUALITY BENEFIT.

LET ME ILLUSTRATE THIS CONCERN BY WAY OF A BAT-RELATED PROBLEM FACING ONE OF UNION CARBIDE'S PLANTS. THIS LOCATION CURRENTLY DISCHARGES, ON THE AVERAGE, 0.5 LBS/DAY OF PHENOL. IN ORDER TO ACHIEVE (ON A CONSISTENT, ENFORCEABLE BASIS) THE PROPOSED BAT PHENOL LIMITATION APPLICABLE TO IT, THE PLANT BELIEVES IT WILL HAVE TO DESIGN AN ESSENTIALLY ZERO DISCHARGE SYSTEM FOR PHENOL. THIS, THE PLANT HAS ESTIMATED, WILL REQUIRE A CAPITAL INVESTMENT OF OVER $2 MILLION.

WILL THE RECEIVING WATER BE BETTER PROTECTED IF THE $2 MILLION IS SPENT? IF THE ANSWER IS NO, THIS IS TREATMENT FOR TREATMENT'S SAKE. UNFORTUNATELY, THE CLEAN WATER ACT DOES NOT ALLOW THE ISSUE TO BE RAISED. CMA BELIEVES IT SHOULD. THE ACT SHOULD BE AMENDED TO ALLOW A PLANT TO DEMONSTRATE THAT A MODIFIED BAT PROVISION WILL SATISFY ALL WATER QUALITY REQUIREMENTS, INCLUDING THE PROTECTION OF THE DESIGNATED USE OF THE RECEIVING WATER.

MY WRITTEN TESTIMONY CONTAINS A DETAILED ANALYSIS OF HOW A BAT MODIFICATION PROGRAM WOULD WORK. I WILL NOW HIGHLIGHT CERTAIN ASPECTS OF THE CMA PROPOSAL. FIRST, THE ENTIRE BURDEN OF GENERATING THE INFORMATION TO BE CONSIDERED IN A MODIFICA-

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TION REQUEST, AND OF DEMONSTRATING THAT THE PLANT QUALIFIES FOR A MODIFICATION, WOULD BE ON THE PERMITTEE. SECOND, THE MODIFICATION PROCESS WOULD BE ON A POLLUTANT-BY-POLLUTANT BASIS. THAT IS, THE PERMITTEE'S BAT REQUIREMENTS COULD BE MODIFIED ONLY FOR THOSE SPECIFIC POLLUTANTS WHICH THE PERMITTEE DEMONSTRATES MEET THE MODIFICATION CRITERIA. THIRD, A SUCCESSFUL BAT MODIFICATION DEMONSTRATION WOULD NEVER RELIEVE THE PERMITTEE OF MEETING THE BASELINE BPT AND WATER QUALITY-DERIVED LIMITATIONS. AND FINALLY, THE GRANTING OF A BAT MODIFICATION REQUEST WOULD NOT BE CAST IN STONE. ADDITIONAL MONITORING IMPOSED AS A CONDITION OF THE MODIFICATION COULD GENERATE INFORMATION INDICATING THAT THERE WERE, IN FACT, UNREASONABLE RISKS OF HARM IN THE RECEIVING WATER. OR, A STATE COULD UPGRADE THE DESIGNATED USE OF THE RECEIVING WATER. EITHER OF THESE SITUATIONS COULD RESULT IN THE WITHDRAWAL OF A BAT MODIFICATION. ACCORDINGLY, WE BELIEVE THE ACT SHOULD ALLOW A MODIFICATION OF BAT LIMITS IN APPROPRIATE SITUATIONS TO AVOID TREATMENT FOR TREATMENT'S SAKE.

FINALLY, LEGISLATIVE PROPOSALS IN BOTH THE HOUSE AND THE SENATE HAVE INCLUDED A SO-CALLED "POST-BAT" PROVISION. FOR A NUMBER OF REASONS, CMA BELIEVES THESE PROPOSALS SHOULD NOT BE ADOPTED AT THIS TIME. THE PROPOSALS ARE PREMATURE SINCE BAT HAS NOT BEEN IMPLEMENTED. INDEED, FOR MANY INDUSTRIES, BAT HAS NOT YET BEEN DEFINED. THE PROPOSALS WOULD ALSO FUNDAMENTALLY ALTER THE TRADITIONAL WAY IN WHICH WATER QUALITY STANDARDS HAVE BEEN DEVELOPED AND IMPLEMENTED BY TAKING FROM THE STATES THE

AUTHORITY TO SET SUCH STANDARDS. HOWEVER, CMA DOES AGREE WITH ONE OF THE ASSUMPTIONS WHICH FORMS THE BASIS FOR THESE PROPOSALS. THE POST-BAT PROPOSALS ASSUME THAT THE SCIENTIFIC COMMUNITY CAN NOW, ON A SITE-SPECIFIC BASIS, IDENTIFY WHERE WATER QUALITY PROBLEMS EXIST. THIS SAME ASSUMPTION CAN BE APPLIED TO THE BAT MODIFICATION PROPOSAL. THAT IS, THE SCIENTIFIC COMMUNITY CAN DETERMINE, WITH SUFFICIENT PRECISION, WHERE WATER QUALITY PROBLEMS DO NOT EXIST AND THEREFORE, WHERE ADDITIONAL EFFLUENT REDUCTIONS ARE NOT REQUIRED TO PROTECT THE WATER QUALITY.

FOR ALL OF THESE REASONS, CMA URGES THAT THIS SUBCOMMITTEE SERIOUSLY CONSIDER THE BAT MODIFICATION PROPOSAL.

I WILL BE PLEASED TO RESPOND TO ANY QUESTIONS YOU MAY HAVE.

1894

CMA

CHEMICAL MANUFACTURERS ASSOCIATION

STATEMENT OF

ROBERT A. MATTHEWS

UNION CARBIDE CORPORATION

ON BEHALF OF THE

CHEMICAL MANUFACTURERS ASSOCIATION

BEFORE THE

SUBCOMMITTEE ON WATER RESOURCES

OF THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
U. S. HOUSE OF REPRESENTATIVES

ON

POSSIBLE AMENDMENTS TO THE

CLEAN WATER ACT

NOVEMBER 3, 1983

EXECUTIVE SUMMARY

The Chemical Manufacturers Association (CMA) believes that the country has made considerable progress in water pollution control through implementation of the Clean Water Act in a reasonable and flexible manner. In order to continue this progress, CMA urges Congress to examine how the Act can be improved by directing attention to significant problems and ensuring that the Act addresses them in a sound manner. CMA has the following specific suggestions:

- Modification of BAT limitations. The treatment technology installed by industry to date has resulted in substantial improvements in our nation's waters. Consequently, implementation of BAT controls is not necessary in all cases. Modifications of BAT limitations should be allowed where an adequate environmental study shows that BAT is not necessary to achieve good water quality. Such modifications will avoid costly expenditures by industry for treatment technology that will not improve environmental quality. We believe that a workable modification scheme can be established consistent with the nation's commitment to the control of toxic pollutants.

- Pretreatment. The pretreatment program has centered on national technology-based pretreatment standards that do not properly take into account the need for such treatment. The result is costly, redundant treatment by both industry and POTWs. EPA has recognized the need for more

flexibility in the pretreatment program. CMA supports a legislative amendment to allow POTWs to establish and implement local pretreatment programs in lieu of the national categorical pretreatment standards.

- Deadlines for compliance. The Act currently requires compliance with BAT and BCT effluent limitations by July 1, 1984. CMA supports an extension of this deadline to July 1, 1988, in order to allow EPA to complete the task of issuing its effluent limitations guidelines and to afford sufficient time after guidelines are issued to write permits and design and construct treatment facilities to meet the new limitations.

- Water quality requirements. Section 6 of H.R. 3282 specifies detailed requirements relating to the designation of uses of water bodies and the establishment of water quality standards to achieve those uses. This section would add undue rigidity to the water quality standards program and would unnecessarily tie EPA's hands in administering a complex program which requires flexibility to respond to local conditions. CMA opposes this amendment.

- Post-BAT requirements. Section 7 of H.R. 3282 prescribes requirements for the implementation by EPA of additional post-BAT water quality-based controls. The proposal is premature, since BAT has not been implemented. This proposal would also fundamentally alter the way in which water quality standards have traditionally been developed and implemented by taking from the states the authority to set such standards. Instead of attempting to legislate additional controls now, the Congress should direct EPA to undertake a study of the quality of the nation's waters that would allow Congress to assess what additional controls on point source discharges, if any, are necessary.

My name is Robert Matthews. I am an environmental attorney with the Union Carbide Corporation. Today I am testifying on behalf of the Chemical Manufacturers Association (CMA) on possible amendments to the Clean Water Act. CMA is a nonprofit trade association whose company members represent more than 90 percent of the production capacity of basic industrial chemicals in this country. CMA members are directly and significantly affected by the requirements of the Clean Water Act (CWA or "the Act"), and we are thus vitally interested in possible amendments to the Act.

The installation of pollution control equipment by American industry, in many cases prior to the enactment of the Clean Water Act, has brought about major advances in cleaning up and protecting the nation's waters. I am speaking here not only of conventional pollutants such as suspended solids or pH, but also of the toxic or priority pollutants that have been a specific concern since the 1977 amendments to the Act. As described more fully below, a study completed last year on joint CMA/EPA analyses of samples from industry wastewater treatment systems convincingly demonstrates that widely used biological treatment systems, which EPA has identified as the "best practicable technology" (BPT) for the organic chemicals industry category, remove a high percentage of most organic priority pollutants.

We believe that much of the improvement in water quality that the country has witnessed results from the flexible and reasonable manner in which EPA and the states

have implemented the Clean Water Act through the NPDES permit program. CMA urges the House of Representatives to take the occasion of the reauthorization of the Clean Water Act and the consideration of possible amendments to evaluate carefully the progress that industry has made during the past decade in water pollution control.

Current policies under the Act should be examined to ensure that future requirements are imposed in a flexible manner to allow alternative treatment to be used where it will protect the environment. This will avoid devoting administrative and financial resources to expensive treatment systems that will not provide water quality improvements. These principles apply with particular force to the BAT and pretreatment provisions of the Act, which were the subject of testimony before the Water Resources Subcommittee in 1982.

I. MODIFICATION OF BAT LIMITATIONS

A central feature of the Act's control of the discharge of pollutants is the requirement that industrial dischargers to the nation's waters meet a series of increasingly stringent levels of effluent limitations. The 1972 amendments effected a shift from exclusive reliance on water quality controls to technology-based effluent limitations. EPA is in the process of promulgating "best available technology" (BAT) effluent limitations guidelines for major industry categories to implement this part of the statutory scheme. Because the installation of controls by industry has

resulted in substantial improvements in our nation's waters, the implementation of BAT limitations will not be necessary in all cases. Accordingly, we believe that the Act should allow a modification of BAT limitations in appropriate situations to avoid treatment for treatment's sake where no appreciable benefit to the quality of the nation's waters will result.[1]

A. The Progress Achieved to Date

The progress to date in reducing the amount of pollutants that industry discharges to our nation's waters has been substantial. According to EPA, industrial controls installed to meet BPT limits have resulted in significant reductions of four key pollutants: biochemical oxygen demand by 69 percent; suspended solids by 80 percent; oil and grease by 71 percent; and dissolved solids by 52 percent."[2] BPT has also resulted in the removal of toxic heavy metals. As EPA testified, comparisons of estimated 1972 and BPT-level loadings of heavy metals from 26 industries show reductions between 80 and 93 percent.[3] EPA also reported a number of specific water

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[1] The Act should also be amended to allow modification for conventional pollutants where circumstances warrant. See page 8, n.1 below.

[2] See June 14, 1983 Testimony of William D. Ruckelshaus Before the Senate Subcommittee on Environmental Pollution, Committee on Environment and Public Works; see also "Possible Amendments to the Federal Water Pollution Control Act," Hearings Before the Subcomm. on Water Resources of the House Comm. on Public Works and Transp., 97th Cong., 2d Sess. 12 (1982) (hereinafter 1982 House Hearings).

[3] 1982 House Hearings at 12-14.

quality success stories, including improvements in the Neches and Penobscot Rivers where fish are once again found in large numbers.[1]

The chemical industry takes satisfaction in its record of performance. In the absence of effluent limitations guidelines, most of the first level of technology-based permits, seeking to establish best practicable technology (BPT) limits, were developed on a case-by-case basis using the permit writer's best professional judgment. The record using this process has been a good one.

The treatment already installed by the chemical industry has achieved better than expected results in controlling priority (toxic) pollutants.[2] For example, the CMA/EPA Five-Plant Study completed last year demonstrates that well-designed and well-operated biological treatment systems are highly effective in removing organic priority pollutants. Let me describe briefly the study and its results.

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[1] Id. at 14-19. See also Water Pollution Control Federation, "A Decade of Progress: America's Quest for Clean Water" (May 1983) (describing additional success stories).

[2] "The latest information indicates that the 129 'priority pollutants' on which the clean water regulatory program is primarily focused are less evident in both amounts and concentrations than previously believed." "Implementation of the Clean Water Act," Subcommittee on Oversight and Review, House Committee on Public Works and Transportation, Comm. Print 96-71, 96th Cong., 2d Sess. at 29-30 (1980) (hereinafter the House Oversight Report). The Oversight Subcommittee found that "to a degree not anticipated, the conventional secondary treatment technologies employed by municipalities and many industries have succeeded in removing most of the priority pollutants in a highly efficient manner." (Id. at 30). The Report refers to data showing that technology installed to meet BPT limits may be far more effective in removing or degrading toxic pollutants than previously anticipated. (Id. at 35).

The chemical industry undertook the Five-Plant Study to develop a long-term data base on the removal of toxic organics by biological treatment systems, which are the systems used by over 80 percent of the chemical industry. The study included an extensive quality control/quality assurance program to determine the reliability of the laboratory analyses and to assure the proper interpretation of the data base.[1] EPA nominated the five participating plants based upon the expected occurrences of specific organic priority pollutants of interest to EPA.

Based on the study results, CMA drew the following major conclusion: data collected during the Five-Plant Study indicate that toxic organic pollutants in all groups (volatiles, base/neutral, and acid) are removed, with few exceptions, to the limit of detection.[2] Organic priority pollutants were removed by 87 percent on the average.[3] Thus, the

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[1] All samples were analyzed using gas chromatography/mass spectrometry (GC/MS) or gas chromatograph (GC) procedures (44 Fed. Reg. 69464 (Dec. 3, 1979)) or variations acceptable to EPA's Effluent Guidelines Division.

[2] Our analysis demonstrates that analytical method precision and accuracy as measured by intralaboratory repeatability, interlaboratory reproducibility and recovery of known spikes remain as the dominant limiting factor controlling the use of toxic organic pollutant data. For example, for a single laboratory, if a volatile organic pollutant were measured in a single sample as 100 parts per billion (ppb), a second analysis of that same sample could yield a result as low as 20 ppb or as high as 500 ppb.

[3] A summary of the results of the CMA/EPA Five-Plant Study is contained in Appendix I below.

wastewater treatment systems installed to meet 1977 BPT requirements have substantially reduced the discharges of organic priority pollutants of concern in the chemical industry.

These data are confirmed by other studies.[1] Attached to my statement are data from several Union Carbide plants which employ biological treatment and which have achieved priority pollutant removal efficiencies of 99 percent and above.[2] A company-wide study by Du Pont, completed in 1978, also showed high efficiencies of control of priority pollutants.[3] Data from a Business Roundtable study show similar high removals of priority pollutants ranging from 60 to 95 percent by biological treatment, the treatment employed by most of the chemical industry.[4] Based on a survey of 61 CMA member plants, CMA has concluded that the concentration of the sum of all priority pollutants in the effluent from chemical industry plants is less than 1 part per million.

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[1] A study on the treatability of specific organic compounds in chemical industry wastewaters showed removals higher than 65 percent for most pollutants, with many pollutants being removed in the 80 to 90 percent range. Kincannon, D.F., Stover, E.L., "Biological Treatability of Specific Organic Compounds Found in Chemical Industry Wastewaters," 36th Purdue IWC, West Lafayette, Ind. (May 1981).

[2] See Appendix II below.

[3] See Appendix III below.

[4] Environmental Research & Technology, Inc., "Analysis of Technical Issues Related to Reauthorization of the Clean Water Act," Chapter 5 (July 1982) (hereinafter the Business Roundtable study).

These high percentage removals have been achieved at significant expense. By 1976, the chemical industry had spent $1.8 billion for pollution control equipment, which cost almost $400 million a year to operate. At the end of 1981, America's chemical companies had more than doubled their capital investment in water pollution control to $3.7 billion, and in 1981 it cost $1 billion to operate those facilities. In total, the chemical industry expended nearly $10 billion for the construction, operation and maintenance of water pollution control facilities through 1981.[1] Additional significant expenditures nationwide are not warranted.

B. The Need for Flexibility

EPA has now begun the implementation of the second level of technology controls, namely BAT.[2] CMA believes that the success achieved to date in improving water quality can best be maintained and enhanced if additional flexibility is allowed in the Act. Considering the substantial anticipated costs of across-the-board BAT controls, and the unanticipated significant reductions in discharges of priority pollutants to date, BAT controls will not be warranted in some cases. In order to avoid the imposition of costly treatment requirements

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[1] Bureau of Census, U.S. Department of Commerce, Annual Reports of Pollution Abatement Costs.

[2] EPA's proposed BAT effluent limitations for the organic chemicals industry are in large part based on data from the Five-Plant Study discussed above.

that are not necessary to achieve good water quality, we request that Congress amend the Clean Water Act to allow additional flexibility in the use of BAT effluent limitations. Where water quality circumstances permit, a discharger should be allowed to qualify for alternative BAT effluent limitations.[1] In particular, the Act should be amended to allow for a modification of BAT effluent limitations where the applicant can show that the resulting discharge of pollutants will not pose an unacceptable risk of harm in the receiving water based on the water's designated use.

According to the Business Roundtable study submitted last year to the House Subcommittee on Water Resources, a mandated change from BPT to BAT treatment on a national basis will result in only a 2-3 percent additional reduction in the quantities of priority pollutants discharged to our nation's waters.[2] The reason for this is twofold. First, as noted above, treatment controls installed to meet BPT effluent limits have removed a high percentage of priority pollutants. Second, discharges from industrial point sources constitute a relatively small (3-10) percentage of priority pollutant

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[1] Section 301(g) of the Act provides for a modification of the BAT limitations applicable to nonconventional pollutants where such modification will not interfere with the attainment or maintenance of water quality. Section 301(g) does not apply to toxic or conventional pollutants. Moreover, Section 301(l) of the Act expressly precludes such a waiver for toxic pollutants

[2] 1982 House Hearings at 1045.

discharges to surface waters.[1] What this means, as the Business Roundtable concluded, is that greater attention should be given to identifying and controlling other sources of priority pollutant discharges, particularly nonpoint sources, and to addressing site-specific problems.[2]

Let me illustrate the reason why we continue to urge the Congress to allow alternative limitations to BAT. One of Union Carbide's plants discharges an average of one-half pound per day of phenol. In order to achieve EPA's proposed BAT limits on a consistent, enforceable basis, the plant believes that it will have to achieve close to zero discharge of phenol at a capital cost of over $2 million. Is this $2 million expense to remove one-half pound needed to protect water quality? Unfortunately, the Clean Water Act does not allow the issue to be raised; CMA believes that it should.

Another CMA member provides a second example. The Du Pont plant in Beaumont, Texas manufactures six chemical

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[1] Id. at 1044-45.

[2] See also, id. at 1011-13 (testimony of the American Petroleum Institute). The Association of State and Interstate Water Pollution Control Administrators has also urged the Water Resources Subcommittee to focus on the appropriate level of toxic removal rather than a given level of technology after BPT limits have been met. In testimony on July 28, 1982, the Association recommended that BPT requirements be maintained as the minimum national treatment requirements for industrial dischargers, with additional controls as needed to control toxic pollutants in toxic amounts and avoid "treatment for treatment's sake." Id. at 1390-91.

products and employs 1400 people. The plant utilizes biological treatment along with a variety of wastewater treatment technologies (with a replacement cost of $27 million and a 1982 operating cost of $14 million) to meet its current BPT limitations.

Earlier this year, Du Pont completed a study to measure the impact of this plant on the receiving water, the Neches River, and estimated the costs of compliance with future BAT requirements. Samples of river water above and below Du Pont's Beaumont plant and at the plant's outfall were analyzed for 125 priority pollutants. The results of this study were as follows:

-- Only seven organic priority pollutants were detected in the river, and in each instance the level was too low to quantify.

-- Six heavy metals were detected in the river. In every case, the ranges of concentrations below the Du Pont outfall were essentially the same as those found above the outfall.

The study results show that Du Pont's discharge is a negligible source of priority pollutants in the Neches River.[1]

In contrast, the costs of meeting anticipated BAT requirements would be large. Du Pont estimates that it would

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[1] A summary of the results of the study is contained in Appendix IV below.

have to spend at least $5 million in new capital and $2 million in annual operating costs to meet BAT requirements at this plant, based on activated carbon treatment of isolated streams. The foregoing study provides evidence that such expenditures are not warranted since further treatment of Du Pont's discharge would not appear to result in any perceptible improvement in water quality.[1]

We think it would be a wise policy to allow industry the opportunity to persuade the permit authority that alternate limitations are warranted for such plants. Under the current statute, we cannot do so.

The BAT modification scheme that CMA proposes would operate in a straightforward manner:

1. Application for a modification would be made by the discharger, who would have the burden of proof.

2. The application would be acted on by the NPDES permit-issuing agency -- by the state where there is delegation or (in the absence of delegation) by EPA.

3. The modification would be on a pollutant-by-pollutant basis from BAT effluent limits.

4. The discharger would have to show either that water quality standards are being met (or could be met with the application of additional controls short of BAT) or (where there are no standards for

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[1] We recognize, of course, that the Beaumont study was not exhaustive and that additional data might have to be assembled to support a modification request, as described below.

the pollutant involved) that its present or proposed discharge levels will not pose an unacceptable risk of harm in the receiving water based on the designated use of such water.

5. The permit writer would exercise judgment in evaluating the necessary data and the merits of modification requests in each particular case.

6. The permit writer may require additional monitoring (including biological testing) as a condition of granting the modification, as circumstances warrant.

7. A BAT modification would not relieve the discharger from meeting any applicable BPT or water quality requirements.

The discharger would be able to make a case for a BAT modification in one of several ways. First of all, if a water quality standard exists for a pollutant that would otherwise be regulated by BAT, then the discharger could seek to establish that the standard is being met -- or could be met with the application of additional controls short of BAT. For example, if total maximum daily loads (TMDLs) have been established for the facility in question, then the applicant could show that the quantity of its discharge of a pollutant is less than the TMDL value. Alternatively, if no TMDL has been established, the discharger could show, by analysis of samples from the water body in question, that the standard for the pollutant is being met.

In situations where a water quality standard has not yet been established for a pollutant of concern, a BAT modification would be appropriate where the applicant can show that

its discharge will not pose an unacceptable risk of harm in the receiving water based on the designated use of such water. This showing could be made on the basis of biological monitoring, or by alternate means.[1] Safe levels could be established in several ways -- for example, by biological studies, by using the acute level and a validated or agreed-upon application factor, or by reference to the scientific literature.

It is neither necessary nor appropriate that the precise scientific requirements for a BAT modification be established in the statute. The permitting agencies should have flexibility to determine what data will be sufficient to establish the absence of an unacceptable risk of harm to the environment on a case-by-case basis. Knowledge of the discharge in question, the pollutants of concern, the nature of the receiving water body, potential affected aquatic organisms, and other relevant site-specific factors will enable the permitting authority to make sound judgments on the merits of a modification request. Similarly, the permitting authority is in the best position to determine the need for any other requirements, such as additional conventional or biological testing, that may be appropriate as a condition of granting the BAT modification.

The proposed BAT modification will provide needed flexibility. It would allow plants that can demonstrate the

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[1] See House Oversight Report at 62.

control of toxics to a level that protects water quality to meet alternate limits instead of the national BAT requirements. We expect that only a limited number of plants will seek a BAT modification. An adequate scientific showing will be required to obtain such a modification. The modification process can and should be administered in a manner that avoids protracted proceedings, paperwork and expense for all concerned, while assuring that the environment is protected. Of course, it should be emphasized that a BAT modification will not relieve the discharger from meeting applicable BPT or water quality requirements.

II. LOCAL CONTROL OF THE PRETREATMENT PROGRAM

The current program for regulating industrial discharges to publicly owned treatment works (POTWs) consists of national technology-based pretreatment standards. As shown below, the application of uniform EPA categorical pretreatment standards will not appreciably reduce water quality violations where they exist. Moreover, for those POTWs thought to cause a water quality problem, the mixture of industrial and other discharges to POTWs varies so widely that any water quality problems that exist can better be controlled at the state and local level. Accordingly, we urge that the Act be amended to allow POTWs the opportunity to implement local programs in lieu of the federal categorical standards.[1]

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[1] We also discuss the application of Section 301(k) of the Act to pretreatment, below at p. 27.

The need for local control of pretreatment requirements has received broad based support in testimony before Congress. The Association of Metropolitan Sewerage Agencies (AMSA), whose members serve 70 million people, testified before the House Subcommittee on Water Resources that POTWs should have the primary role in framing and implementing the necessary pretreatment controls. AMSA urged Congress to allow POTWs meeting certain standards to opt out of the federal program, which would require implementation of national categorical standards.[1] The Association of State and Interstate Water Pollution Control Administrators also urged that POTWs with programs "equivalent" to the federal program be allowed to administer those local programs as alternatives to the federal program.[2] The Water Pollution Control Federation supported this approach as well.[3] In addition, a number of industry groups testified that national categorical pretreatment standards should be abandoned in favor of local controls.[4]

A. The Need for Reform

Section 307(b) of the Act authorizes EPA to establish national pretreatment standards for pollutants that

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[1] 1982 House Hearings at 329-40.

[2] Id. at 1386-88.

[3] Id. at 1415, 1421-28.

[4] Id. at 976-82 (CMA), 1048-49 (Business Roundtable), 1052-96 (National Association of Metal Finishers), 1018-20 (American Petroleum Institute).

interfere with the operation of POTWs or pass through untreated. EPA has developed an elaborate and cumbersome pretreatment program to implement this provision. The most onerous aspect of this program involves the promulgation of national technology-based pretreatment standards applicable to industrial dischargers of toxic and nonconventional pollutants. Typically, these "categorical" pretreatment standards have been identical to BAT effluent limitations guidelines applicable to direct dischargers. In the development of these standards, EPA has given inadequate consideration to the amount of interference with the operation of POTWs and the extent to which municipal treatment systems effectively remove pollutants.[1] Meeting such standards will therefore inevitably require expenditures by industry for treatment that substantially duplicates treatment by POTWs.

One example of this potential for redundant treatment is found in EPA's proposed pretreatment standards for the organic chemicals industry.[2] While EPA has not specified the treatment technology necessary to meet the standards, the data

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[1] Current EPA policy requires imposition of BAT-level pretreatment standards whenever BAT treatment would remove more than typical POTWs even where POTW removals are at very high levels. (See 48 Fed. Reg. 11841 (Mar. 21, 1983)). In theory EPA's regulations allow for "credits" reflecting removal of pollutants by POTWs (40 C.F.R. § 403.7), but the removal credit program has been widely criticized by municipalities and industry as being unworkable. See the 1980 House Oversight Report at 40-44 and 59-60.

[2] 48 Fed. Reg. 11828 (Mar. 21, 1983).

on which EPA relies to support the proposed standards are based entirely upon treatment achievable by biological systems -- the identical treatment employed by POTWs. To meet the pretreatment standards, industrial dischargers may be required to duplicate the very treatment provided by POTWs.

To alleviate this problem of redundant treatment, Congress in 1977 provided for modifications of national categorical pretreatment standards to reflect pollutant removals achieved by POTWs. EPA has attempted to implement this provision in regulations that allow POTWs to apply for so-called "removal credits," but the POTWs consider these regulations to be so complex and restrictive that they will not apply for the credits.[1] Without credits, industrial dischargers will be required to install expensive treatment technology to meet pretreatment limits even though the POTW may remove all or most of certain pollutants in the dischargers' effluents.[2]

We believe that the pretreatment program can be strengthened by directing attention to the particular problems

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[1] The House Oversight Report (at 42) quotes one municipal witness at the Subcommittee's hearings in June 1980 as stating, "The restrictions and difficulties involved in the granting of removal credits lead to the conclusion that the EPA was never serious about allowing removal credits to industry."

[2] Data from municipal treatment plant monitoring show that POTW secondary treatment is extremely effective at removing toxic organics. "Fate of Priority Pollutants in Publicly Owned Treatment Works," (EPA-440/1-82/303) (Sept. 1982). This is consistent with the Five-Plant Study results discussed above at pp. 4-5.

of interference and pass through identified in Section 307(b) of the Act, and by placing principal responsibility for pretreatment requirements on the municipalities and states involved. A lengthy report prepared in 1981 by EPA's contractor, JRB Associates, concludes that such a targeted approach would be most effective.[1] The report contains these principal findings:

1. Much progress has already occurred without national categorical standards. Many POTWs have successfully implemented local programs for years. These programs have significantly improved the quality of the nation's waters.[2]

2. The problems that exist with respect to water quality or sludge disposal are site-specific and cannot readily be solved by uniform, national standards. As the JRB report notes: "Upsets, bypasses, interference and sludge contamination are site-specific problems with site-specific solutions" (at 4-1).[3]

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[1] JRB Associates, Inc., "Assessment of the Impacts of Industrial Discharges on Publicly Owned Treatment Works" (Nov. 20, 1981).

[2] Table 1-1 of the JRB report illustrates this point. The volume of toxic metals discharged to POTWs has been reduced from 160 million to 56 million pounds per year, a two-thirds reduction, even though industry has not yet had to comply with national categorical standards. This information is based upon EPA Effluent Guidelines Division data that are several years old. Actual progress to date is probably even greater than indicated in the JRB report.

[3] The problems and solutions are site-specific in terms of the pollutant(s) of concern, the source(s) of the pollutant(s),

(footnote cont'd)

3. The application of national categorical standards will not appreciably reduce the number of water quality violations, where they exist. According to the JRB report, 54 percent of the POTWs discharge at levels meeting EPA's stringent water quality criteria in receiving waters, 27 percent exceed the criteria for one pollutant, and 19 percent exceed the criteria for two pollutants.[1] These water quality concerns should be addressed, but uniform application of national categorical standards is not an effective approach. The reported data indicate that only 61 POTWs (or 7 percent of the total not meeting the criteria) would comply with the criteria

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(footnote cont'd)

the nature of the concern (e.g., water quality, sludge use), and options for addressing the problem. In one case, for example, there might be a sludge use problem caused by cadmium; in another, there might be a water quality problem due to a toxic organic. The problem might be caused by a particular plant or industry, or it might be due to domestic users or storm water runoff. Even if a problem is caused by industrial users, they may or may not be within the 22 specific industry categories that would be subject to national categorical standards -- even if the full pretreatment program were developed by EPA. In most cases, the application of the national standards will miss the mark, being either too stringent or not sufficiently inclusive to do the job. See JRB report at 4-1.

[1] Id. at Ch. 3. The JRB report was based on EPA's published water quality criteria under Section 304(a) of the Act. These criteria are not water quality standards under Section 303 of the Act. Moreover, EPA's criteria have been widely criticized as unnecessarily stringent and based upon faulty methodology and data.

after implementation of categorical standards.[1] (See Table 4-3 of the JRB report.)

4. A targeted, local approach is clearly the most cost-effective option, rather than categorical standards.

> Targeted options require control actions only where there are water quality problems, whereas options that are untargeted require control actions regardless of local environmental conditions. (JRB report at 4-4). Regulation of the POTW provides the opportunity for the POTW to meet its effluent limitations (whether water quality based or technology based) in the most cost-effective manner. (Id. at 4-5).

These findings are consistent with the recommendations of the House Oversight Report, which unequivocally recommends that the use of national categorical pretreatment standards be abandoned.[2]

B. Alternative Local Programs

Congress should allow the implementation of local pretreatment programs in lieu of EPA categorical standards where the municipalities have the capability to develop and enforce such programs. This approach is consistent with

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[1] Categorical standards would address only a portion of the pollutants entering POTWs. POTWs also receive pollutants from domestic users, storm water runoff, as well as industrial users not subject to the categorical standards. It is thus unrealistic to think that implementation of national categorical standards will fully address any problems that exist.

[2] The House Oversight Report (at 62) states that steps should be taken immediately to allow municipal treatment authorities to implement their own pretreatment programs, which would include the establishment of local pretreatment standards.

recommendations of the Association of Metropolitan Sewerage Agencies and other interested organizations that testified before this subcommittee last year and endorsed the local program concept as a mechanism to add needed flexibility in pretreatment control.

The essential ingredient of this proposal is a local pretreatment program that would operate in lieu of EPA categorical standards where a POTW meets certain requirements. The POTW would have to develop and implement a local pretreatment program to control industrial dischargers as necessary to avoid interference with its operations and pass through of pollutants. Each POTW would bear the responsibility to address any particular problems confronting its treatment system. In addition, the POTW would have to be either achieving secondary treatment or be on a schedule of compliance. The POTW would of course have to show that it has adequate funding and other resources to implement its local program.

POTWs currently are required to obtain an NPDES permit from EPA or an approved state. That permit should assure that the POTW meets secondary treatment as well as water quality standards. In addition, a POTW must assure that its sludge meets applicable requirements. The POTW is in the best position to determine what pretreatment standards are necessary in order to solve local compliance problems and protect the integrity of the treatment system. Each POTW has a unique situation based on the nature of its treatment

system, the influent to that system, and the receiving stream to which it discharges. Rigid national categorical pretreatment standards leave no flexibility to address those unique problems.

Local pretreatment controls will direct resources to particular problems rather than to treatment for treatment's sake. For example, assume that a particular POTW is experiencing a serious cadmium problem (due to sludge use or water quality concerns) as a result of industrial discharges, but no other pollutants are of concern. In such a case, it would make more sense to allocate resources to cadmium reduction and control than to control a list of pollutants in categorical standards which would not solve the cadmium problem. Through a targeted effort on cadmium, it is quite likely that industry could achieve far greater reductions of cadmium at far lower costs than required by the national standards.

Congress has spent billions of dollars for central municipal treatment systems through the construction grants program. Industry should not be required to devote additional large amounts of resources for unnecessary and redundant treatment. Instead, industry pretreatment requirements should be established on a local basis by the entity which is in the best position to identify needed controls, namely the local municipal sewage treatment agency. We recognize that some POTWs may not have the inclination or resources to develop a

local program, and in those cases the EPA categorical standards would remain as a backup. However, we submit that where a POTW has the authority and resources, a locally-developed pretreatment program is the most effective means for accomplishing the objectives of the Act.

C. Implementation of Categorical Standards

Since under our proposal federal categorical standards would still be used in the absence of local programs, CMA wishes to note two additional problems with the national categorical standards that deserve the attention of Congress: removal credits and the combined wastestream formula. As discussed above, municipal authorities have uniformly criticized EPA's removal credit regulations as needlessly complex and unworkable.[1] EPA has taken a step in the right direction with its proposed national removal credit regulations, which provide for "automatic" approval of credits for eligible POTWs discharging certain metals covered in the regulations.[2] The Agency should be directed to simplify the removal credit regulations, including the procedures for POTWs to demonstrate removal levels, and to make national credits available for a greater number of pollutants that will be covered by categorical standards.

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[1] House Oversight Report, supra, at 42. See p. 17 above.

[2] 47 Fed. Reg. 42698 (Sept. 28, 1982).

The combined wastestream formula in 40 C.F.R. § 403.6(e) of EPA's regulations calculates effluent limitations applicable to plants with different processes subject to more than one categorical pretreatment standard. As a result of the formula and EPA's sequential, piecemeal approach to developing categorical standards, the pretreatment requirements applicable to complex manufacturing plants (so-called integrated facilities) change as EPA promulgates categorical standards.[1] These integrated facilities thus are subject to constantly changing discharge limitations. This makes it virtually impossible to properly design a treatment system. The Act should be amended to allow an integrated facility to comply up to three years after the promulgation of the last categorical standard applicable to the facility.[2]

III. EXTENSION FOR COMPLIANCE WITH BAT AND BCT EFFLUENT LIMITATIONS

Section 301(b) of the Act requires compliance by July 1, 1984, with BAT and BCT effluent limitations for toxic and conventional pollutants, respectively. When this deadline was established, Congress hoped that EPA could issue effluent limitations guidelines promptly, implement these guidelines in NPDES permits, and still allow sufficient time (3 to 3-1/2 years) to install treatment systems to achieve compliance.

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[1] See Cong. Rec. S.1011 (daily ed. Feb. 3, 1983) (remarks of Senator Randolph in introducing S.432).

[2] See also pages 26-27 below.

This date has become unreasonable in light of the fact that EPA has not been able to promulgate effluent limitations guidelines for many industry categories.[1] In particular, we understand that EPA will not be able to promulgate guidelines for the organic chemicals, plastics and synthetic fibers industry by the 1984 deadline.

Congress should extend the date for compliance with BAT and BCT limitations in order to allow EPA to complete its task of issuing regulations, and to provide sufficient time for industry to comply with NPDES permit requirements based on published effluent limitations guidelines as well as case-by-case permit requirements in the absence of guidelines. We support an extension of the deadline for compliance with BAT and BCT limitations to July 1, 1988.

Section 4 of H.R. 3282 recognizes the above problems with the 1984 deadline and would extend it to 1987 for BCT and to three years after limitations are established for BAT.

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[1] See p. 30 below. The House Oversight Report notes (at 29) that then current problems besetting the Agency "call into grave question whether the EPA is truly capable of putting into effect a genuinely workable, legally defensible and cost-effective regulatory scheme with which industry and local government can reasonably be expected to comply within the statutory deadlines." Since then, the delays in promulgating effluent limitations guidelines have continued. The House Oversight Report (at 62) recommends that this reality "be recognized sooner rather than later," and that the 1984 date for compliance be extended to compensate for EPA's delay in issuing effluent limitations guidelines.

While we agree with the general philosophy behind this extension, we believe that a July 1, 1988 deadline is warranted for BCT and BAT limitations. This should allow EPA to complete its promulgation of guidelines, which have repeatedly been delayed, and should allow EPA and the states some time to translate those guidelines into NPDES permits for particular facilities. Such an extension is likely to avoid the need for Congress to reexamine this deadline again.

In this regard, we should point out that a large manufacturing plant faces a moving BAT target as EPA promulgates guidelines for various categories that apply to that plant. As new guidelines are promulgated, the effluent limits that a plant subject to multiple guidelines must meet change. A July 1, 1988 deadline for BAT would alleviate this problem because presumably all applicable guidelines would have been promulgated well in advance of that date, leaving dischargers sufficient time to install the technology necessary to meet the final effluent limitations that reflect all of the applicable guidelines.[1] Thus, to enable permittees to construct treatment systems to meet BAT and BCT limits, and to avoid a

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[1] Our proposal assumes that the organic chemicals and other affected industries would have at least three years from the promulgation of effluent limitations guidelines to meet BAT requirements. Should EPA fall even farther behind in promulgating the guidelines, an extension beyond July 1, 1988 would be warranted.

moving target problem, there should be a common deadline for compliance with these sets of limitations.

We also note that H.R. 3282 fails to address Section 301(k) of the Act, which provides for an extension of time for BAT and BCT to allow for the use of innovative technology. The present deadline in Section 301(k) is July 1, 1987, which is three years after the current deadline for BAT and BCT. If this provision is to continue to have vitality, its deadline should be extended to three years beyond the new deadline established by Congress for BAT and BCT. Moreover, Section 301(k) now applies only to direct dischargers; that is, only plants that discharge directly into waters of the United States can qualify for an extension of the compliance time to allow for the use of innovative technology. Since pretreatment standards are based upon the use of appropriate technology, Congress should amend Section 301(k) to make it apply as well to indirect dischargers to publicly owned treatment works, allowing those qualifying dischargers who use innovative technology an additional three years to comply with applicable categorical pretreatment standards.

IV. WATER QUALITY STANDARDS

Section 6 of H.R. 3282 would codify detailed requirements governing the conditions under which a state may modify designated uses for water bodies and the establishment of water quality standards. This proposal runs counter to the basic

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philosophy in the Clean Water Act to give the states the primary responsibility for designating water uses and establishing water quality standards appropriate for those uses. The proposal would also interject undue rigidity into the water quality standards setting process. Finally, the proposed amendment is unnecessary, since EPA has indicated that it does not intend to promulgate the water quality standards regulations which apparently caused concern in Congress and gave rise to this Congressional proposal.

Congress has recognized that water quality standards must be flexible to respond to different needs.[1] Accordingly, authority to establish such standards has been vested in the states which are best able to judge the appropriate uses of their waters. Section 303 of the Act requires states to establish water quality standards consisting of designated uses of water bodies and water quality criteria based upon such uses. The Act does not authorize the imposition of a national standard. Section 303(a) of the Act incorporates prior law, which expressly envisioned the classification of waters for multiple uses. Sections 101(b) and (g) of the Act also reflect the policy of Congress to preserve the primary responsibilities of the states to prevent and reduce pollution, and to plan the development and use of land and water resources.

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[1] See Appendix V below.

Proposed Section 6 would curb the authority of the states by dictating which pollutants must be considered and limited in establishing state water quality standards and by curbing the authority of states to designate water uses. Section 6 is based on EPA's existing water quality regulations, which more than adequately address these issues.[1]

The impetus for Section 6 was EPA's proposal in October, 1982 to modify those regulations in a way that some members of Congress apparently found troubling. EPA has reportedly now indicated that it will not promulgate the controversial provisions of the October, 1982 proposal. We therefore see no need for legislation to amend the water quality provisions of the Act. Doing so would add more rigidity to a program where flexibility is needed, and would remove from EPA and the states authority that is best left in their hands.

V. POST-BAT REQUIREMENTS

Section 7 requires the Administrator to identify waters within each state that, in the Administrator's opinion, are not expected to meet water quality due to discharges of toxic pollutants from point sources. Within one year after publishing the list of such waters, the Administrator is required to propose regulations setting forth an individual

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[1] See 40 C.F.R. § 35.1550.

control strategy for each noncomplying water body. After promulgation, each strategy must be implemented by modifying discharge permits issued to direct dischargers under Section 402 of the Act. This provision is neither necessary nor appropriate at this time; it ignores entirely problems caused by non-point source discharges which may far exceed problems created by direct discharges, and it would usurp the role of the states in setting water quality standards and issuing NPDES permits. CMA urges that Congress direct EPA to conduct a thorough study of the current quality of the nation's waters. The results of this study will allow all concerned to make better judgments as to the need to improve current programs.

A. Post-BAT Requirements Are Premature and Inappropriate.

Proposed Section 7 is premature. EPA is only now promulgating BAT effluent limitations guidelines for major segments of American industry. According to EPA's latest schedule for guidelines promulgation that was submitted to the court in connection with the NRDC Consent Decree litigation, EPA does not expect final promulgation of all BAT effluent limitations guidelines before November, 1984. It will then generally take at least three years for permit limits to be established and for the technology necessary to meet the guidelines to be designed, installed and operational. Any

designation of waters that fail to meet water quality standards should be deferred until BAT technology has been installed. Only then will it be possible to ascertain what additional controls on point sources beyond BAT, if any, are necessary to meet water quality standards.

In addition, Section 7 fails adequately to address problems caused by non-point source discharges. As noted earlier, significant progress has been made to date in cleaning up our nation's waters as a result of controls on point source industrial dischargers. When viewed as a whole, industrial discharges no longer pose major environmental problems. As a result, more stringent controls on direct point source discharges will not result in appreciable gains in water quality. In contrast, significant sources of non-point source pollution, such as runoff from farms and urban areas, have not yet been effectively controlled.[1] EPA has itself noted that "control of non-point source pollution has not progressed as fast as control of point sources" and that levels of conventional pollutants in surface waters has not noticeably improved in recent years "because non-point sources

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[1] See "National Water Quality Goals Cannot Be Attained Without More Attention To Pollution From Diffuse Or 'Nonpoint' Sources," Comptroller General of the United States (Dec. 20, 1977).

are responsible for much of these pollutants."[1] This conclusion was confirmed recently by the Business Roundtable study. Data in that study indicate that urban runoff and other non-point sources can be significant contributors of priority pollutants, especially metals, to our nation's waters.[2] Further progress in improving water quality can be made in a comprehensive and effective manner only if prompt attention is given to non-point source pollution and its control.

Finally, Section 7 would fundamentally alter the way in which water quality standards are established under the Act. As noted earlier, the development of water quality standards has always been the primary responsbility of the states, subject to oversight by EPA.[3] There is a good reason for this allocation of responsibility since states are in a better position than the federal government to know what limitations are necessary to achieve designated water quality, based upon local needs and conditions. Section 7 would transfer this authority away from local authorities to the federal EPA. Removing the decision-making authority from the entities better equipped to exercise that authority would be

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[1] See Environmental Outlook 1980, United States Environmental Protection Agency, Office of Research and Development, No. 600/8-80-003 at 409.

[2] Business Roundtable study at 5-33 to 5-45.

[3] See Appendix V below.

ill-advised. This is especially true in light of the fact that there are no compelling reasons for making such a radical change. Primary responsibility for setting water quality standards should remain with the states.

B. The Need for Data on the Quality of the Nation's Waters

Instead of enacting legislation to address post-BAT concerns before BAT has even been implemented nationally, Congress should direct EPA to gather necessary data on the quality of our nation's waters to determine what problems, if any, remain and the source of those problems. The inadequacy of the data necessary to assess the quality of our nation's waters is a long-standing problem. The 1976 report of the National Commission on Water Quality contains the following recommendations as to water quality research:

> The Congress should encourage accelerated research on the identification and measurement of toxic pollutants and their effects, sources of toxic pollutants in the environment and the nation's waters, the fate of toxic pollutants in the aquatic environment and their impacts upon organisms and upon human health, and the identification of sound control technologies for the elimination of toxic pollutants.
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> This is an area in which the level of understanding is severely limited. It must be increased and refined if the nation is to adequately assure the protection of the health and safety of its citizens and their natural environment.[1]

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[1] Final Report of the National Commission on Water Quality, H. Doc. No. 94-418, 94th Cong., 2d Sess. 10, 31-32 (1976).

Yet, despite this recognition in 1976 of the lack of required data, the problem of inadequate data still exists. In a major EPA report entitled Environmental Outlook 1980,[1] the Agency stated that a "major limitation" on the Agency's ability to assess trends in water quality associated with point source discharges is "the incomplete coverage of toxic substances . . . [stemming] from a lack of data to base projections on." In response to a question last year from the House Subcommittee on Water Resources, EPA stated that "EPA does not believe that current monitoring programs are focused on the right kinds of data collection to support Clean Water Act requirements for . . . planning, or evaluation of trends."[2] The time has come to address this fundamental problem head on.

Certain provisions of the Act already require EPA to undertake studies to assess the quality of the nation's waters. Section 104(a) of the Act requires EPA to conduct investigations concerning the pollution of any navigable waters and establish a water quality surveillance system. Section 305 requires states to prepare reports biennially describing the water quality of all navigable waters and EPA to submit such reports, together with an analysis of them, to Congress.

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[1] United States Environmental Protection Agency, Office of Research and Development, No. 600/8-80-003 at 243.

[2] 1982 House Hearings at 104. A 1982 study for CMA by Environmental Resources Management came to the same conclusion. See Appendix VI below.

These provisions have not, however, produced the required data. Congress should strengthen these provisions by describing more fully what data are to be included in the reports and by providing adequate funding for the studies. Alternatively, Congress should adopt a wholly new provision requiring EPA to undertake a comprehensive analysis of the quality of our waters, taking into account attainable uses of those waters as designated by the states.[1] In particular, EPA should be required to obtain reliable and analytically sound data on the amount of pollutants still present in our waters, the effect of such pollutants, and their sources. Only when such data have been compiled and analyzed can Congress intelligently decide what point source controls beyond BAT, if any, are necessary.

CONCLUSION

This testimony discusses key areas in which Congress should reassess and modify current provisions of the Clean Water Act to make it a more workable vehicle for protecting the environment in a reasonable manner. CMA is prepared to cooperate with the Congress to address these issues in a constructive manner.

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[1] We urge that EPA undertake the study promptly, recognizing that the initial data will reflect pre-BAT water quality. CMA envisions that the study will be ongoing, so that post-BAT data can be compared with the initial study results.

APPENDIX I

CMA/EPA FIVE PLANT STUDY

An analysis was conducted by Engineering-Science, Inc. (ES) for the Chemical Manufacturers Association (CMA) on the data base developed by a cooperative study among CMA, the U.S. Environmental Protection Agency (EPA), and five organic chemical plants that participated in this project. The study was a substitute for the 530 plant, 30 day, self-monitoring program that EPA proposed in a Federal Register notice of October 10, 1979.

The study was structured to develop a long-term (4 to 6 days/week for 4 to 6 weeks) data base on the removal of priority organics by representative, well-designed and operated biological treatment plants within the organic chemicals industry. EPA through contract laboratories analyzed all of the samples. A CMA contractor analyzed about 25 percent and four of the participating plants analyzed from 25 to 100 percent of the samples. Each plant also analyzed influent and effluent samples for selected conventional and nonconventional pollutants.

An extensive quality control/quality assurance program was incorporated into this effort to assure that the reliability of the analytical results could be properly defined.

Based upon the study results, the following major conclusions were drawn from the CMA report:

- Data collected indicate that priority organic pollutants in all groups (volatiles, base/neutral, and acid) are removed, with few exceptions, to or below the 10 parts per billion detection limit accepted in this study. Thus, one can conclude that the five biological wastewater treatment facilities installed to meet BPT provide sufficient removal of most priority organic pollutants to be designated as BAT technology consistent with the Clean Water Act of 1977.

- Analytical method precision and accuracy as measured by intralaboratory repeatability, interlaboratory reproducibility and recovery of known spikes remain as the dominant limiting factor controlling the use of priority organic pollutant data. For example, for a single laboratory, if a volatile organic pollutant were measured in a single sample as 100 ppb, a second analysis of that same sample could yield a result as low as 20 ppb or as high as 500 ppb.

- Analysis of the study results provides strong confirmation that conventional and nonconventional pollutants cannot be used as indicators of the presence of priority organic pollutants in biologically treated effluents from the organic chemicals industry.

CMA FIVE PLANT STUDY
TREATMENT SYSTEM PERFORMANCE FOR ORGANIC PRIORITY POLLUTANTS

Compound	Waste Treatment Influent Geometric Mean (ppb)	Waste Treatment Influent Number of Detections	Waste Treatment Effluent Geometric Mean (ppb)	Waste Treatment Effluent Number of Detections	Percent Removal
VOLATILE POLLUTANTS					
Acrylonitrile	10,300	47	65	3	99
Benzene	581	129	6	58	99
Bromomethane	1,250	9	ND	0	100
Bromodichloromethane	20	29	5	9	75
Carbon tetrachloride	51	3	ND	0	100
Chlorobenzene	20	29	16	1	20
Chloroethane	12	19	5	2	58
Chloroform	348	63	13	62	96
Dibromochloromethane	6	22	ND	0	100
1,1-dichloroethane	9	22	5	1	44
1,2-dichloroethane	524	73	9	64	98
1,1-dichloroethene	42	53	ND	0	100
t-1,2-dichloroethene	42	7	5	3	88
1,2-dichloropropane	138	54	7	27	95
1,3-dichloropropene	148	47	6	19	96
Ethylbenzene	283	107	5	25	98
Methylene chloride	17	61	9	58	47
1,1,2,2-tetrachloroethane	17	2	5	1	71
Tetrachloroethene	6	31	5	3	17
1,1,1-trichloroethane	7	38	5	19	29
1,1,2-trichloroethane	12	15	5	1	58
Trichloroethene	7	31	5	19	29
Trichlorofluoromethane	ND	0	8	4	–
Toluene	4,500	112	7	51	100
Vinyl chloride	6	4	ND	0	100
All Volatile Pollutants	166	1,007	8	430	95

Compound	Waste Treatment Influent Geometric Mean (ppb)	Number of Detections	Waste Treatment Effluent Geometric Mean (ppb)	Number of Detections	Percent Removal
		BASE/NEUTRAL POLLUTANTS			
Acenaphthene	84	9	5	2	94
Acenaphthylene**	65	10	5	3	92
Anthracene[1]/Phenanthrene[1]	62	14	6	6	90
Benzo(a)anthracene[2]/ Chrysene[2]	20	10	8	6	60
Benzo(b)fluoranthene[3]/ Benzo(k)fluoranthene[3]	11	10	11	7	0
Benzo(a)pyrene	13	11	16	2	-
Bis(2-ethylhexyl)phthalate	24	47	28	44	-
Butylbenzylphthalate**	12	5	5	1	58
Chrysene	ND	0	5	1	-
Dibenzo(a,h)anthracene	15	1	75	1	-
Di-n-butylphthalate	86	44	6	24	93
1,3-dichlorobenzene[4]/ 1,4-dichlorobenzene[4]	5	1	ND	0	100
1,2-dichlorobenzene	331	43	28	17	92
Diethylphthalate**	134	36	9	19	93
Dimethylphthalate	46	31	5	8	89
Dioctylphthalate	28	6	5	3	82
Fluoranthene	17	19	6	7	65
Fluorene	56	10	5	1	91
Isophorone	650	1	ND	1	100
Naphthalene	802	11	6	5	99
Nitrobenzene	3,000	32	91	2	97
Pyrene	17	19	6	10	65
1,2,4-trichlorobenzene**	234	46	39	39	83
All Base/Neutral Pollutants	119	416	15	208	87
		ACID POLLUTANTS			
4-chloro-3-methylphenol	ND	0	8	2	-
2-chlorophenol	53	57	35	23	34
2,4-dichlorophenol	347	43	24	33	93
2,4-dimethylphenol	270	12	5	8	98

Compound	Waste Treatment Influent Geometric Mean (ppb)	Waste Treatment Influent Number of Detections	Waste Treatment Effluent Geometric Mean (ppb)	Waste Treatment Effluent Number of Detections	Percent Removal*
		ACID POLLUTANTS (CONT'd)			
2,4-dinitrophenol	673	44	59	6	91
2-nitrophenol	40	38	9	4	78
Pentachlorophenol	216	49	115	57	47
Phenol	171	137	10	55	94
2,4,6-trichlorophenol	100	89	53	72	47
All Acid Pollutants	150	469	34	260	77

1,2,3,4 - Reported as isomer pairs

ND - not detected

** - There was some question in the proper identification of these compounds in some of the samples, based on the following information:

(1) 1,2,4-trichlorobenzene - most likely the co-isomer, 2,4,6-trichlorobenzene, which is not on the priority pollutant list.
(2) Diethylphthalate - interference with dimethyl nitroaniline which coelutes with the phthalate ester.
(3) Acenaphthylene - interference with dichloroaniline or biphenyl which coelutes with acenaphtylene.
(4) Butylbenzylphthalate - most likely a product from a manufacturing process and not the phthalate ester.

APPENDIX II

PRIORITY POLLUTANT REMOVAL DATA FOR PLANT "SC"

LIMIT COMPOUND UG/L	MEAN INFLUENT CONCENTRATION UG/L	MEAN EFFLUENT CONCENTRATION UG/L	PERCENT REMOVAL	# TIMES IN EFFLUENT
VOLATILES				
ACROLEIN	15	---	99+	0*
ACRYLONITRILE	10,438	11	99.9	1
BENZENE	234	9	96.2	2
CARBON TETRACHLORIDE*	---	---	---	0*
CHLOROBENZENE*	---	---	---	0*
CHLOROETHANE	3,371	133	96.1	1
CHLOROFORM	2,230	3	99.9	1
1,2 DICHLOROETHANE	1,043	---	99+	0*
ETHYLBENZENE	---	0	99+	0
METHYL CHLORIDE	155	0	99+	0
METHYLENE CHLORIDE	2,535	655	74.2	2
TETRACHLOROETHYLENE*	---	---	---	0*
TOLUENE	674	---	99+	0*
VINYL CHLORIDE*	---	---	---	0*
ACID EXTRACTION				
PHENOL	111	---	99+	0*
BASE/NEUTRAL EXTRACTION				
DICHLOROBENZENE(TOTAL)	100	13	87	1
DIETHYL PHTHALATE	---	0	99+	0
DIMETHYL PHTHALATE*	---	---	---	0*
DI-N BUTYL PHTHALATE	53	---	99+	1
DI-N OCTYL PHTHALATE	280	17	93.9	0
FLUORENE	49	0	99+	0
ISOPHORONE	643	0	99+	0
NAPHTHALENE	283	0	99+	0

NOTES:

ORGANIC COMPOUND DATA COLLECTED 8 TIMES FROM 1/80-5/82

0*= DETECTED BELOW 10 UG/L, BUT NOT QUANTIFIABLE

PRIORITY POLLUTANT REMOVAL DATA FOR PLANT "IN"

COMPOUND	MEAN INFLUENT CONCENTRATION UG/L	MEAN EFFLUENT CONCENTRATION UG/L	PERCENT REMOVAL	# TIMES IN EFFLUENT
VOLATILES				
ACROLEIN	48,000	0	99+	0
ACRYLONITRILE	29,350	0	99+	0
BENZENE	7,440	0	99+	0
CARBON TETRACHLORIDE	27	0	99+	0
CHLOROBENZENE	3	0	99+	0
CHLOROFORM	15,605	111	99.3	7
1,2 DICHLOROETHANE	28	0	99+	0
ETHYLBENZENE	540	0	99+	0
METHYL CHLORIDE	84	0	99+	0
METHYLENE CHLORIDE	1,765	13	99.3	4
TOLUENE	32,273		99+	0
1,1,1 TRICHLOROETHANE	340	0	99+	0
TRICHLOROFLUOROMETHANE	95	0	99+	0
ACID EXTRACTION				
2,4 DIMETHYL PHENOL	51	0	99+	0
PHENOL	439	0	99+	0
BASE/NEUTRAL EXTRACTION				
ANTHRACENE	18	0	99+	0
BENZO(A)PYRENE	26	0	99+	0
BIS(2-ETHYLHEXYL)PHTHALATE	1,581	0	99+	0
1,2 DICHLOROBENZENE	23,047	8	99.9	2
1,3 DICHLOROBENZENE	1,310	0	99+	0
1,4 DICHLOROBENZENE	37,500	12	99.9	2
DI-N BUTYL PHTHALATE	128	0	99+	0
2,4 DINITROTOLUENE	1,820	64	96.5	1
2,6 DINITROTOLUENE	3,770	124	96.7	2
DI-N OCTYLPHTHALATE	37	0	99+	0
ISOPHORONE	13,903	0	99+	0
NAPHTHALENE	6,516	0	99+	0
NITROBENZENE	1,000	0	99+	0
PHENANTHRENE	18	0	99+	0
PYRENE	25	0	99+	0

NOTES:

BASED UPON ANALYSES OF 8 SAMPLES BETWEEN 8/78 AND 4/81
DETECTION LIMIT = 10 UG/L

PRIORITY POLLUTANT REMOVAL DATA FOR PLANT "TA"

COMPOUND	MEAN INFLUENT CONCENTRATION UG/L	PERCENT REMOVAL	MEAN EFFLUENT CONCENTRATION UG/L	# TIMES IN EFFLUENT UG/L
VOLATILES				
ACROLEIN	4182	99+	0	0 (A)
BENZENE	7378	99.2	58	103 (C)
BROMOFORM	18	99+	0	0 (B)
CARBON TETRACHLORIDE	869	99.8	2	44 (B)
CHLOROBENZENE	5.8	99+	1	74 (C)
CHLOROETHYL VINYL ETHER	31	99+	0	0 (B)
CHLOROFORM	95	90.5	9	107 (C)
1,2 DICHLOROETHANE	1584	93.8	98	113 (C)
1,1 DICHLOROETHYLENE	19	----	33	41 (B)
1,2 DICHLOROPROPYLENE	7	99+	0	0 (B)
ETHYLBENZENE	482	95.5	21	67 (C)
METHYLENE CHLORIDE	2910	97.2	81	107 (C)
1,1,2,2 TETRACHLOROETHANE	61	99+	1	85 (C)
TOLUENE	5711	99.8	10	105 (C)
1,2 TRANS-DICHLOROETHYLENE	20	99+	1	87 (C)
1,1,1 TRICHLOROETHANE	48	62.5	18	19 (A)
TRICHLOROFLUROMETHANE	2	----	23	41 (B)
TRICHLOROETHYLENE	116	99+	1	83 (C)
ACID EXTRACTION				
2,4 DIMETHYL PHENOL	247	99+	1	31 (B)
PHENOL	1862	99.0	19	35 (B)
ACENAPHTHYLENE	230	99+	1	37 (B)
ANTHRACENE	13	99+	1	37 (B)
BASE/NEUTRAL EXTRACTION				
BIS (2-ETHYLHEXYL) PHTHALATE	1451	----	2880	23 (B)
DI N BUTYL PHTHALATE	62	----	871	39 (B)
DI N OCYTL PHTHALATE	197	55.3	88	23 (B)
NAPHTHALENE	997	99.2	8	44 (B)

1977-1982 data; minimum 17 analyses

(A) = 20 analyses

(B) = 20-50 analyses

(C) = 50 analyses

APPENDIX III

ANALYSIS OF DU PONT PLANT SITE WASTEWATERS FOR PRIORITY POLLUTANTS

In 1978 the Du Pont Company embarked on a Company-wide sampling and analytical program for 128 of the 129 "priority pollutants" in plant intake, outfall, raw waste, and treated effluent streams at 72 manufacturing sites. This program was completed at substantial cost in 1979. The analytical work was performed by the Acurex Corporation of Mountain View, California, using EPA methods. Generally each plant had a single sampling campaign; our large number of plants provides a sizable data base.

Over 36,000 analytical results (128 analyses on each of 285 samples) were compiled and evaluated. In general the report provides convincing evidence that Du Pont's present treatment facilities do an excellent job of priority pollutant control.

Data from activated sludge facilities provide one example of this control. Du Pont now treats essentially all of its discharges from the Organics, and Plastics and Synthetics Manufacturing Point Source Categories by activated sludge technology. The study showed that concentrations of 300 ppb or less (proposed as the BAT limit for priority pollutants in another industry) were achieved in 99.6% of the analyses on 23 samples of activated sludge effluents.

The Du Pont Company believes that not only activated sludge but also the other biological and physical-chemical treatment practices employed at our plants are doing the job for priority pollutant control. The median analytical result for all final outfalls is less than 20 ppb for each pollutant which was detected. The frequency at which pollutants were found at levels above 1,000 ppb was 0.3% of all final outfall analyses when those not detected are included in the calculation.

The analytical methods used were intended more for screening effluents for the presence of various compounds, rather than a precise determination of concentrations. Consequently, the values might be stated better as detected rather than in precise numbers, especially for concentrations less than 100 ppb.

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ANALYSES OF DU PONT SITE WASTEWATERS FOR PRIORITY POLLUTANTS*

INORGANICS

Compound	Waste Treatment Influent		Waste Treatment Effluent		Final Outfall	
	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)
Antimony (total)	22	26	29	20	60	14
Arsenic (total)	22	15	20	29	44	16
Beryllium (total)	8	2	6	1	19	1
Cadmium (total)	23	2	21	1	54	1
Chromium (total)	37	98	35	29	83	24
Copper (total)	39	55	36	22	98	30
Lead (total)	26	27	22	30	65	15
Mercury (total)	10	2	7	1	31	3
Nickel (total)	22	79	23	44	49	41
Selenium (total)	20	26	21	20	40	20
Silver (total)	25	2	27	2	72	2
Thallium (total)	2	13	5	4	10	6
Zinc (total)	38	281	38	143	96	98
Cyanides	35	16	38	13	93	9

*Note: A total of 201 wastewater samples were analyzed in this study; 42 samples of waste treatment influents, 43 samples of waste treatment effluents, and 116 samples of final outfalls.

VOLATILE ORGANICS

Compound	Waste Treatment Influent		Waste Treatment Effluent		Final Outfall	
	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)
Benzene	18	15	9	6	30	6
Bromoform	4	8	3	6	9	11
Carbon Tetrachloride	6	20	5	6	18	24
Chlorobenzene	5	38	3	42	5	7
Chlorodibromomethane	5	21	4	6	9	17
Chloroethane	0	ND	0	ND	1	2
Chloroform	30	21	29	10	85	15
Dichlorobromomethane	15	10	8	9	24	5
Dichlorodifluoromethane	0	ND	0	ND	1	200
1,1-Dichloroethane	0	ND	0	ND	4	11
1,2-Dichloroethane	2	2	3	14	10	7
1,1-Dichloroethylene	1	75	1	200	5	37
1,2-T-Dichloroethylene	0	ND	1	10	10	22
1,2-Dichloropropane	1	16	0	ND	6	13
1,2-Dichloropropylene	0	ND	0	ND	2	3
Ethylbenzene	11	18	4	28	17	10
Methylene Chloride	27	44	21	30	73	27
Methyl Chloride	3	31	2	7	7	17
1,1,2,2-Tetrachloroethane	1	5	1	1	9	6
Tetrachloroethylene	12	15	5	8	22	9
Toluene	19	29	11	21	35	26
1,1,1-Trichloroethane	9	6	16	6	38	9
1,1,2-Trichloroethane	0	ND	0	ND	4	7

Compound	Waste Treatment Influent		Waste Treatment Effluent		Final Outfall	
	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)
Trichloroethylene	4	12	2	6	18	9
Trichlorofluoromethane	2	8	1	50	3	14
Vinyl Chloride	0	ND	0	ND	1	20

ND - not detected

EXTRACTABLE ORGANICS

Compound	Waste Treatment Influent		Waste Treatment Effluent		Final Outfall	
	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)
Acenaphthene	1	12	0	ND	1	1
Benzo(ghi)perylene	0	ND	0	ND	1	8
Bis(2-chlorethoxy)methane	0	ND	0	ND	2	28
Bis(2-chlor 1-prop)ether	1	80	0	ND	0	ND
Bis(2-ethylhexl)phthalate	22	14	26	8	72	6
Butyl Benzyl Phthalate	8	13	8	4	14	4
2-Chloronaphthalene	0	ND	0	ND	2	5
Chrysene	1	1	0	ND	0	ND
Di-N-Butyl Phthalate	9	5	14	2	35	3
1,2-Dichlorobenzene	3	15	3	76	8	11
1,3-Dichlorobenzene	1	3	0	ND	0	ND
1,4-Dichlorobenzene	4	5	1	110	5	6
Diethyl Phthalate	4	5	10	3	22	3
Dimethyl Phthalate	10	5	6	10	15	4
2,4-Dinitrotoluene	1	7	6	8	7	6
2,6-Dinitrotoluene	0	ND	2	27	2	6
1,2-Diphenylhydrazine	0	ND	0	ND	1	9
Fluoranthene	3	1	0	ND	3	2
Fluorene	1	16	0	ND	2	1
Hexachlorobenzene	0	ND	0	ND	1	1
Indeno(1,2,3-C,D)Pyrene	0	ND	0	ND	1	3
Isophorone	2	35	1	10	1	2
Naphthalene	4	94	1	2	8	4

Compound	Waste Treatment Influent		Waste Treatment Effluent		Final Outfall	
	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)	Frequency of Detection	Geometric Mean (ppb)
Nitrobenzene	1	4,000	2	34	0	ND
N-Nitrosodiphenylamine	1	1	1	1	5	6
Phenanthrene	4	11	2	11	10	3
Pyrene	5	2	0	ND	4	2
1,2,4-Trichlorobenzene	0	ND	1	130	1	4
4-Chloro-M-Cresol	1	37	0	ND	0	ND
2-Chlorophenol	1	19	1	2	3	9
2,4-Dichlorophenol	1	10	2	2	5	2
2,4-Dimethylphenol	3	255	1	40	3	4
4,6-Dinotro-o-Cresol	1	150	1	6	0	ND
2,4-Dinitrophenol	1	30,000	0	ND	1	10,000
2-Nitrophenol	4	259	2	14	3	10
4-Nitrophenol	4	290	3	21	7	11
Pentachlorophenol	1	2	2	2	2	2
Phenol	19	47	6	19	20	10
2,4,6-Trichlorophenol	0	ND	1	2	3	5
Acrolein	1	14,000	0	ND	0	ND
Acrylonitrile	1	165,000	0	ND	0	ND

ND - not detected

APPENDIX IV

PRIORITY POLLUTANTS DETECTED IN THE BEAUMONT PLANT NECHES RIVER SAMPLING AND ANALYTICAL PROGRAM
(All Data in μg/ℓ)

"Only Detected Priority Pollutants Are Listed"

Pollutant[1]	Upstream Stations: No. 1 - 12 Miles	Upstream Stations: No. 2 - 1.5 Miles	Plant Outfall No. 3	Downstream Stations: No. 4 - Mixing Zone	Downstream Stations: No. 5 - 1.5 Miles
Volatile Organics					
Acrolein	(2)		11/<10[3]		
Acrylonitrile			14/<10	<10/<10	
Benzene			10/<10		
Bromodichloromethane			160/79		
Carbon tetrachloride			1100/1500		
Chloroform		<10/<10	740/450		<10/ND[4]
Dibromochloromethane			59/23		
1,2-Dichloroethane			<10/<10		
1,2-Dichloropropane			41/18		
Tetrachloroethene			<10/<10		
Toluene	ND/<10	ND/<10			
Semi-Volatile Base/Neutrals					
Bis(2-ethylhexyl)phthalate	<10/<10	<10/<10	<10/<10	ND/<10	ND/<10
Dibutyl phthalate	ND/<10	ND/<10		ND/<10	ND/<10
Diethyl phthalate	ND/<10				
Dimethyl phthalate	<10/ND				
Semi-Volatile Acids					
2,4-Dinitrophenol			340/400		
2-Nitrophenol			<5/<5		
Pentachlorophenol			<5/ND		
Phenol			<5/ND		
Metals					
Antimony		12/8		3/7	9/10
Beryllium	3/ND				ND/0.5
Chromium			100/100		
Copper	11/17	37/42	26/18	37/18	46/37
Mercury		ND/0.2			
Silver		65/47		52/37	73/57
Zinc	69/14	30/17	63/67	63/ND	23/41
Other Compounds					
Total phenolics			ND/50		

Notes:

(1) All currently listed priority pollutants were analyzed; only those detected at least once are listed here.

(2) Blank indicates pollutant nondetected for both sample days.

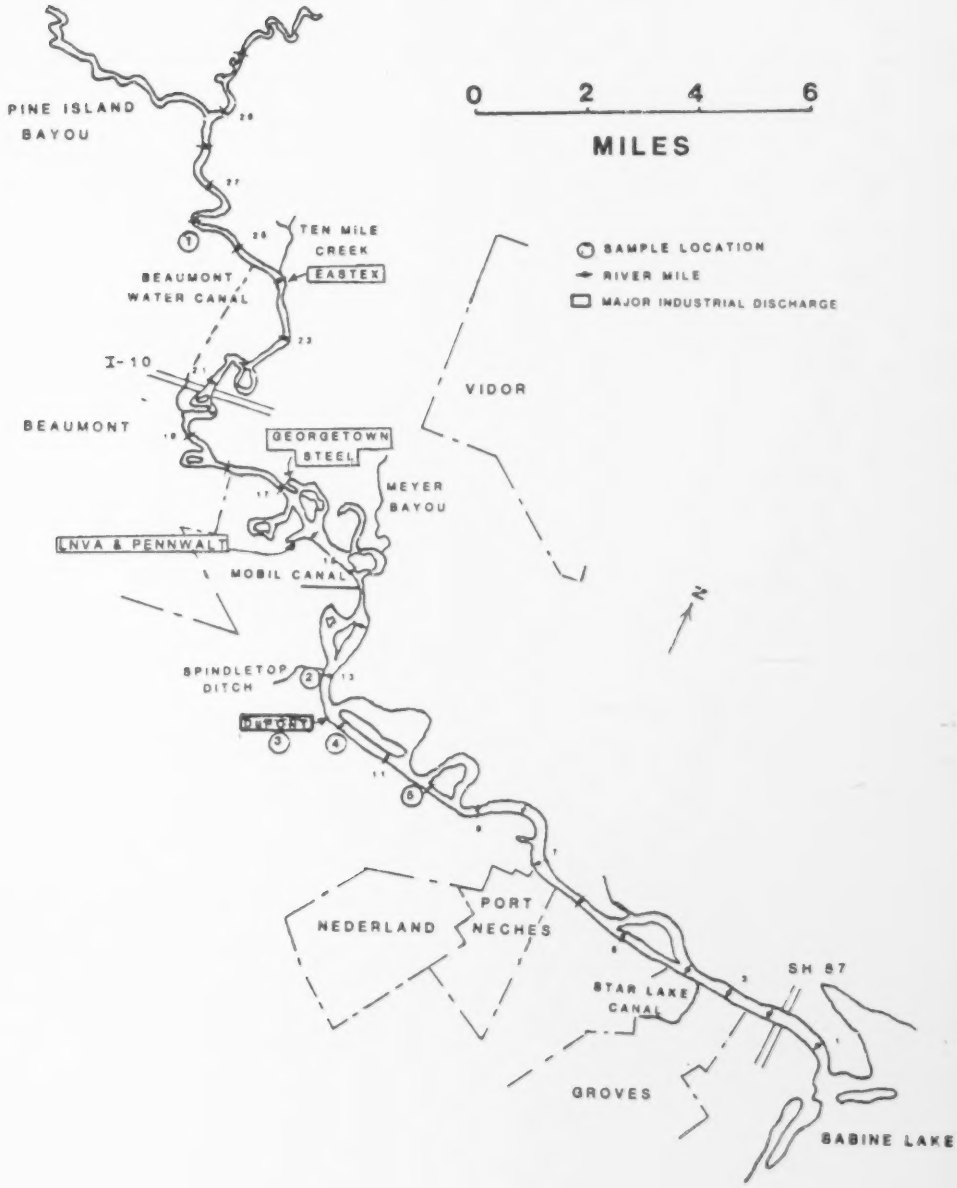
(3) Left-hand number - July 26-27 sample results.
Right-hand number - July 28-29 sample results.

<10 - pollutant detected but not in sufficient concentration for accurate quantification.

(4) ND - not detected

NECHES RIVER STUDY AREA

FIGURE 1



APPENDIX V

The Role of the States

A major factor that must be taken into account in considering the way in which water quality standards are to be developed is the primary role that Congress has given to the states in this area. Section 101(b) of the 1972 Act provides: "It is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources . . . ." In addition, Section 303(c), like Section 10(c) in the 1965 Act, directs the states, and not EPA, to consider certain factors in developing water quality standards. Although Section 303(c)(2) requires the state to submit its standards to EPA for approval, EPA's power of review is limited to cases where, under Sections 303(c)(3) and (4), a state's standards are determined by the Agency to be inconsistent with the requirements of the Act.[1]

The reasons Congress placed primary responsibility for developing water quality criteria and standards on the states are also evident from the Act. The uses and criteria to be established for individual water segments may only be

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[1] See A Legislative History of the Water Pollution Control Act Amendments of 1972, Cong. Research Service, Comm. Print No. 93-1, 93rd Cong., 2d Sess. 792 (1973).

derived from hydrological and biological data specific to the particular water segment involved. Congress has recognized that this job is better accomplished by the states on an individual basis with review by EPA, rather than by EPA on a national basis.

Congress was also concerned, as evidenced by Section 101(b) above, to protect states' rights to exercise traditional land-use powers. Section 101(g), added in 1977, states a complementary policy: "that the authority of each state to allocate quantities of water within its jurisdiction shall not be . . . impaired by this Act." The amount of water available for allocation is, of course, directly related to the permissible uses of that water segment. If EPA determines that use, states' authority to allocate water would be impaired in contravention of the Act. Section 101(g) was intended to clarify, not change, existing law,[1] and thus supports the view that the 1972 Act, like its predecessor, establishes a regime of multiple uses determined by individual states.

Even beyond water rights, designation by the state of permissible uses of water directly affects the uses of lands adjoining the water. Such land planning is clearly within the traditional authority of individual states -- authority Congress did not intend to circumscribe. EPA

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[1] See A Legislative History of the Clean Water Act of 1977, Cong. Research Service, Comm. Print No. 95-14, 95th Cong., 2d Sess. 236 (1978).

recognized this fact when it announced its 1972 water quality criteria:

> The fundamental point of departure in evaluating criteria for water quality in this Report is that the assignment of a level of quality is relative to the use man makes of that water. To evaluate the quality of water required for various uses, it is essential to know the limits of quality that have a detrimental effect on a designated use. As a corollary, in deciding whether or not water will be of suitable quality, one must determine whether or not the introduction into, or presence of any material in the resource, interferes with, alters, or destroys its intended use. Such decisions are subject to political, social, and economic considerations.[1]

Despite granting individual states primary responsibility for developing water quality standards, Congress has allotted EPA two important roles in this area. The first is the limited supervisory function under Sections 303(c)(3) and (4) under which EPA exercises review functions over the requirements of the Act. EPA's second role involves the assembling and dissemination of information under Section 304(a) of the Act. Congress recognized that states must have access to current scientific and technical information, and that resource limitations and the burdens of duplication warranted placing responsibility upon EPA in this area. However, Section 303(c) of the Act preserves the primary role of the states in establishing water quality standards.

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[1] EPA, "Water Quality Criteria (1972)" at 4.

Mr. ROE. Please proceed.

TESTIMONY OF ROBERT A. MATTHEWS, CHEMICAL MANUFACTURERS ASSOCIATION

Mr. MATTHEWS. Thank you, Mr. Chairman and members of the subcommittee.

I am pleased to be appearing this morning on behalf of the Chemical Manufacturers Association to discuss with you possible amendments to the Clean Water Act. I will try to focus my remarks this morning on what we perceive to be the most critical amendments that Congress might consider in this reauthorization process.

CMA has frequently stated its belief that the Clean Water Act should be amended to provide for alternative mechanisms for implementing increasingly stringent effluent limitations. For those dischargers that go to publicly-owned treatment works, the indirect dischargers, we believe such a mechanism is one that would avoid redundant treatment by allowing POTW's to establish and implement local pretreatment programs, which would be designed to protect the environment, in lieu of the national categorical pretreatment standards.

For direct dischargers, CMA believes that the proper mechanism is one that would avoid treatment for treatment's sake by allowing permittees the opportunity to demonstrate that modified limitations would continue to protect receiving water quality.

I would like specifically to focus on the next level of technology requirements we are facing, the best available technology, or BAT, requirements which have been or soon will be established for all of industry, including CMA member companies.

CMA believes that since the passage of the Clean Water Act Amendments of 1972 and 1977, new facts have created new imperatives which Congress should act on. Today, we know a lot more than we did in 1977 about the effective control of toxic, or priority, pollutants. As required by the statute, by 1977 industry had installed the first level of technology requirements, the best practicable control technology, or BPT. These controls have removed large quantities of pollutants, as evidenced by both EPA and industry data. For example, the data from the 1982 CMA/EPA five-plant study demonstrate that high rates of removal of priority pollutants are achieved by the kinds of well-operated and well-maintained biological treatment systems that were installed to meet BPT. Indeed, the removal rates for many of these priority pollutants exceed 99 percent.

In testimony before this subcommittee last year, the Business Roundtable presented data indicating that the industrial point sources contribute a relatively small portion, on the order of 3 to 10 percent, of the nationwide discharge of priority pollutants. As a result of both this relatively low contribution and the high levels of reductions achieved through BPT, the Business Roundtable data also indicated that the imposition of BAT will achieve only an additional reduction of 2 to 3 percent of priority pollutants in our Nation's waters.

Additionally, we have significantly improved our ability to assess the presence and impacts of priority pollutants in our receiving waters. We can now detect such pollutants in extremely small quantities and we have tools such as biological monitoring which are now available as screening devices to identify areas where there may be discharge of toxic pollutants in toxic amounts.

These then are some of the 1983 facts. Let me describe to you what CMA believes to be the 1983 imperatives.

All of industry must now install BAT. They must do so without regard to the high rates of removals they are currently achieving. More significantly, they must do so without regard to whether those further reductions will have any beneficial effect on receiving water quality.

CMA believes that the Clean Water Act should contain a mechanism to allow plants to demonstrate that modification of the BAT requirements will not create a risk of harm to the receiving water quality. We believe that the use of such a mechanism would be limited, but would at least provide a plant which faced a costly BAT requirement with the opportunity to present evidence that meeting those requirements would not result in a discernible water quality benefit.

I would like to illustrate this concern by way of a BAT-related problem facing one of Union Carbide's plants. This location currently discharges on the average 0.5 pounds per day of phenol. In order to achieve on a consistent, enforceable basis the proposed BAT limitation applicable to it for phenol, the plant has estimated that this will require a capital investment of over $2 million. And that is essentially to meet a zero discharge requirement.

Will the receiving water be better protected if this $2 million is spent? If the answer is "no," this is treatment for treatment's sake. Unfortunately, the Clean Water Act does not allow this issue to be raised. CMA believes it should. We believe the act should be amended to allow a plant to demonstrate that a modified BAT provision will satisfy all water quality requirements, including the protection of the designated use of the receiving water.

My written testimony contains a detailed analysis of how such a BAT modification program would work. I will now highlight certain aspects of that program.

First, the entire burden of generating the information to be considered in a modification request, and of demonstrating that the plant qualifies pursuant to the modification criteria, the entire burden would be on the permittee.

Second, the modification process would be on a pollutant-by-pollutant basis. That is, the permittee's BAT requirements could only be modified for those pollutants for which the permittee met the burden of demonstrating that that pollutant would pose no unreasonable risk of harm in the receiving water.

Third, a successful BAT demonstration would never relieve the permittee of meeting the baseline BPT and water quality derived limitations.

And finally, the granting of a BAT modification request would not be cast in stone. Additional monitoring imposed as a condition of the granting of the modification request could generate information indicating that there were in fact unreasonable risks of harm

in the receiving water. Or simply, a State could upgrade the designated use of the receiving water. In either event, the BAT modification could be withdrawn. Accordingly, we believe that the act should allow a modification of BAT limits in appropriate cases to avoid treatment for treatment's sake.

CMA urges that this subcommittee seriously consider the BAT modification proposal.

I will be pleased to answer any of your questions.

Mr. ROWLAND [presiding]. Mr. Stangeland.

Mr. STANGELAND. Thank you, Mr. Chairman.

Mr. Matthews, you discussed a problem facing a Union Carbide facility and the high cost to achieve a minimal phenol reduction. I expected you to tie that into the impact of that plant's receiving waters.

Could you explain that for us?

Mr. MATTHEWS. Yes, I could.

That really gets to the heart of the problem. That is the very question that we would like to be able to ask and are not permitted to ask under the present structure of the act. At that plant location in particular, the fact is that the phenol discharge creates absolutely no impact in that receiving water. We would like to be able to make that demonstration. We think we could sustain the burden in that particular plant and avoid spending $2 million.

Mr. STANGELAND. As I understand it, you are in favor of abolishing national pretreatment standards?

Mr. MATTHEWS. No, not at all. We advocate, and this is set forth in detail in the written statement, but we advocate that local—that POTW's be allowed to establish local pretreatment programs. However, there again, they have to meet criteria in order to be granted that option. If they failed to meet those criteria, then the discharges going into those POTW's would be required to comply with the national categorical standards so there would still be a place for those standards.

Mr. STANGELAND. Are we in a position to determine the direction to take in toxics control after BAT implementation?

Mr. MATTHEWS. CMA believes we are not yet in a position to know where we should go after BAT is implemented. We firmly support the notion that there should be studies done now and over the next few years as some or all of BAT is implemented. Indeed, we think those studies should focus not only on point source related problems but nonpoint source related problems as well.

Mr. STANGELAND. Can you tell me what the Chemical Manufacturers Association's problems are with both BAT and BPT deadlines?

Mr. MATTHEWS. I guess two. First, the most obvious one is the one we are facing right now, and that is the 1984 deadline which all of us are going to have—well, basically, we cannot comply, with the agency yet to promulgate our standards. I think, more to the point, we have seen proposals in various bills that would stretch out compliance to as late as July 1, 1987. We still feel that that is just not enough time. As I mentioned, EPA has not yet promulgated a number of the regulations, these guidelines, and indeed, for the chemical industry, will probably not do so until the end of next year, the end of 1984, or conceivably not until 1985.

We are concerned that July 1, 1987, will once again bring us and the agency back before Congress in a few years saying that we really cannot meet that and we would like—we suggest that recognition of that problem, the real world problem, be made today, and that the deadlines be extended to July 1, 1988, instead.

Mr. STANGELAND. Thank you very much.

I will yield back.

Mr. ROWLAND. Thank you, Mr. Stangeland. Mr. Moody.

Mr. MOODY. Yes. Thank you, Mr. Chairman.

Since many States do not have water quality criteria for toxics, how would the company show that its pollutants did not harm human health and aquatic life?

Mr. MATTHEWS. Well, our program, as I mentioned, is set forth in writing in some detail. It starts with those instances where there are such water quality standards and there we would have a straightforward demonstration.

Your question gets to those instances where there are not. No. 1, we encourage the States to go about the business of doing that. Nevertheless, in the short term, we assume we will be facing situations like that.

As I mentioned, we think there are a number of tools available to us. One of them is biological monitoring. There is also an awful lot of data out there. In fact, EPA, as it was required to do by statute, published guidelines under section 304 of the act on water quality criteria, and therein lies the large body of data on levels affecting aquatic organisms and levels at which there are human health effects, and we believe that that would be a starting point for any consideration of the BAT modification.

Mr. MOODY. Is it not true that biomonitoring is extremely expensive and does not measure human health effects?

Mr. MATTHEWS. Well, the answer to the first question is yes. Biomonitoring can be an extremely expensive proposition. That is one of the reasons why we do not believe that every one of the plants that might be eligible for a BAT modification is going to go running in and get one. It is going to have to be worthwhile to spend money, to almost invite additional permit requirements that they would not otherwise be subject to.

The answer to your second question is—I believe the answer is yes, that they do not specifically—biological monitoring does not specifically address human health, and I am sure you can get scientists before you to tell you how that is extrapolated to make educated scientific guesses as to human health effects.

Mr. MOODY. Do you agree that is a serious lack, it does not measure human health effects?

Mr. MATTHEWS. I guess my response to that is that we believe that there is a lack of data on a number of substances. We believe there is a large body of data on a number of other substances. Whether biological monitoring per se is the answer to that, I do not believe that is a position we are taking.

Mr. MOODY. How about the synergistic effects of—from increasing one company's pollution discharges, when other companies would also be increasing? There is a synergistic problem where the sum may be greater than the total of the parts?

Mr. MATTHEWS. Yes. Let me just address part of what you said.

I am concerned that you said we would be increasing our discharges. Nothing in our proposal would increase any of our discharges. This is merely a proposition that would allow us to do less than we might have to do in addition to where we have come from. We are not asking to downgrade.

Mr. MOODY. Increasing these relative to some new stage.

Mr. MATTHEWS. The second point I would make is that the technology based guidelines are not premised on anybody's understanding of what the health effects are. These are purely the agency's determinations of what a company is capable of doing by way of available technology. What we are asking is that we put on ourselves the burden of making the demonstration in these very areas where there may not be enough information. Where there is not enough information, we would suspect that the agency is going to deny the request on that basis. Again it is a reason why we do not believe that this is going to be a program that will allow 100 percent of the chemical industry to come in and get waivers. There has to be data out there to support it in order to meet that burden. And where there is not, I guess that is one of the other interesting effects. Where there is not, the BAT modification program would have a side effect of generating that information. It might indeed put a lot of information in the hands of the agencies that otherwise would not be there.

Mr. MOODY. I yield back the balance. I may have a question later.

Mr. ROWLAND. Thank you, Mr. Moody.

Mr. Packard.

Mr. PACKARD. Thank you, Mr. Chairman.

In your testimony, you indicate some serious concerns about the compliance deadlines and recommend that they be delayed.

What problem does CMA have with the deadlines?

Mr. MATTHEWS. Our problems are as I mentioned, that the proposals that we have seen which would impose those deadlines, new deadlines on July 1, 1987, we believe are already out of date; in essence, that the new schedules that we see coming out of the agency responses to the court in the NRDC consent decree litigation indicate that the chemical industry in particular would not know the targets that it must shoot at until the end of 1984, or the beginning of 1985. In that event, July 1, 1987, is simply not going to be enough time.

Mr. PACKARD. Do you think that is true for most situations or is it only true for CMA?

Mr. MATTHEWS. No, I do not believe that it is true only for CMA. The schedule that EPA has come out with, of course, has all the industrial categories that they are addressing, and a number of them, like CMA, like the guidelines applicable to CMA, will not be coming out until later next year. But I would point out these are deadlines that are "no later than." Permit writers who have guidelines that have been established and have that permit in front of them can, of course, impose deadlines "sooner than." We are only asking that, it seems to us, rather than asking us to come back in 3 years and come before you and say here we are again, we need another year, that recognition ought to be given to that real life situation that we are facing.

Mr. PACKARD. Recognizing that there are some variables involved, typically how long do you project the design and construction of a hypothetical "typical" waste water treatment control facility would take for the members of a CMA company?

Mr. MATTHEWS. Well, we will not really know that until we see the final numbers. We have had proposed guidelines out now in our industry and we have a great deal of concern with those, with the data that the agency has used. Indeed, the agency itself has gone out with a massive new request for more information. We do not know the targets yet. Based on what they have proposed, we have some ideas, and many of our plants are working on it now, how would we go about doing it, what kind of equipment would we apply to individual situations. Those are really case-by-case determinations.

Bear in mind that the chemical industry, unlike some others, is made up of plants each of which is so much different than the next one. They are made up of different product lines and, therefore, single numbers applicable to the entire industry require individual solutions at each location. It is awfully difficult for me to sit here today and tell you as a general rule how long it is going to take.

Mr. PACKARD. Not even a range?

Mr. MATTHEWS. Well, I think as a general rule in the past it has taken anywhere from 2 to 3 years to design and construct, debug these facilities and come up with a system that is in compliance with the standards.

Mr. PACKARD. Thank you, Mr. Chairman.

Mr. ROWLAND. Thank you, Mr. Packard.

Mr. Clinger.

Mr. CLINGER. Thank you, Mr. Chairman. I just have one question.

You spoke in your testimony, Mr. Matthews, about the interplay between a Federal regulatory system, which as I understood it you contemplated there would be under your proposal—an overlay, if you will, of a Federal regulatory scheme or Federal standards and criteria—and a local option under which a local jurisdiction or municipality could indicate that they would monitor the situation and have reasonable standards.

Could you amplify that a little bit, how you see the interplay between the Federal standards and the local jurisdiction or local standards?

Mr. MATTHEWS. If you are speaking specifically of the categorical standards, the numerical standards which are in the current act, certainly our proposal would not change that. Merely this, there would be some municipalities who would have to meet—that could meet the criteria that would be set forth in the statute pursuant to our proposal, who would satisfy those criteria and would be given the option then of establishing, implementing a local pretreatment program.

For those localities, those municipalities would decide what their needs were based on what the agency determined are the effluent limitations for the POTW, based on sludge management programs that they might be involved with and so on, and on the basis of those local factors, they would then decide what the requirements were for the individual dischargers to the POTW.

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For those municipalities on the other hand who would not qualify, those dischargers would continue to be subject to the categorical numerical limitations, the Federal limitation.

Mr. CLINGER. Thank you.

Mr. ROE [presiding]. Mr. Stangeland.

Mr. STANGELAND. I have one more question for you, Mr. Matthews.

Once the effluent guidelines regulations have been issued, are you at that point in time able to know what specific technology will be required for any given plant to comply with those regulations or must you await negotiations of your NPDES permit for design and construction of the treatment facility?

Mr. MATTHEWS. Well, the answer I suppose is yes and no. The guidelines certainly are going to be a major component of what we are going to have to do by way of construction. But in a real sense, the answer is until you know what the permit writer thinks those guidelines mean, until you know what other limitations he may think are applicable to your plant beyond those described in the guidelines, and until you know what the State or EPA is going to propose by way of water quality derived limitations, you really will not know what the final target is. And while you can start to work about it, and think about what it is that you are going to need to do so that you can anticipate that final permit moment, in other words, you really do have to wait before you commit the dollars and know how long it is going to take you to finish the job.

Mr. STANGELAND. How long is the average to get that permit written? How long does that negotiation take?

Mr. MATTHEWS. Well, I suppose it varies tremendously. If we are talking about from the moment the permit writer actually picks up that permit and starts working on it until the permit is finalized, I would say on the order of a couple of months elapsed time, not necessarily of man-months of time but it generally is on that order.

Mr. STANGELAND. So if we are going to change the dates of compliance, would not we be better off rather than to set a date specific, to choose a certain period of 2 or 3 years after the signing of the permits or after the promulgation of the regulations?

Mr. MATTHEWS. We have seen two proposals. One with a fixed date and one with 3 years from promulgation. Three years from promulgation has generally been understood to be the guidelines. We think in fact the solution would be 3 years from the date the permit is written.

Mr. STANGELAND. Thank you.

Mr. ROE. Any further questions?

We want to thank you very much for your testimony this morning. We appreciate your being with us.

The committee will recess for about 10 to 15 minutes. We have to go vote and then we will come back and we will conclude the other two witnesses that are pending.

The next witness is Mr. Charles D. Malloch, is that correct, from the Monsanto Co.

All right, we will be back as soon as we vote.

[Recess.]

Mr. ROE. The committee will reconvene and our first witness is Mr. Charles D. Malloch from Monsanto Co. We want to welcome you to our committee hearings.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

Written Statement of Charles D. Malloch on Behalf of Monsanto Co.

Mr. Chairman and members of the subcommittee, I am Charles Malloch, Director, Regulatory Management for the Monsanto Company. I am here to speak to you on behalf of my company concerning proposed amendments to the Federal Water Pollution Control Act (hereafter referred to as the Act). Monsanto employs about 38,000 employees and operates some 60 plants in the United States, with annual sales of over 6 billion dollars. Over forty of these plants have waste water discharges. Half of these are directly treated by Monsanto, and the balance are treated by publicly owned treatment works (POTW). Our facilities range in size from large (5,000 employees) to extremely small (20 employees) so we can bring the perspective of both large and small dischargers in addressing potential amendments to the Act.

This statement outlines the major changes we recommend to improve the Act's effectiveness and to meet the needs of the 1980s. My oral comments will address only one of these issues, namely the need for a new regulatory approach to pretreatment of industrial wastewaters. Monsanto believes that local control of pretreatment programs is both necessary and makes environmental sense. I will discuss a case example to support our beliefs. Following the details on the pretreatment issue are summary statements of the other major changes we recommend be made to the Act.

PRETREATMENT

Under the current Act, industrial dischargers into POTWs must meet national technology based pretreatment standards. Congressional intent behind this was to prevent interferences with the operations of the POTWs and to guard against pass through of waste that POTWs are not able to treat. In response to this mandate, EPA has developed a cumbersome and complex pretreatment program. The foundation of this program is the issuance of national technology based pretreatment standards applicable to dischargers of toxic and nonconventional pollutants. The standards are based on pollutant removals that can be achieved by industrial subcategories using best available technology (BAT). In developing these

categorical standards, EPA has not given proper consideration to the extent to which municipal POTWs effectively remove pollutants, or to the wide variations and mix of industrial and commercial discharges fed to individual POTWs. Such nationwide standards require industrial dischargers to pretreat their waste, even where a POTW is meeting its NPDES permit limitations and where no water quality or other environmental problems require further reduction of pollutant discharges. Monsanto believes that additional, redundant and costly treatment brings no environmental benefit, while penalizing industrial dischargers.

Although EPA's general pretreatment regulations provided for a "removal credits" formula for industrial dischargers to avoid redundant treatment, this formula has not been successfully used. As a matter of fact, the Association of Metropolitan Sewage Agencies (AMSA) has stated in various papers to EPA and at conferences that removal credits would not be granted in most cases because of the complexity and burdens of EPA's regulations.

In addition, in 1980 testimony before the House Subcommittee on Oversight and Review of the Committee on Public Works and Transportation, one municipal witness claimed that "the restrictions and difficulties involved in the granting of removal credits leads to the conclusion that the EPA was never serious about allowing removal credits to industry".[1]

On September 28, 1982, EPA proposed revisions to correct the removal credit program of its General Pretreatment Regulations at 47 Federal Reg. 42698. These proposals fail in at least two important aspects to remedy this situation. First, they make the removal credits available only to a select class of POTWs: those who have an approved local pretreatment program. Since many POTWs do not meet this criterion, the regulations exclude them altogether from the removal credits program. Since Section 307 (b) of the Act makes no reference to Section 402 (b)(8) or to the pretreatment programs, setting this as a condition for application of the removal credits is inappropriate. Second, the

[1]"Implementation of the Clean Water Act", Subcommittee on Oversight and Review, House Committee on Public Works and Transportation, Committee Print 96-71, 96th Cong., 2nd Sess. (1980).(pg.42).

proposed revisions to the Removal Credits Section only set National Removal Rates (NRR) for a small number of toxic pollutants - seven metals and cyanide. These pollutants constitute only 6% of the 129 priority pollutants and exclude the large numbers of organic pollutants that are so effectively treated by biological treatment systems (i.e. secondary tratment). For Monsanto, the EPA proposed rules do not improve the practical operation of the credit program. We contend that an industry discharging to a POTW should be given 100% removal credit for a pollutant if the POTW is capable of treating that pollutant to the level equivalent to the applicable categorial standards.

The concerns by local POTW authorities who must implement the EPA pretreatment rules and the problems with EPA proposed removal credit rules will lead to the installation of redundant treatment by industry. It will be virtually impossible to obtain credit for pollutants routinely and normally removed in POTWs. Monsanto has over 20 plants discharging to POTWs ranging in size from 0.1 to 7.0 million gallons per day of wastewater discharged. The priority pollutants in these discharges range from none to quite a few. The Monsanto discharges represent, in many cases, only a small fraction of the POTWs load, while in some cases they take up a significant part of a POTW's treatment capacity. Local option and control is mandatory if redundant pretreatment is to be avoided and to foster effective, workable agreements between municipalities and their industrial dischargers.

To provide a unique example of a situation where pretreatment could be required because of regulation, but in fact is not necessary because of the removal capability of a POTW, I cite Monsanto's Sauget, Illinois plant which discharges to a POTW. Currently under construction is a new regional POTW serving the Metro East St. Louis area, which consists of a connected population of over 85,000 people. The regional treatment plant service area will include the city of East St. Louis, villages of Sauget and Cahokia and the surrounding areas. Presently several primary and/or chemical treatment plants serve these communities. In the mid-1970s these communities and a number of their industrial dischargers began working to develop a regional waste treatment plant concept. The municipalities and the industrial sources were seeking the most efficient and cost-effective manner to provide needed secondary treatment capabilities. Without the combined efforts of these groups, the treatment plant would not become a reality, since

these communities are in an economically depressed area. The regional waste treatment plant will be funded 78% by federal grants and 22% via industrial revenue bonds for the municipal/industrial share. Since the city of East St. Louis has an extremely poor credit rat'ng, the bond council determined that the industrial participants as a group had to provide corporate commitments for repayment of the total debt in the event of a default by any/all users. Through this joint municipal-industry arrangement and cooperation, the new treatment plant was designed and is under construction to provide primary and secondary treatment for the combined municipal-industrial wastewaters.

To design the new regional plant, extensive laboratory and pilot plant scale testing was conducted which confirmed that the POTW will have removal efficiencies of over 99% for nearly all of the priority pollutants which will be in the influent. Attached is a copy of a summary discussion of this waste treatment facility in which Table IV shows this removal capability (Attachment A). As a result, Monsanto and other major industrial users do not need to provide pretreatment to assure that the POTW effluent meets the requirements of the Act.

However, EPA has not been able to assure the industrial dischargers that, once the regional POTW is on line, that the construction of pretreatment facilities may not be necessary. The attorney representing the Village of Sauget, the lead municipality for this combined treatment works, sent a memorandum to EPA requesting their assurances that as long as "the effluent from the regional plant meets the categorical pretreatment standards (applicable to industries discharging to it), the industries will not be required to install pretreatment." On December 8, 1982, EPA's response letter stated, "after carefully considering your request, we have determined that the Clean Water Act and the regulations implementing it do not provide sufficient flexibility to respond affirmatively to your request" (Attachment B). EPA went on to state that "the Act and regulations provide a removal credit mechanism to adjust those standards based on actual removal of pollutants by the POTWs." EPA elaborated on this point in this same letter. The city of Sauget's attorney responded to EPA's removal credit formula proposed in the Federal Register of September 28, 1982 (47 FR 42698) and discussed the effects of this proposal on the new regional POTW (Attachment C).

As a result, industrial dischargers have no assurances that they will not later have to put in pretreatment at their own plants. These industries are guaranteeing the funding of a significant portion of the cost of this regional facility, and in the case of my own company, its financial commitment will approach over 60 million dollars over the next 18 years. This past year when we made this financial commitment, we did so anticipating that a change in the law would occur to solve the pretreatment problems (see Attachment D). If we are required to put in pretreatment facilities at our Sauget plant, we will have to install significant capital for facilities which would be redundant to the removal capabilities of the regional plant.

This regional POTW is an excellent example of industry/municipal cooperation resulting in the construction of a cost-effective, first-class facility designed to meet the requirements of the Act and would not now be under construction without industry support. However, the incentive for industry to financially aid the municipalities is gone if it is necessary for these industries to provide redundant pretreatment facilities.

Other examples supporting pretreatment revisions to the Act are contained in testimony before Congress by a number of groups, such as the Association of Metropolitan Sewage Agencies, the Association of State and Interstate Water Pollution Control Administrators, the Chemical Manufacturers Association, the Business Roundtable, the Synthetic Organic Chemical Manufacturers Association and the American Petroleum Institute (see 1982 House hearings). Monsanto encourages the subcommittee to consider changing the Act to allow local control of pretreatment programs so that pretreatment needs could be set by each POTW.

The Act should be amended to allow a POTW to request EPA, or where appropriate the State, for approval to use an alternate local control program at any time that they can determine its beneficial need. Once the request is received, there should be a stay on implementing the categorical pretreatment standards until the request is granted or denied. The decision on the request should be made by EPA in a specified time period, as an example 180 days.

This local control program alternative should operate in lieu of the EPA categorical standards where the POTW demonstrates in the request that it meets the following requirements:

- The POTW has or will develop and implement an acceptable local pretreatment program to control industrial dischargers as necessary to avoid interferences, pass through and sludge disposal problems.

- The POTW has to be achieving secondary treatment or is on a schedule of compliance.

- The POTW has to bear the responsibility to address and handle any particular problems confronting its treatment system.

- The POTW has adequate funding and other resources to implement the local program.

The NPDES permit required of all POTWs should assure that the POTW meets required treatment and water quality standards. Since each POTW has its own unique set of local conditions, it is in the best position to determine pretreatment needs to meet local compliance problems and to protect its treatment system. Rigid national standards do not allow flexibility to address different local situations.

There are obviously some local POTWs which are not able to develop local pretreatment programs due to lack of resources or other reasons. In these cases, the EPA categorical pretreatment standards could continue to be used.

Allowing the alternative for the pretreatment program to operate under local control has the advantages of (1) focusing on particular local problems that in the past may have been ignored, (2) not requiring redundant treatment, and (3) allowing a POTW to develop local solutions consistent with its need to meet its NPDES permit's effluent limits while retaining an oversight role for the states and EPA. It should be the responsibility of the POTW and its industrial dischargers to demonstrate that the POTW's treatment capability and pretreatment program will meet NPDES permit limits. Amendments which encourage local control of pretreatment programs for the strengthening of municipal-industrial cooperation will provide economical and appropriate treatment of their combined wastes in the local POTWs.

BAT AND BCT LIMITATIONS

Monsanto recommends that the Act be amended to provide the following changes affecting EPA's categorical effluent limitation programs. These are only summaries of the recommended changes and if the subcommittee wishes additional information, we would be glad to provide it.

- Modifications - Uniform implementation nationally of BAT/BCT controls is not necessary to achieve good water quality and will result in many cases of treatment for treatment's sake. Controls currently in place to meet BPT requirements are doing, in many instances, an effective job of removing priority pollutants. In those cases where a discharger can demonstrate to the permitting authority that controls already in place reduce discharges of pollutants to an acceptable level, these industry sources should be allowed to modify the effluent limitations. Monsanto supports the BAT/BCT modification scheme being advocated by the Chemical Manufacturers Association.

- Deadlines - Compliance with BAT and BCT effluent limitations is required under the current Act by July 1, 1984. Monsanto supports an extension of this deadline to at least July 1, 1988, or three years after issuance of an applicable categorical effluent limitation, whichever is later. To date, EPA has only issued a few categorial effluent limitations which apply to Monsanto. As such, the uncertainty over those yet to be issued has us concerned that we will not have sufficient time to meet these limitations. An extension of the deadline in the manner described above, would overcome this problem.

- Staggered Deadlines - Certain major Monsanto plants will be required to meet effluent limitations under more than one of the categorial guidelines. As an example, we have a plant which is covered by the pharmaceutical, pesticides and organic guidelines. With the staggered promulgation dates of these guidelines, and with a common treatment unit serving the entire plant site, Monsanto will likely be faced with redundant modifications to its facilities as each guideline is promulgated.

Monsanto encourages amending the Act to provide that where more than one categorical guideline applies, that the permit limitations be modified only after the last guideline is issued. This will provide more efficient and cost-effective use of resources to meet the requirements of the Act.

CONCLUSION

Although Monsanto could recommend other changes to the Act, the above categories represent major changes that would improve the Act's performance during the 1980s. Monsanto is committed to ensuring that its manufacturing sites operate in an environmentally responsible manner. We welcome the opportunity to submit this testimony and are prepared to cooperate with the subcommittee and Congress in addressing environmentally sound and constructive amendments to the Act.

ATTACHMENT A

SUMMARY DESCRIPTION OF
JOINT MUNICIPAL/INDUSTRIAL
WASTEWATER TREATMENT FOR METRO EAST ST. LOUIS, ILLINOIS

The Metro-East St. Louis service area is comprised of the City of East St. Louis, the Village of Sauget, the Village of Cahokia, and the area serviced by the Commonfields of Cahokia Public Water District. The existing facilities include a primary treatment plant for East St. Louis, a primary treatment plant for Cahokia and the Commonfields, and a physical/chemical treatment plant for the Village of Sauget. The sewered population served by these three treatment plants and their respective flows are shown in Table I.

Table I. Service area requirements.

	1980	2000
Connected Population	85,200	103,200
Average Flow (M^3/S)	1.38	1.18

A study for the Metro-East St. Louis Facilities Planning Area was completed during December 1976 with the major recommendations being:

1. Treatability studies should be undertaken to verify design criteria for the proposed regional facility;

2. A combined sewer excess flow treatment facility should be constructed at the existing East St. Louis treatment plant; and

3. A new regional treatment facility should be constructed in Sauget to treat the raw wastewater from East St. Louis and Cahokia, and the primary effluent from the Sauget physical/chemical treatment plant.

In 1976 the Village of Sauget entered into an agreement with the City of East St. Louis, the Village of Cahokia, the Commonfields of Cahokia Public Water District, and the Metro East Sanitary District whereby it would construct, own, and operate a regional biological wastewater treatment plant to provide service for the Metro East area. This wastewater treatment project is being handled through the EPA construction grants program with the Village of Sauget acting as the lead agency. In July 1978 the Federal EPA approved a Step 2 regional grant which was amended to a total of $3.18 million as of June 1980. In addition, the project was awarded a Step 1 grant, in the amount of $170,000 to conduct a First Flush Study of the East St. Louis combined sewer system.

Under the Step 2 grant the consulting firm of Russell & Axon, Engineers-Planners-Architects, Incorporated, St. Louis, was selected by the Village of Sauget to: 1) conduct a bench scale treatability study and a pilot plant study; 2) develop a municipal pretreatment program; 3) develop a user charge and industrial costs recovery program; and 4) complete plans and specifications for construction of the regional treatment plant, two pump stations, and connecting force mains.

The configuration of the treatment plant, known as the American Bottoms Regional Wastewater Treatment Facility, is shown schematically in Figure 1.

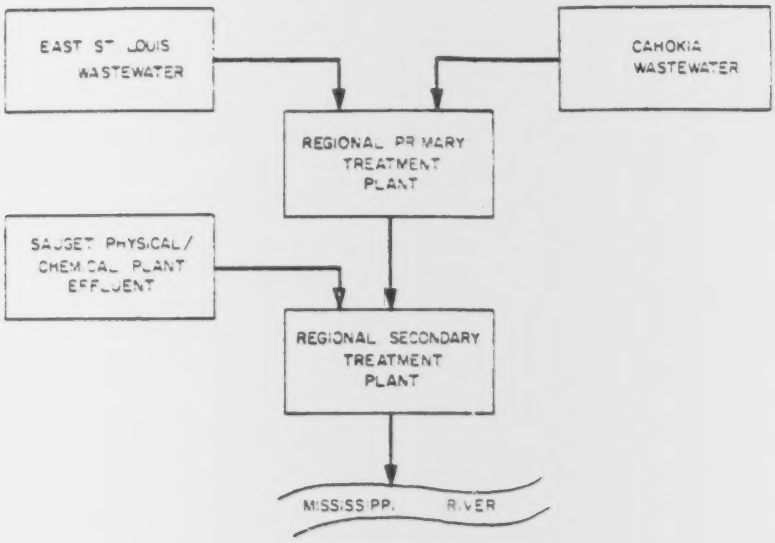

Figure 1. Schematic of the American Bottoms Regional Wastewater Treatment Facility.

Wastewater from the East St. Louis sewer system will be conveyed from a new pump station through a 42 in., 1 mile long force main to the headworks of the regional treatment facility. Wastewater from the Cahokia sewer system will be conveyed in a similar manner from a rehabilitated pump station through a 30 in. force main for a distance of approximately 3 miles. These wastewaters, after mixing at the headworks, will receive conventional primary treatment constituting the first portion of the new American Bottoms Facility. The primary effluent will be combined with the Sauget physical/chemical effluent for combined secondary powdered activated carbon/activated sludge treatment.

WASTEWATER CHARACTERIZATION

Prior to commencing with the treatability and pilot plant studies, that determined the process selection, it was necessary to understand the type of wastewater to be treated.

East St. Louis is an economically depressed area with significant industrial development. Among the major users of the sewer system are: Beck Flavors, Certainteed, Chemtech Fluoride, Circle Packing, Hunter Packing, Pfizer, Inc., Morris Paint and Varnish, and Musick Plating. The major effects of the industrial wastes in the East St. Louis sewer system are to produce a sewage extremely high in iron content and in packinghouse wastes. The entire Metro-East region is located in an area protected from the Mississippi River by a levee system. High groundwater conditions exist for the majority of each year and the soil is extremely sandy. Portions of the East St. Louis combined sewer system are up to 60 years old; therefore, significant infiltration/inflow exists. Efforts are underway and will continue for several years to reduce these extraneous flows to a manageable level.

The Village of Sauget sewerage system consists of combined sewers and a physical /chemical treatment plant. Major contributing facilities are: Cerro Copper Products, Monsanto Company, Midwest Rubber Reclaiming, Amax Zinc, and Edwin Cooper. During 1977 the Village completed a physical/chemical "primary" treatment plant which will remain operational as part of the regional project as shown schematically in Figure 1. The unit processes of this treatment plant consist of rough screening, grit removal, three stage lime neutralization, polymer addition, flocculation, and clarification. The plant was constructed at a total cost of $8.67 million and was financed with industrial revenue bonds backed by the Sauget industries.

The Cahokia input to the system is characteristically domestic sewage with intermittent high loadings of settleable inert solids. These solids, mainly sand, are apparently introduced into the sewer system through cracks, open joints, and poorly sealed manholes. While the sewer system is relatively new (approximately 30 years old), its poor condition is primarily the result of high groundwater during a 1973 flood of the Mississippi River. No industry exists within the city limits of Cahokia.

Summarizing, the combined wastewater from the three communities is approximately 40 percent domestic sewage and 60 percent industrial wastewater (flow basis). The three most significant parameters observed during this study (COD, BOD_5 and suspended solids) are shown in Table II for each community.

TABLE II. Regional wastewater influent characteristics.

	Flow (m^3/s)	COD (mg/l)	BOD_5 (mg/l)	Suspended Solids (mg/l)
East St. Louis	0.53	1,040	393	1,015
Sauget Effluent	0.47	454	210	35
Cahokia	0.14	561	224	201

These numbers represent average values projected for design purposes.

TREATABILITY AND PILOT PLANT STUDIES

During the course of this project three treatability studies were completed using: 1) four bench scale activated sludge reactors, 2) a complete mix activated sludge pilot plant, and 3) a powdered activated carbon/activated sludge pilot plant. A comparison of the removal efficiencies are shown in Table III.

TABLE III - Removal Efficiency (%)

	Bench Scale Reactor Study	Activated Sludge Pilot Plant	Activated Sludge/ Activated Carbon Pilot Plant
COD	72	56	80
BOD_5	98	96	97
SS	92	35	35

PILOT PLANT COMPARISON

The conclusion from several months of bench scale treatability work and pilot plant studies indicated that it was possible to effectively treat the American Bottoms wastewater using either a strictly biological treatment system or the PACT process. The criteria indicated, based on conventional efficiency parameters, that the PACT system was the best performer.

Before making a final process recommendation, the consultant also evaluated numerous metal and non-conventional parameter removal efficiencies. Priority pollutants (non-conventional parameters) were investigated to aid in the development of a regional pretreatment program prior to construction of the treatment plant. This factor is extremely important because of the number of the industries that will be served by this project.

The CMAS pilot plant exceeded the discharge limit for iron and only marginally met the limits on lead, manganese, and mercury. Of the 72 priority pollutants detected the PACT removal efficiency was essentially equal to the CMAS efficiency. Only 37 of these substances were significant and are shown in Table IV.

After the two likely processes had been compared strictly from process and performance standpoints, a cost-effective analysis was made and a final treatment process recommendation was made for the American Bottoms project. The results of the cost comparison indicated that of eight treatment schemes analyzed, the three most economical were within two percent of each other and were thus considered economically equivalent. The final process decision was based on projected performance and reliability.

TABLE IV. Average priority pollutant removals for the CMAS and PACT pilot plants.

Parameter	CMAS PILOT PLANT Influent (µg/l)	Effluent (µg/l)	Removal Efficiency (%)	PACT PILOT PLANT[a] Influent (µg/l)	Effluent (µg/l)	Removal Efficiency (%)
Benzene	1248	< 3.4	> 99.7	907	< 3.0	> 99.6
Chlorobenzene	916	3.3	99.7	897	3.7	99.3
1, 2, 4 - Trichlorobenzene	35	ND	100	62	ND	100
1, 1, 1 - Trichloroethane	4	ND	100	7	ND	100
2, 4, 6 - Trichlorophenol	94	< 1	> 99	81	ND	100
Chloroform[b]	76	22	72	87	25	71
2 - Chloronapthalene	52	ND	100	ND	ND	-
2 - Chlorophenol	112	< 1	> 99	98	ND	100
1, 2 - Dichlorobenzene	134	ND	100	113	ND	100
1, 3 - Dichlorobenzene	154	ND	100	67	ND	100
2, 4 - Dichlorophenol	160	< 1	> 99	116	< 1	> 99
Ethylbenzene	29	< 1	> 97	26	ND	100
1, 4 - Dichlorobenzene	48	ND	100	ND	ND	-
Methylchloride[c]	21	12	43	11	91	-
Dichlorobromomethane	< 2	< 1	50+	2.3	ND	100
Napthalene	20	ND	100	ND	ND	-
2 - Nitrophenol	544	< 4.2	> 99.3	1067	< 1	> 99.9
4 - Nitrophenol	544	< 4.2	> 99.3	543	2.7	99.5
Nitrobenzene	33	ND	100	ND	ND	-
Pentachlorophenol	31	< 1	> 96.7	35	ND	100
Phenol	199	< 1	> 99.5	366	1	99.7
bis (2-Ethyhexyl) Phthalate	68	16	76	92	103	-
Butyl Benzyl Phthalate	425	< 1.6	> 99.7	378	< 1	> 99.7
Di-N-Butyl Phthalate	7	1	86	8	3	62
Diethyl Phthalate	8	ND	100	8	ND	100
Anthracene	< 17	ND	100	< 13	ND	100
Phenanthrene	< 17	ND	100	< 13	ND	100
Tetrachloroethylene	< 1	ND	100	< 1	ND	100
Toluene	795	< 2	> 99.7	1195	< 2	> 99.8
PCB - 1242, 1254, 1221	< 1	< 1	-	< 1	< 1	-
PCB - 1232, 1248, 1260, 1016	< 1	< 1	-	< 1	< 1	-
Phenolic Compounds	1800	80	95.6	2400	200	91.7

[a] 4.0 hour aeration time. [b] Drinking water background exceeds 50 µg/l chloroform.
[c] Influent and effluent numbers suspect due to possible laboratory background interference.

After taking into consideration the results of the study, Russell & Axon recommended design of a PACT/Wet air regeneration system for the American Bottoms Regional Wastewater Treatment Facility. The PACT process was considered more advantageous for the following reasons:

1. Operational flexibility is available at all times to handle varying wastewater conditions;

2. It consistently met Illinois effluent standards for conventional pollutants without filtration;

3. Secondary sludge is reduced to an inert ash by the wet-air oxidation process;

4. The aeration time could be as little as 2.5 hours;

5. Color is removed to a great extent thus providing a more aesthetic effluent. Because of this it is also possible to use the effluent for plant service water.

6. The aeration time coupled with an autothermal secondary sludge destruction process will provide considerable energy savings; and

7. Chemicals are not required for secondary sludge processing and large quantities of secondary sludge (mostly water) would not be hauled from the site.

Disadvantages of the PACT system include the use of polymer, the utilization and consumption of carbon, and the use of a proprietary system which requires sole source approval.

The specific treatment scheme (Figure 2) will consist of a 1.18 m^3/s treatment plant with the following unit processes: grit removal, primary clarification, gravity sludge thickening, primary sludge vacuum filtration and secondary sludge wet air regeneration. Total construction costs for this project is estimated at about $77,000,000. Completion of the design (plans and specifications) was in June 1981 with construction started during late 1982 . Startup is scheduled to commence at the end of 1985.

In support of this project several other studies are currently underway. They are: a regional pretreatment program, a pretreatment program for the existing Sauget physical/chemical treatment plant, development of a user charge system, and a first flush study and a sewer system evaluation survey for East St. Louis.

SUMMARY

The new American Bottoms Regional Wastewater Treatment Facility will provide the Metro East St. Louis industries and communities with a pretreatment program and a secondary wastewater treatment system capable of meeting State and Federal regulations. This combination of compliance with Clean Water Act requirements and low cost is essential for the stability of the communities and retention of industry in the Metro East St. Louis area.

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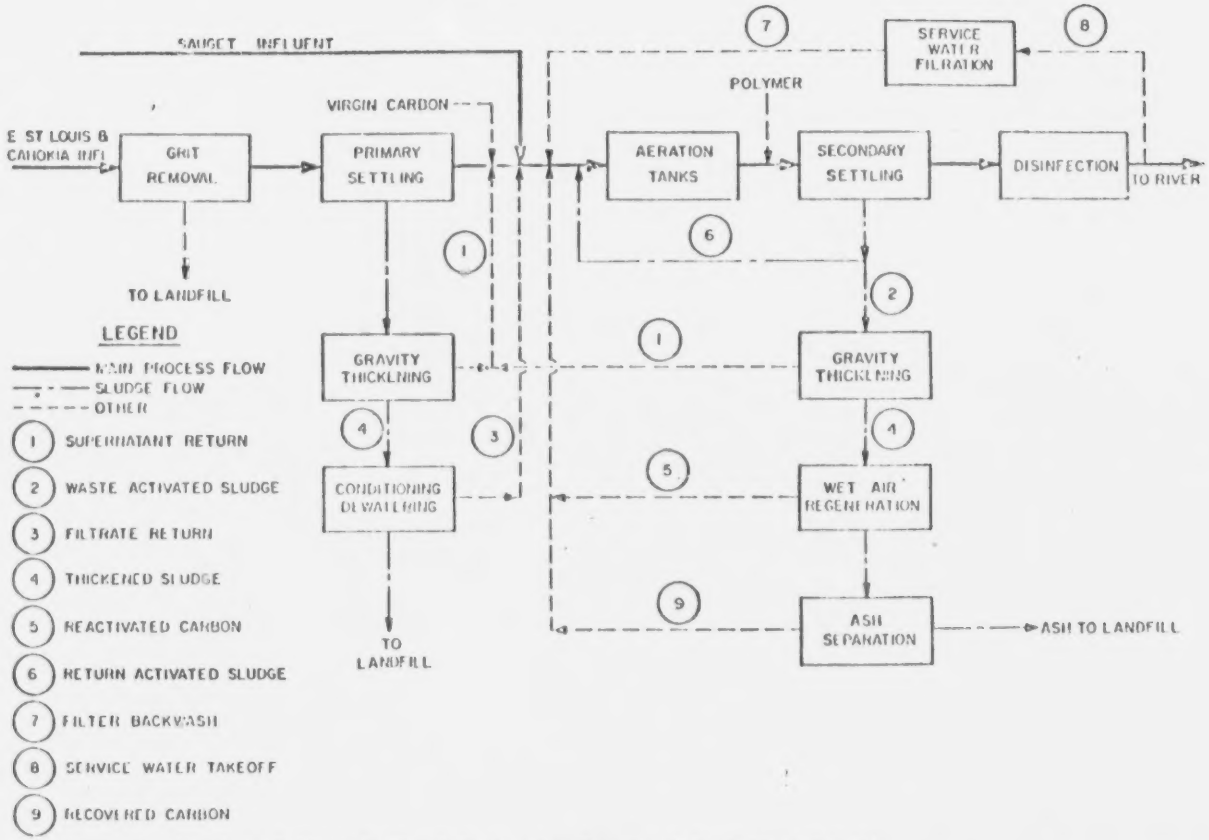

Figure 2 American Bottoms Regional Wastewater Treatment Facility schematic.

ATTACHMENT B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 8 1982

OFFICE OF WATER

Mr. Richard J. Kissel
Martin, Craig, Chester and Sonnenschein
115 South LaSalle Street
Chicago, Illinois 60603

Dear Mr. Kissel:

In your letter of November 30, 1982, you outline on behalf of your client, the Village of Sauget, several concerns with regard to categorical pretreatment standards and removal credits. You indicated in your letter and in a meeting with members of my staff and representatives of Region V and the State of Illinois, that the industries which discharge to the Sauget treatment facility are planning to help finance the non-federal share of the cost of a new regional treatment facility. You further indicated that their support of the new facility was based on the premise that the Sauget POTW and the American Bottoms Regional Plant would replace the need for pretreatment facilities for the industries which discharge to those plants. You stated that for the industries to proceed with their commitment to help finance the Regional plant they immediately need an assurance from U.S. EPA that, as long as "the effluent from the regional plant meets the categorical pretreatment standards (applicable to industries discharging to it), the industries will not be required to install pretreatment."

Before discussing this and other issues you raised, let me say that I support the initiatives of the Village of Sauget and its industries in undertaking a leading role in the efforts to implement the regional treatment scheme now planned for the area. EPA recognizes that an innovative publicly owned treatment works, such as American Bottoms, may serve as a partial or total replacement for pretreatment at individual industrial facilities.

After carefully considering your request, we have determined that the Clean Water Act and the regulations implementing it do not provide sufficient flexibility to

respond affirmatively to your request. Industrial categorical pretreatment standards apply at the industrial facility, not to the POTW effluent as you request. However, the Act and regulations provide a removal credit mechanism to adjust those standards based on actual removal of pollutants by the POTW. In light of the existing treatment at the Sauget plant and the planned powdered carbon treatment at the regional plant, it seems likely that removal credits could provide relief to your industrial contributors. The proposed amendments to the removal credits regulation, which you referred to, simplify this mechanism and will make it more workable. Nonetheless, without knowing what the categorical standards applicable to many of your industries will require and lacking specific information on the treatment efficiency of the American Bottoms plant once it is constructed, it is impossible to provide the absolute assurances specifically requested in your letter. Once this information is available, the need for pretreatment at the industries may be eliminated through application of removal credits, if the combined treatment of the facilities at Sauget and American Bottoms sufficiently removes the pollutants regulated in general and categorical pretreatment standards. The mechanism for this determination shall be the removal credit provisions of section 403.7 of the General Pretreatment Regulations, as amended.

In the meeting in Chicago, you raised the issue that uncertainty could be created by a "ratcheting" effect when there is a continuing modification of removal credits. I understand the problem and intend to address it in the promulgation of the amendments to the removal credit provisions.

Let me assure you that the comments you submitted will be fully considered in the rulemaking process on the removal credits proposal. EPA will continue its longstanding cooperation and efforts directed at constructing the American Bottoms Regional facility. We believe that construction of the plant will help achieve our shared water quality goals.

Sincerely yours,

Martha G Prothro

for Bruce R. Barrett, Director
Office of Water Enforcement
and Permits

cc: Charles Sutfin
Roger Kanerva

ATTACHMENT C

Law Offices
Martin, Craig, Chester & Sonnenschein
115 South La Salle Street
Chicago, Illinois
60603

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HUGO SONNENSCHEIN (1917-1981)
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DONALD E. TOLVA
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THOMAS B. CASSIDY
THOMAS H. DONOHOE
DAVID C. FALLS
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JEFFREY C. FORT
ROBERT W. EARHART, JR.
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TELEPHONE 368-9700
AREA CODE 312

JACOB H. MARTIN
WILLARD ICE (1918-1980)
ADELOR J. PETIT, JR.
ROY E. OLIN
OF COUNSEL

November 24, 1982

Mr. Bill Diamond
Environmental Protection
Agency
Permits Division (EN-336)
Room 3220
401 M Street, SW
Washington, D.C. 20460

Dear Mr. Diamond:

This letter is intended as comments on the proposed rules with respect to the removal credits program that appeared in the Federal Register of September 28, 1982, "General Pretreatment Regulations for New and Existing Sources; Removal Credits." 47 Fed. Reg. 42698. These comments are presented on behalf of the Village of Sauget, Illinois where the existing treatment facility and the designed regional facility could be severely impacted by the removal credit scheme as proposed. The purpose of this letter is to demonstrate the potential effect of the proposed regulations, and to describe the wastewater treatment agreements which Sauget is a party that will, in turn, be voided by this program.

1. Impact of Sauget POTW

The apparent purpose of the removal credits scheme, as authorized by Section 307(b)(1) of the Clean Water Act ("Act") is to grant to industrial users of a Publicly Owned Treatment Works (POTW) relief from the categorical pretreatment standards. This relief, in the form of "removal credits" is to be based upon the removal capability of the POTW. Because the Sauget POTW was designed to treat industrial wastes as well as municipal

wastes, the removal credit program could appear at first blush to afford the Sauget industries significant relief. However, the effect is, in fact, quite the opposite.

The existing POTW of the Village is a physical/chemical treatment facility which treats the industrial discharges from eight industries, and the municipal waste from a population of about 200. Therefore, the influent is between 98% and 99% industrial. But concentrations of substances in the discharges from the industrial plants are vastly different in composition.

The following is an example of the problem created. If the proposed removal credits scheme were applied to an industrial effluent which includes copper:

> The physical/chemical system of the Sauget POTW treats copper to 0.5 mg/l near its solubility level. This is the present effluent limitation of the POTW's NPDES permit. By using a solubility system, and by adjustments of chemicals and pH, the POTW can reduce the influent concentration of copper to 0.5. In the removal ratio formula, $\frac{I-E}{I} = r$ (proposed 403.7(b)(2)(iv)) the effluent concentration E for the Sauget POTW is 0.5 mg/l. The second element of the removal ratio is I, the influent concentration to the POTW. In the instance of a copper discharge to the Sauget POTW, the concentration could be 10 mg/l at the industrial discharge, but be 2 mg/l at the influent to the POTW. Therefore, I is 2 mg/l Using the removal ratio formula, the removal ratio is 75%, even though the initial discharge of copper was at a strength of 10 mg/l. When the removal ratio is applied to obtain the revised pretreatment standard using the formula a $Y = \frac{X}{1-r}$ (40 C.F.R. §403.7(a)(4) as proposed), the effect is obvious. If the pretreatment standard is 0.5 mg/l, then the revised pretreatment standard is 2 mg/l.

For the Sauget industry, pretreatment to 2 mg/l would be required, even though the POTW is specifically designed to remove copper to 0.5 mg/l from the industry discharging 10 mg/l of copper.

2. <u>Impact on Regional Treatment Plant</u>

The disastrous effect of the proposed removal credits scheme is further emphasized in the context of its effect on the viability of a regional treatment plant organization for which Sauget is the lead agency. To describe this relationship, and the destructive impact of these proposed regulations, a brief history of the Sauget POTW and the regional treatment plant is required.

The Village of Sauget is located in St. Clair County, Illinois, on the Mississippi River between the City of East St. Louis and the Village of Cahokia. Sauget is the site of eight industrial facilities, and has a population of 200. Early in 1972, Southwestern Illinois Metropolitan Area Planning Commission indicated that effective secondary treatment for St. Clair and Madison Counties could be provided through the development of a regional treatment facility. In 1973, this concept gained the support of both State and Federal Environmental Protection Agencies. Following extensive meetings, in 1975 representatives of St. Clair and Madison Counties, the Village of Sauget, the City of East St. Louis, and the East Side Levee District reached formal agreement to create a regional waste-water treatment authority. In 1976, Sauget submitted a proposal for funding, acquisition, construction, operation, ownership and a management of the regional treatment plant and system. Illinois EPA and Sauget cooperated in an effort to obtain the approval of the regional treatment authority. In 1977, agreement was reached with the City of East St. Louis, the Metro-East Sanitary District, the Village of Cahokia and the Commonfields of Cahokia Public Water District that would place Sauget in control of operation and ownership of the regional treatment plant.

In 1978, the Illinois Pollution Control Board granted a variance to the Sauget POTW from the Illinois BOD, suspended solids, and oil and grease effluent limitations on the basis that Sauget's effluent would eventually be treated to compliance levels by the regional treatment plant. In 1981, the Village of Sauget petitioned the Illinois Pollution Control Board for a site-specific regulation dealing with "first flush" effluent, which is predicated on the construction of the regional plant under Sauget's control. In addition, Sauget's present NPDES permit is dependent upon the eventual acceptance of the effluent from the Sauget POTW to the regional plant.

In sum, the Village with the support of the United States Environmental Protection Agency, the Illinois Pollution Control Board, and the Illinois Environmental Protection Agency, has undertaken the design, construction and operation of the regional facility.

All that would be changed by the promulgation of the proposed removal credits scheme. If the Sauget industries must pretreat to a level at or below the level of the regional plant effluent, they will have no reason to provide the capital that is essential for construction of the regional facility. And because the regional plant will receive influent from larger municipalities,

with Sauget representing about 30% of the influent, the same effects on the removal rate will be observed at the regional plant as would occur at the Village's physical/chemical plant.

Rather than affording industrial dischargers relief from categorical pretreatment standards to a POTW, application of the proposed removal credits scheme would impose an onerous burden upon industries and municipalities alike. By the use of a combined waste stream concept, the proposed regulation fails to account for efficiently designed wastewater treatment systems in municipal industrial settings. Specifically, it would force the industries of Sauget, Illinois, which constitute 99% of the influent to the Sauget POTW, to perform the same level of treatment twice. This regulation is so burdensome that, if imposed, it could result in withdrawal of the industries from support of the joint treatment system.

Even more disastrous is the potential effect of the regulations on the regional treatment plant designed to completely treat the effluent from Sauget, East St. Louis, and Cahokia. The absence of Sauget would essentially end the regional plant concept recommended by the Facility Plan. Thus, secondary treatment for Cahokia and East St. Louis would again become only a remote possibility.

Sauget appreciates the opportunity to bring this potentially disastrous situation to your attention. In addition to the documentation provided here, representatives of Sauget would welcome the opportunity to more fully discuss this situation.

Very truly yours,

Richard J. Kissel

Richard J. Kissel

RJK:ek

P.S. As we are writing these comments, Mr. Harold Baker, the Village attorney who has been involved in this project for nearly ten years, is completing the terms for the bond issue for the regional facility. That bond issue is planned to be let in mid-December. Mr. Baker has asked that we indicate to you that these proposed requirements are diametrically opposed to the understanding that has supported the Village's efforts from their beginnings to construct the regional wastewater treatment facility.

ATTACHMENT D

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST
CHICAGO, ILLINOIS 60604

RECEIVED OCT 1 1982

REPLY TO ATTENTION OF:
5WQP-26

AUG 4 1982

Mr. Jack Molloy
Chairman, Sauget Research and
Development Association
Monsanto Company
W.G. Krummrich Plant
Sauget, Illinois 62201

Dear Mr. Molloy:

As requested in your June 29, 1982, phone call to Mr. Tony Holoska of my staff, this letter will highlight Federal pretreatment requirements for industries presently discharging into the Village of Sauget's treatment plant, and for those who will, in the future, be discharging into the American Bottoms Regional Treatment Plant.

The General Pretreatment Regulations (40 CFR 403) as amended on March 31, 1981, established two different sets of standards that industries must comply with: national categorical standards and prohibitive standards. The U.S. Environmental Protection Agency (U.S. EPA), pursuant to the settlement of the Natural Resources Defense Council suit, must publish standards for certain types of industries determined to discharge toxicants. These standards apply nationally and are based on Best Available Technology (BAT). Section 307(b)(1) of the Clean Water Act provides for case-by-case revisions of categorical pretreatment standards for industrial users to compensate for pollutants removed and treated by a Publicly-Owned Treatment Works (POTW). A POTW must demonstrate consistent removal and apply to the U.S. EPA Regional Office or to an NPDES state with pretreatment authority.

Presently, compliance with BAT categorical pretreatment standard is required as of 3 years from the promulgation date of the standard, but no later than July 1, 1984. Once a standard is promulgated, affected industries must also comply with reporting requirements, as specified in 40 CFR 403.12. There exist federally promulgated BAT categorical standards for Timber Products Processing, Iron and Steel, and the Inorganic Chemicals industry, with 12 others proposed (see Attachment for list of industrial categories for which BAT categorical pretreatment standards will be promulgated). Additionally, Best Practicable Control Technology (BPT) electroplating standards are in effect.

Whereas categorical standards apply to specific classes of industries, national prohibitive standards apply to all nondomestic users of a POTW. Section 403.5 of the General Pretreatment Regulations contains requirements

for the nondomestic users and the municipality. Pursuant to 40 CFR 403.5(c), a POTW, developing a pretreatment program must establish specific limitations in its sewer use ordinance to control pollutants, particularly toxicants, from nondomestic users.

In order to establish these limits, a municipality must conduct an industrial survey to determine the type of pollutants that could enter the sewer system. This activity is followed by the POTW sampling its influent, effluent, and sludges to determine the fate of toxicants. Limits established will be based on local situations with the overall objective being prevention of pass-through of pollutants, prevention of treatment plant interference and upset, and reduction of sludge contamination. Proposed local limits and their technical justification must be approved by the state and/or U.S. EPA.

Once the POTW pretreatment program is approved, the local entity will enforce its own standards as described in its sewer use ordinance, or federally promulgated BAT categorical pretreatment standards, whichever are more stringent. Cities will need to work very closely with their industries and keep them apprised of the applicable standards. Industries having to meet more stringent local standards are not bound by a federal compliance deadline date.

Reauthorization of the Clean Water Act is currently under review by Congress. A major part of the legislation proposed by U.S. EPA is modification to the national pretreatment program. Two sections dealing with industrial compliance with categorical pretreatment standards are Sections 307(b)(2) and (b)(3). Section 307(b)(2) would allow the Administrator discretion in promulgating national categorical BAT pretreatment standards. Section 307(b)(3) would allow a POTW, under certain conditions, to apply for a waiver from having to apply national categorical standards to its nondomestic users.

In conclusion, this office is very interested in the Regional Treatment Plant being constructed. We feel the new plant will have the capability to remove and treat some of the toxicants which are presently entering the Village of Sauget's treatment plant. Also, the Sauget physical/chemical treatment facility provides a unique pretreatment feature that coordinates industrial pretreatment with the regional wastewater facility. The operational success of the Regional Treatment Plant, we believe, will depend primarily on the effectiveness of the combined capabilities of these treatment facilities and the overall effective management of the regional pretreatment program. (The development of the Village of Sauget's and the American Bottoms Regional Association's pretreatment program has been reviewed and comments will be forwarded to the Illinois Environmental Protection Agency for their review).

I trust that this letter has provided you with an understanding of the present and future responsibilities of industrial facilities connected to the Sauget treatment plant and those industries who will be users of the Regional Treatment Plant.

Any questions regarding the subject matter should be directed to Bob Robichaud (312) 353-2105, Regional Pretreatment Coordinator.

Very truly yours,

Charles H. Sutfin
Director, Water Division

Attachment

cc: Roger Kanerva, IEPA
Eugene Seebald, IEPA
Paul Sauget, Village of Sauget

EFFLUENT GUIDELINES
REGULATORY CALENDAR AS OF
7/1/82

Industrial Category*	Proposal		Promulgation	
	Scheduled	Actual	Scheduled	Actual
Adhesives & Sealants.	2/83	--	11/83	--
Aluminum Forming.	11/82	--	7/83	--
Battery Manufacturing	10/82	--	6/83	--
Coal Mining	--	1/13/81&5/29/81	9/82	--
Coil Coating.	--	1/12/81	11/82	--
Coil Coating (Canmaking). . . .	1/83	--	10/83	--
Copper Forming.	11/82	--	8/83	--
Elec.&Electron.Prods.(Phase I).	8/82	--	3/83	--
Elec.&Electron.Prods.(Phase II)	2/83	--	11/83	--
Foundries	10/82	--	8/83	--
Inorganic Chemicals (Phase I) .	--	7/24/80	--	6/29/82
Inorganic Chemicals (Phase II).	9/83	--	6/84	--
Iron & Steel Manufacturing. . .	--	1/7/81	--	5/27/82
Leather Tanning & Finishing . .	--	7/2/79	11/82	--
Metal Finishing (Electro-plating + Mechanical Products)	8/82	--	6/83	--
Nonferrous (Phase I).	1/83	--	1/84	--
Nonferrous (Phase II)	9/83	--	6/84	--
Nonferrous Forming.	9/83	--	6/84	--
Ore Mining & Dressing	--	6/14/82	11/82	--
Organic Chemicals (Phase I) . .	2/83	--	3/84	--
Pesticides.	11/82	--	12/83	--
Petroleum Refining.	--	12/21/79	9/82	--
Pharmaceuticals	11/82	--	9/83	--
Plastics & Synthetics	2/83	--	3/84	--
Plastics Molding & Forming. . .	10/83	--	6/84	--
Porcelain Enameling	--	1/27/81	11/82	--
Pulp and Paper.	--	1/6/81	10/82	--
Steam Electric.	--	10/14/80	11/82	--
Textile Mills	--	10/29/79	8/82	--
Timber Products Processing. . .	--	10/31/79	--	1/26/81[b]

Mr. ROE. Please proceed.

TESTIMONY OF CHARLES D. MALLOCH, DIRECTOR, REGULATORY MANAGEMENT, MONSANTO CO.

Mr. MALLOCH. Thank you, Mr. Chairman, members of the subcommittee.

I am a director of regulatory management for Monsanto. I am here today to speak on behalf of my company concerning our recommendations for proposed amendments to the Federal Clean Water Act.

Monsanto is committed to insuring that its manufacturing sites operate in an environmentally responsible manner. As a result of this commitment, and our experience in the past decade with the Clean Water Act and the regulations implementing it, we appreciate the opportunity to share with you our recommendations for improving the act's effectiveness so that it can meet the needs of the 1980's.

My written statement addresses certain concerns on issues connected with BAT and BCT limitations and I will not address those in my oral testimony. Instead, I will spend the next few minutes briefly summarizing why we believe local control of pretreatment programs is both necessary and makes environmental sense. Many times in the past decade Congress has heard about the cumbersome and complex pretreatment program developed by EPA and now in some degree of implementation.

EPA's regulations focus on the establishment of pretreatment standards equal to best available technology requirements. These requirements are largely redundant with the removal of priority pollutants by POTW's. To avoid such redundant treatment by industry and POTW's, Congress in 1977 added a specific provision authorizing the granting of credits to reflect the removal of pollutants by POTW's. Unfortunately, removal credits remained a fiction. Municipal authorities have found EPA's removal credit program to be cumbersome and unworkable.

We believe that POTW's are in a good position to control industrial users as needed to meet local permit and sludge disposal requirements. Such local controls allow resources to be targeted on specific problems where they exist. That is why we favor an amendment which would allow POTW's which qualify to implement alternate local programs in lieu of national pretreatment standards.

To provide the subcommittee with an informative example of a situation where pretreatment could be required because of regulation, but in fact is not necessary because of the removal capability of a POTW, I have in my written testimony presented a case history of Monsanto's Sauget, Ill., plant which discharges to a POTW.

In this case, three municipalities, East St. Louis, Sauget, and Cahokia, Ill., and their major industries have worked together to meet the mandates of the Clean Water Act to improve the environmental quality of the areas in which they are located. I will not cover the details of this program for you orally today but I hope as you read my written testimony you will be impressed with the fact that without this joint municipal, industrial cooperation the new

$77 million treatment plant designed to handle a combined waste load would not today be under construction and on schedule for startup in the next 2 years. However, even though this plant is specifically designed to treat the combined waste identified in my example, EPA stated in a letter to the regional plant authority that the act does not provide sufficient flexibility to overcome the need for redundant pretreatment facilities by the industrial dischargers once the plant is operating.

The industrial dischargers came forward with financial commitments to bring this treatment facility into existence. If industries must construct redundant pretreatment facilities once the POTW is online, we have no incentive to develop innovative and effective waste treatment facilities collectively with the municipalities.

Congress now has the opportunity to work out an acceptable amendment to change the law to solve these pretreatment problems. We recommend that the act be amended to allow POTW's to request permission from EPA, or the States where appropriate, to use an alternate local pretreatment control program when they qualify.

The request for an alternate to categorical limitations should state that the POTW meets the following requirements:

First, the POTW must have or will have an acceptable local pretreatment program to control industrial discharges as necessary to avoid interferences, passthrough and sludge disposal problems.

Second, the POTW must be achieving secondary treatment or must be on a schedule of compliance.

Third, the POTW must be responsible for addressing and handling any problems confronting its treatment system.

And finally, the POTW must have adequate funding and other resources necessary to carry out the local program.

The pollution discharge permit required of every POTW should assure that it meets the required treatment and water quality standards. Since each POTW has its own unique set of local conditions, it is in the best position to determine pretreatment needs to accomplish local compliance and to protect its treatment systems.

Obviously, some local POTW's will not be able to develop pretreatment programs due to the lack of resources or for other reasons. In these cases, the EPA categorical pretreatment standards should continue to be used.

In addition, until such time as the POTW requests EPA authority for an alternate system, the EPA categorical pretreatment standards should remain in effect and be enforced. However, once EPA receives a valid request for local authority, EPA should stay the categorical standards for that POTW while it reviews the request and if approved, then until the local program is in operation.

We strongly encourage the subcommittee to review the many testimonies urging that the pretreatment requirements of the act be amended to improve their effectiveness and workability. The option of returning the pretreatment program to local control would have numerous advantages and go far in fostering improved water pollution control cooperation between municipalities and their industrial dischargers.

Thank you for this opportunity to express my company's views on this point, and I would be happy to answer any questions.

Mr. ROE. Well, I want to thank the gentleman for his testimony. The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

Mr. Malloch, how long will it take for a POTW to request an alternative local pretreatment program, have it approved or denied and if approved, be operational?

Mr. MALLOCH. Well, it will vary somewhat in total time. But the POTW must, of course, in its request for the alternate program meet the various demonstrations I laid out in my testimony. In many cases, most of the demonstrations can be met today by many POTW's that already have pretreatment programs in effect and have secondary treatment. In other cases it may be a while before a POTW will be in a position to make all portions of the demonstration.

However, once the request is submitted, and as I have stated in my written testimony, I think there should be some specific time limit set for the EPA to review the request and make a decision to grant or deny it. I recommended approximately 6 months or 180 days for that period. After that, in many cases the system ought to be able to be operational very quickly within a matter of months.

Mr. STANGELAND. Does the local control pretreatment program you propose delay the installation of pretreatment facilities by industry?

Mr. MALLOCH. Not at all. In the case of a POTW that chooses not to go for an alternate system, obviously the categorical standards would still apply and would still be enforced and would have to be implemented in the appropriate time period.

In the case of a POTW that did decide to apply for the alternate system, once they have met the conditions to apply, then for that particular system, and at that point in time they would have a stay on the categoricals that would then apply.

However, there are cases where some pretreatment would still be required by certain industries even in the event of having an alternate system approved.

So my basic answer is no, it should not delay it in most cases.

Mr. STANGELAND. Why do you feel that a combined industrial municipal treatment plant such as you described in your example is better than each industrial discharger having its own treatment facilities?

Mr. MALLOCH. Well, I think there are two or three logical reasons for this. Perhaps the largest reason is that if a number of individual companies and municipalities go together, they can build a first-class, well operated POTW that can treat a variety of combined waste loads.

In many cases, one company's waste can be helpful to the treating of some other company's waste. The same is true in terms of the municipal waste itself being treated. It is less expensive. I think both the municipalities involved as well as the industry users of the POTW will benefit financially by a common-type system.

The particular example in my written testimony points out that without the combined cooperation of all the folks involved in putting that together, the city of East St. Louis, for instance, would not today be obtaining a secondary treatment plant because of the depressed economic conditions in that community.

So I think there are obviously benefits for the industrial user because we would not use the POTW if it did not cost us less. But conversely, there are benefits from the standpoint of the municipalities involved. The system is obviously going to be more reliable and one sidelight that comes out of this, once there is a good combined system in place you now have a utility in an area that probably could attract additional industry to that area because a system is already in place capable of handling a wide variety of waste loads.

Mr. STANGELAND. In your testimony you speak of cumbersome and complex pretreatment programs that have been developed by EPA.

Could you explain to us what you mean by that?

Mr. MALLOCH. Well, I am going to speak predominantly from the prospective of an industrial user, since I do not work for the municipalities or POTW's.

From our standpoint, we are obviously not seeing the capability of obtaining relief from the requirement that we would have to install redundant pretreatment in our own plants. When you talk to the POTW's involved, in some cases their concern is with the removal credit formulas that EPA has in their regulations. The arithmetic connected with them and the complexity of utilizing them are so complex they are quite leery to apply them. They are concerned about excessive paperwork, excessive recordkeeping requirements, the manpower requirements, and so forth.

I think the long and short of the whole thing is where there is a POTW system that is functioning well, a local system, then we believe that a local control system that is not tied up in a great deal of redtape as a result of regulatory requirements should be allowed to function effectively without needing to handle all this redtape.

Mr. STANGELAND. If POTW's were able to control their pretreatment programs, would industry have to do any pretreatment of their wastewater discharges or would they be getting a free ride?

Mr. MALLOCH. No, I do not think anybody gets a totally free ride. There are a couple of ways of looking at this.

First of all, pretreatment is still going to be required for certain pollutants to almost every POTW, even those that have well-run systems. As an example, my testimony refers to the Sauget regional system in Illinois. Back in 1978 we installed a multimillion dollar pretreatment system in our own plant to handle mercury effluents, because the POTW system either as it will start up in the future, or the current system, will not effectively treat mercury to the limits required. This is an example of where we did have to put in some pretreatment.

Obviously where a POTW is not able to play the game, that is to get into the local system, then all industries would have to put in pretreatment to match the categorical standards as they come out. So I think these are a couple of reasons why obviously there will still be pretreatment needs.

Mr. STANGELAND. Thank you, Mr. Malloch.

No more questions.

Mr. ROE. The gentleman from Georgia.

Mr. ROWLAND. Thank you, Mr. Chairman.

Do you think that your concerns about pretreatment are being addressed by the EPA making changes in the regulations rather than having to amend this act?

Mr. MALLOCH. Well, I think the EPA's track record is such that that is not happening. The complexity and the amount of detail behind the regulations that EPA has come forward with sort of indicates that they want a heavy hand and heavy control in all of these local systems and local POTW's. The track record just is not there to show that the regulatory scheme can do it. I do not think they have a clear understanding if the true intent of Congress was to delegate the responsibility for control to the lowest common denominator, in this case the local POTW, where they can qualify. I want to make sure that is understood. I think a POTW must qualify before allowing them to have a local control system.

But where they can qualify, I think there should be a clear understanding that the intent of regulations should be to encourage that type of an operation. In other words, the local control concept.

And I am not sure today that that is a clear understanding at the agency.

Mr. ROWLAND. Do you think that the proposal that you are making for local pretreatment program will have any detrimental effect on the quality of the water?

Mr. MALLOCH. No, sir, we are not proposing any change to how you set the limitations for the POTW, that is, the discharge limitations of its effluents. Just as with an industrial discharger, as an example, where you take a sample of the effluent itself and you test it for various constituents. If you detect constituents in that particular effluent that are toxic, then you obviously set limits on those constituents. And we are certainly not advocating any change to that concept.

Mr. Matthew a few minutes ago mentioned that there are screening techniques such as biological monitoring and so forth that are available today that were not available some years ago. So I think there are numerous types of mechanisms and approaches that can be used to guarantee that we are not going to be adversely affecting water quality and we are really not advocating any change to that portion of the procedure.

Mr. ROWLAND. What do you think would be the appropriate time for a POTW to request control of its local pretreatment program?

Mr. MALLOCH. Well, there are a number of POTW's today that probably ought to be ready to apply for an alternate control system right now. There are some categorical standards that have been issued. POTW's in many cases, particularly well operated POTW's that have secondary treatment in place, basically could meet all of the demonstrations that I laid out, that I feel that they ought to make. Those particular POTW's because of the need for a local program today should apply as soon as they could.

On the other hand, there are many categorical standards that have not yet been promulgated by the agency. One of the major concerns that my particular company has is that many of those categoricals affect our operations. We are shooting at a moving target, we have no idea what in some cases they are going to look like for those some 20 plants that we have that discharge to POTW's.

20-955 O—84——126

On that basis, I think the program should be set up to give us sufficient opportunity at a later date, to work with the local POTW and for them to be able to apply for an alternate system once we know what those pretreatment standards are going to look like.

When a standard is issued the first things we do in my company is we take a look and see if we are going to have to provide any type of treatment in our own plant to meet the standards as issued. But we also go down around the corner and we talk to the POTW to determine if that POTW has the capability of removing that pollutant.

We would like, at whatever time this happens, the opportunity to be able to work with the POTW and to jointly determine how much credit we could get for the removal of that pollutant in the POTW and hopefully either reduce, or possibly in many cases eliminate, the need for installation of pretreatment in our own plants.

Mr. ROWLAND. Thank you, Mr. Malloch.

Thank you, Mr. Chairman.

Mr. ROE. I thank the gentleman from Georgia.

We have a list of four questions from Congressman Young from Missouri. We will submit those to you, if you would be kind enough to give us a response we would appreciate it.

Mr. MALLOCH. I would be very happy to.

[The questions posed by Congressman Young and responses received from Mr. Mallock follow:]

RESPONSE TO QUESTIONS FOR MR. MALLOCH ON
BEHALF OF REP. ROBERT A. YOUNG BEFORE
THE SUBCOMMITTEE ON WATER RESOURCES
NOVEMBER 3, 1983. SUBMITTED BY MR. MALLOCH
ON NOVEMBER 11, 1983.

QUESTION #1

If Congress passes an amendment such as you propose, would industry need to install any pretreatment facilities?

ANSWER

In many cases yes. Where a local POTW has chosen not to request use of an alternative local pretreatment control system, then the categorical pretreatment standards would continue to apply to local industries as today. If a local POTW does request permission to use an alternative local control system, then there may still be the need for some pretreatment by industry. This will be necessary where for a given pollutant, the POTW is not able to remove that pollutant down to the level necessary to comply with its own discharge permit. In addition, any pollutant which would interfer with, pass through or affect the sludge disposal practices of the POTW will need to be pretreated by industry.

QUESTION #2

Would the individual homeowners see increased charges as a result of this pretreatment program?

ANSWER

No, not if the POTW manages its user fee arrangements properly. Industrial users who rely on a POTW to remove their pollutants, and are therefore not required to install pretreatment, should be willing to pay a user's fee for this treatment. The user's fee should be at least equal to the incremental cost to the POTW and in many cases, may exceed the incremental costs. For a pollutant, where the costs that industries would incur through the installation and operation of their own pretreatment facilities exceed the POTW user fee charge for POTW removal of the pollutant, then industries should be willing to pay the POTW for such removal.

QUESTION #3

Why do you feel that a local pretreatment program would work better than the present national standards approach?

ANSWER

There are a number of benefits that could occur as a result of encouraging local control which would not always be available using national standards. These include: 1) cooperation between municipalities and industries should be enhanced to resolve compliance needs in a first class, efficient, and cost-effective manner, 2) both the municipalities and industries would benefit from a reduced cost base for treatment since a combined treatment system fulfilling all needs would be more reliable, cost-effective and provide a valuable utility for the community, 3) once EPA, or if appropriate the state, is satisfied with the local program parameters, then EPA or the state should spend less time administering the program as long as the local POTW complies with its approved program. For the local POTW, it should be easier to administer the local program since the complex removal credit calculations would not be necessary as long as the POTW was meeting its discharge permit limits, and 4) the local POTW's cost for removal of a pollutant could be more than offset by increased industrial user fees where the POTW treats the pollutant in place of the need for industry to install redundant pretreatment facilities.

QUESTION #4

Mr. Malloch, do you believe that the industries and the local POTW in St. Louis have established a good enough track record which would help establish that city as eligible for the local pretreatment program you describe?

ANSWER

The St. Louis POTW should be able to qualify. They have a local pretreatment program which has EPA approval. They have secondary treatment in place or under construction at all but one of their treatment plants, and that one could qualify under a schedule of compliance. The current track record demonstrates that the St. Louis POTW and its industrial dischargers work together well and should be able to qualify for the alternate control program, if they fulfill the appropriate demonstrations which I referred to in my testimony.

Mr. ROE. Are there any other questions?

We want to thank you very much, Mr. Malloch, for your valuable testimony today.

Our next witness is Mr. Thomas Allegretti, representing the American Demineralizer Co.

Mr. Allegretti, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

AMERICAN DEMINERALIZER CO
4425 W. Monrose Ave
Chicago, Il 60641
(312) 545 6650

THOMAS ALLEGRETTI

I was admitted to the bar in 1935 at the age of 21. I enlisted in the Air Corps as a private in 1942. I went to O.C.S. at Provost Marshall's school. Was Chief of Investigation for the State of Michigan for the Provost Marshall Investigation unitwhich later took over a considerable amount of C.I. C.'s work including the Manhattan Project. I was transferred to Military Government, was with the British Army for a short time and then later became Military Governor of two kreises in Germany (about 500,000 people). Later was involved in War Crimes as an attorney. I established the above facts only to show a varied experience. In 1953 I went into the ion exchan ge business and in 1957 I started recirculating plating rinses to save water and to prevent spotting.....

There are 3 basic problems facing the government pertaining to the elimination of pollution.

1 The pollution problem itself and the prevention of further contamination of lakes, wells and streams.

2. Water conservation - although water is never eliminated by usage, the sources of water may be eliminated - (a) lowering of water tables.
(b) reduction of supplies from reservoirs, lakes and streams.

3. Reduction of "haulaway", reducing land fill areas and their necessity.

As to the elimination of these problems the answers, obviously, are to re-use water, never let it leave the plant and prevent its contamination so that it can be re-used.

Again - if the cost is too high, re-use and decontamination would not be the solution.

We, at Amdec (American Demineralizer Company) sell a service wherein we supply equipment to reduce pollution to ZERO and decontaminate water so that it can be reused indefinitely. We also do this at such a savings that repayment is within a 6 month period. We also save on chemicals to further decrease re-use cost. Since we keep our pH @ 6 we reduce sludge to

that which is entrapped by our filter cartridges... thus eliminating land fills.

May I cite some examples:

1. The big 3 auto manufacturers had written Washington concerning the difficulty of compliance with the regulations. Chrysler permitted me to visit their plant in Belvedere, Illinois. At Belvedere, approximately 1000 gpm of well water is used. The plant to process this water to drain cost $ 7,000,000.00. Using interest, depreciation and operating costs, I have estimated the annual costs to be approximately $ 2,000,000.00 . By using a system such as ours we can provide them with a higher purity rinse water and @ 2000 gpm. Further, we can filter their cleaners, phosphate and chromate solutions @300,000 gph. Presently they dump their cleaner every other day but by properly developing a cleaner, the cleaner should last many months. In this type of system - no water would go to drain and Chrysler would have the use of unlimited high purity water. Water is used in their painting section and this can be treated so that it, too, can be used indefinitely or sent to drain monthly. The decontamination should be simple. The cost of such a system would be less than $ 300,000.00 per year

In plating plants we cut water consumption by 98% and seldom less than 95%. In addition we save their cleaners, their nickel salts, the copper salts, most of the chromate solutions and still give them a spot-free rinse. We do not sell them on pollution control but we sell them on saving money. Their pay back is usually from 4 - 6 months.

While in California I visited Silacon Valley - most of the plants in the computer field could easily reduce water consumption 99% and have better rinses.

I also visited a tomato cannery, here 250,000 gpd were used. The B.O.D. to drain was extremely high. Both the water to drain and the B.O.D. could be reduced 98% and pay back within 6 months. It must be remembered, in most instances, the problem is not water supply but B.O.D. to drain - and this is a problem. The sanitary district could not handle any more B.O.D. nor water.

East of the mountains in the desert, plants could use 2,000,000 gpd and not even go to drain.

Homes, by judicious use of water, could be built in the $ 30,000.00 - 40,000.00 range.

The problem again is two fold - Congress doesn't know what to do and any two votes will change its mind. In 12 years we have accomplished almost nothing and yet spent untold millions. Since Congress will not grapple with the question industry, as a whole, does nothing. This is not a completely fair statement either as many industries have spent millions and have not solved their problems, effectively. In so far as pollution is concerned I understand that even Mr. Ruckleshaus in California allowed his company to pollute. The whole fault lies in Washington. Set the laws and enforce them.

As to the enforcement - use the IRS methods. The head of the company must submit a bi-monthly affidavit as to the composition of his effluent. Periodic checks should keep him honest, if he is not, a few indictments would be a simple means of compliance enforcement.

Some years ago I read a government report listing New Orleans as having the highest incidence of cancer... the drinking water came from the Mississippi. The next highest was Aurora, Illinois its wells were contaminated by the Fox River.

The health of this nation is in your hands. The previous statement seems trite as you have had many others appear before you who have reiterated such a statement. There are solutions available and good solutions.

As yet I have not heard from Chrysler or General Motors etc and I do not expect to - what's a few million dollars. Top executives are not noted for worrying about the health of our country unless it has a profit attached thereto. Should, however, the price of their water rise some 300 or 400 %, economy might then sink in.

To summarize and suggest -

1. Raise the price of industrial water.
2. Charge industrial well users for water taken from wells.
3. Pass a law making plant managers responsible for an affidavit of contents for water going to drain.
4. Allow or continue a tax deduction for pollution control equipment.
5. Do not spend more money for sanitary districts. If industries re-use water, they would have more capacity at less cost than they can use.
6. Advertise your laws, enforce them, there has been little enforcement in the last 10 years.
7. Don't listen to cry babies.

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THE U.S.NEWS WASHINGTON LETTER

A confidential weekly alert to changes that will affect you

Friday, July 1, 1983

Dear Subscriber:

WATER. Will we have enough? Clean enough? At a manageable cost? The answers to those questions are critical to the country's future. Because they are, this week's letter explores a single topic: WATER.

It begins on an ironic note, in the midst of warnings about shortages. Hard to believe with Colorado River rampaging and South still flood-dazed. Yet, long-range concern is we'll have not too MUCH but too little water. Story affects us all. Consumers. Investors. Farmers. Everybody. To see that more clearly, consider these background developments:

Fears over water quality in the United States are mounting steadily. Some scientists predict ruinous droughts, a national "water crisis." We're wasters. Typical city use by family of 4 is 346 gallons a day. Higher water bills are coming, plus higher taxes for water projects. The national thirst for the resource is climbing as population grows. Salt and toxic wastes threaten underground reservoirs in many places.

The worries are not just a western phenomenon. There's real concern about water availability even in New Jersey, with its 45 inches of average annual precipitation, and in the Southeast, where irrigation's on the rise.

Growing problem in many areas: Mismanagement of the supply on hand. In others, intergovernmental scuffling. Towns fighting "water wars." In some big cities, aging pipes that leak millions of gallons a day.

Adding to the anxiety: Lack of a comprehensive national water policy. One that improves conservation, helps to avert shortages and makes rules for irrigators and industry, who together account for 89% of consumption.

Water-shy states want such a policy, but the Reagan administration, to date at least, seems to favor throwing the issue back into their laps.

At the top of the danger list: All of New Mexico and Arizona, also the western reaches of South Dakota, Kansas, Oklahoma, Nebraska and Texas.

Large portions of California too -- Sacramento area and points south. Studies by Uncle Sam point to likelihood of major surface-water problems in 17 of 21 subregions by year 2000, including the states just mentioned.

As a nation we are using nearly 500 billion gallons of water daily. That's double the volume consumed back in 1950. Much of the increase is due to the advent of modern plumbing, swing to more showers, sprinklers. But the giant gulpers, farming and industry, have boosted usage the most.

Underground water? Crucial source of 50% of what our citizens drink. Take Florida as an example. U.S. report due out next fall will say city, industrial pumping have lowered its water table more than 150 feet and that over 900 hazardous waste sites and landfills are slowly polluting the underground reserves on which 92% of that state's population depends.

Irrigation? Another headache -- much economic, political fallout. Over 50 million acres are irrigated in the U.S., up 30% since 1969. Most of it in western states, but an increasing amount in the East. Many of the systems are old, inefficient and crying out for repair. Cost for that? $630 million a year, Soil Conservation Service says. Western farmers who irrigate vie with industry for water they need. Some say the competition could force more food production eastward.

200,000 wells puncture the High Plains alone, drawing off supplies from the Ogallala Aquifer, an 800-mile-long lake hidden under six states. Last December a joint industry-government report estimated that 23% of the Ogallala's contents will be gone by 2020 -- and sooner if droughts strike. Losses to New Mexico, Oklahoma, Texas would be severe, report stated. Would mean thinner herds, more dryland farms, higher prices for food.

Water purity is also an issue that bears watching in coming months. Environmentalists are fuming at the President, say he's shortchanging efforts that could help the U.S. sidestep future crises over water quality. Charges against Reagan? That he enfeebled three important water units, including the Council on Environmental Quality, the Water Resources Council and Office of Water Research & Technology. It's also claimed that Reagan played a reckless game by attempting to roll back antipollution standards. "Sellout to industry," critics charge. They want Uncle Sam as cop.

President Reagan's defenders? They say he's merely putting the issue where it should be -- at the doors of regional, state and local officials. They also point out he is now conceding that acid rain IS a problem. Here again, a sore subject with environmentalists who've long been arguing that airborne industrial pollutants kill lakes in the Northeast and Canada. Safe Drinking Water Act is of concern too. On the books since 1974, the law is being reviewed amid new demands for tougher antipollution regs. Curbs on lead and mercury levels, and on the leaching of hazardous wastes. Forecast? Congress will bypass the controversial issues until 1984.

As for the Environmental Protection Agency, its budget's been sliced. A drop of 24% since 1981, plus a personnel reduction of several thousand. However, the '84 budget -- en route to Reagan as we write -- is up again. On underground water, agency's new head told Congress the EPA has a role in protecting it, but main responsibility should remain with states. EPA's supposed to forge standards for industrial effluents in surface water, but so far has issued only a few proposed regulations, a situation that leaves industry shaken since it must comply with rules by July 1984. Forecast? Watch for Congress to extend the deadline on compliance.

Growers in the Midwest? They're on needles, not only over tomorrow's reserves of water but over its quality and the uneven distribution of it. Contamination heightens their concern -- herbicides, pesticides, salt and other potentially harmful substances that threaten underground pools. In Michigan, 649 polluted sites, contamination in almost all counties. In Wisconsin, septic-tank failures and leaky below-surface gas tanks. In Iowa, many wells improperly installed, some tainted by fertilizer.

Says who? Says Nat'l Conference of State Legislatures in report on underground water woes to be released this month at a meeting in Chicago.

Water-purity fears have sparked a boom in the sale of bottled H_2O:

Consumption's risen 278% since 1976 to annual sales of $700 million.
Californians drink half of the bottled water marketed in this country. Think of it. In 1982 alone they purchased more than 300 million gallons.
And we're not including seltzers or club sodas derived from tap water, only the distilled or mineral-spring waters so apparent in supermarkets.
Imported Perrier now has 75% of the business, U.S. labels under 10%. Field is attracting new entrants, including dairies and soft-drink houses.
Upshot? Much churning in the trade. So much that the sparkling-water bottlers have asked Food & Drug for standards covering all "mineral" types.

Note products that already show worry over water's safety or cost:
Carbon filtering devices...the price for them can range up to $175.
Reverse-osmosis filter...costs more but called worth it. $300 and up.
Water-stingy shower heads...dole out two gallons instead of 5 or more.
New filters, water softeners, even de-salting devices for home use.
And compressed-air showers, toilets that use only a quart of water.

Fact is, we're close to an explosion of new products and technology.
One large enough to shower riches on some investors and companies.
Trick? Knowing WHICH firms to pick in a line sure to become crowded. Among water-resource outfits now publicly traded: Culligan International, Ametek and WICOR. Some contend that WICOR has excellent profit potential for the long term. Still, good idea to check carefully into any firm that you hear discussed -- into its management, earnings record and prospects.

There are also investment possibilities outside the household market.
Analysts cite water cleanup as a field in which profits will be made because of concern about the effects of "tap" chemicals on human health.
They predict quickening sales for such things as pumps, meters, pipes, valves and comminutors, which are used to regulate solids in waste water.
Best overall profit growth? Traders talk up Goulds and Gorman-Rupp. Irrigation equipment? Valmont. Underground pumps: WICOR. Flow control: Gorman-Rupp and Gouids. Meters: Crane, Badger. Cement: Lone Star.

Cloud seeding to make rain? Catching on, but future's still hazy. Hard to control rainfall caused by scattering of silver iodide crystals.
What drops on your land may be a help, but if a downpour's widespread it could be a nuisance, or worse, for your neighbor, even bring a lawsuit.
One company in the rain-making field grossed $40,000 back in 1960. It now reports sales of $4 million, has nine projects currently under way.

Desalt more ocean water? Will happen, but expense is a deterrent.
Import surplus water from Canada? Unlikely scenario at this time.
Pipe fresh water from polar caps? Cost of doing it is prohibitive.
Tow icebergs from the Antarctic? The Rand Corporation studied this, concluded it would take a year to park a berg outside thirsty Los Angeles. The high cost has even frightened off a Saudi sheik who explored the idea.
Numerous books and reports deal with the water issue. A sampling: "Nor Any Drop to Drink" by environmental activist William Ashworth. His 272-page analysis of the subject is $6.95 in paperback, from Summit Books. "Water, the Next Great Resource Battle" handles the topic at swifter pace. By Laurence Pringle, Macmillan. $9.95 for hardback. 144 pages. Photos.

Some climatologists expect awful droughts to hit the United States. A dry period worse than that of '76-77 and possibly one of the worst ever.

When? Within the next 15 years, perhaps sooner. By their reckoning, key farming areas would be devastated and food-production systems upended.

They also warn that global weather patterns could change drastically over the decades just ahead. How? As a result of the greenhouse effect, an unusually severe heat-up caused by pollutants trapped high in the air.

Melting of glaciers would accelerate, seas would rise more rapidly. Meaning? A crazy quilt of floods and droughts. Weather chaos worldwide.

Ice-free shipping lanes would open near the poles, under one scenario.
Midwest temperature would jump, run about 10 degrees higher all year.
Lethal dryness would hit Iowa, Kansas. Canada would get a rain bonus.
Some weather experts even fix 2020 as a likely year of "superdrought."
Why 2020? About then both warming and reservoir depletion would mesh.

Granted, there's both theory and speculation in such scary forecasts. Yet that does not mean they can be dismissed out of hand. The American Association for the Advancement of Science is taking them seriously enough. Beginning in 1984 it will devote three years to the collection of facts on the link between climate and water supplies. First effort of its kind.

There's a bright side to the "disaster" coin. Mankind won't simply stand still and let the worst happen without trying to halt or soften it. Instead, the wheels of innovation will turn faster to head off catastrophe.

You'll see more crops that require little water for their cultivation.
You will also meet halophytes -- vegetables that grow in salt water.
Look too for closed-environment farming done in plastic greenhouses.
New underground barriers that halt the flow of reservoir pollutants.
Better water management by industry, farmers and local governments.
And use of bacteria that "eat" chemical poisons. Bio-reclamation.

The struggle over water raises many questions that will end up right here in Washington seeking answers from Presidents, Congress and the Court.

Who OWNS the water? Enough in that alone to occupy a lawyer's career. Curbs against interstate transfers of water are already under heavy fire.

Establish a U.S. Department of Water? Some expect one before long -- feel it makes as much sense as an Energy Department to handle oil crises.

Water as a decisive political issue? Will be one as early as 1985. That's what capital seers tell us. Say it's coming with '85 farm bill.

BOTTOM line? Your taxes will rise to pay for future water projects.

The cost of water is headed up too -- what you're charged as a user. Average American is billed $1 for 1,000 gallons. West Germans pay $2.80. As the U.S. price rises, inventive people will be challenged to develop methods and products that keep water not only affordable but safe to drink. Big challenge -- may prove to be the greatest one we've ever faced.

Sincerely yours,

Paul Trivoche

Editor, U.S. News Washington Letter

Vol. 9, No. 26
12:01 p.m. EDT

P.S. Richard E. Scott was the principal reporter for this week's letter.

Mr. Virgil Showerman
Collis - Div. Chamberlain Mfg.
2005 S. 19th
Clinton, Iowa 53732

Dear Mr Showerman:

Enclosed is our schematic of the proposed pollution control and water reduction of your plating lines. You will find a great use of timed sprays. In the cleaner sprays, deionized water will be used to reduce dissolved solids. All sprays will use 5 micron filters. Incidentally the sprays and pipes, furnished by us, will have unions to facilitate quick changes, should a spray clog.

Line - Hook up

1. Cleaners -: The soak and electro cleaners will have timed sprays (a deionized and timed spray to equal evaporation. Limit switches will start and stop a 3/4" solenoid valve supplied by us. You will install limit switches and spray lines. The rinses will also use a timed tap water spray although re-used water from the indexing filter will be used for the rinse. In the electro rinses there are two rinses so the first one will be a timed spray equal to evaporation. These tanks will be pumped to the electro on a "keep full" basis.

Acid - The acid rinses will be a running rinse from the indexing filter. A timed spray will act as a final rinse.

Zinc Plate - The first two tinses will be timed spray rinses from tap water. The overflow will be pumped to a cyanide destruct system. Tank # 18 will be a recycled deionized rinse.

Chromate- Tank #20 will have a timed spray rinse, this will go to drain. If the chromates are above regulations, we will use bisulphite to reduce the chrome, filter, heavy metal removal and to drain. Tanks # 22 and 25 will be recycled with deionized water. Tnak # 24 will use a timed spray. The overflow will go to the indexing filter for reuse.

Connections - A 2" pipe will carry the overflow from tanks #2, 5, 7, 8, 11, 13 & 14 back to a collection reservoir. From there it will be pumped to a treatment reservoir with a dry powder feed, a pH control, an acid feed and a mixer. It will then flow into the indexing filter for primary filtration. From there, it will be pumped to a 4 cartridge filter, a heavy metal remover and back to the rinse tanks. The excess will go directly to drain.

Piping back to the tanks will be 1½" pipe. Each "Tee" to the rinse tanks will have a Dole flow control and a valve. We will provide the 1½" pipe to the rinse tanks with the flow control and valve.

The recycled tanks will need no piping if we can place them within 5 feet of the rinse tank

We reiterate that we guarantee compliance with the pollution control regulations.

The system on a purchase basis would, per line ..... $ 51,500.00
This would include the final destruct system.

After 5 years, the cost of the system , on a service basis - monthly 3,000.00

The purchase price after 5 years, per line 5,000.00

I am available at any time for addtional discussion and explanation to any questions that you might have.

Very truly yours,

Thomas Allegretti

AMERICAN DEMINERALIZER CO
4425 W. Montrose Avenue
Chicago, Il 60641
312 545 6650

November 26, 1982

Mr. W. Tipton
Water Saver Faucet Co
701 W. Erie St
Chicago, Il 60610

Dear Mr. Tipton:

To comply with MSD rules, reduce water, chemical and cleaner consumption, we suggest the following:

Both Cleaners to be filtered.

Discussion - The cleaners need not be drained for at least a year. The spray rinses will be deionized. The make-up will be deionized.

Whatever water reaches the drain will be pumped to a pollution control sump, treated and sent directly to drain. You will supply a floor sump and electrical connections to our equipment.

Note: We guarantee compliance. We handle all MSD legal problems.

The cost of the installation ..... $ 5,000.00
Terms - with P.O. 2,000.00
Balance - 30 days after completion of the installation.

We propose that - #1 & 3 be rinsed in #2 - a timed spray rinse.
#6 rinse be pumped back to the #4 rinse.
#8 rinse is a timed drag-out rinse pumped back to #7 Cu solution.
#9 is recycled, nothing to drain from Cu.
#11 rinse is joined with the #6 rinse and pumped back to #4.
#13 is a drag-out timed spray rinse and is pumped back to #12.
#14 is recycled - nothing to drain from Ni.
#16 is a timed drag-out rinse and is pumped to # 15. The sprays must equal evapoartion and drag-out of tank #15.
#17 & 18 are the final rinses and are run @ 140°F. These are counterflowed. The floor sump will be dug out to allow pick up from the floor for treatment before being sent to drain. Total flow to drain - 3 gpm.

Your monthly service cost 575.00
This includes all maintenance of equipment, exchange of deionizers, filter cartridges etc.

All equipment remains the property of American Demineralizer Company.

We reiterate that we keep you in compliance with the MSD regulations.

Very truly yours,

American Demineralizer Co

4425 W. Montrose Ave
Chicago, Il 60641
(312) 545 5650

1/8/82

Handy Button Machine Company
1750 N. 25th Avenue
Melrose Park, Il 60160

Gentlemen:

To reuse the rinse water and prevent pollution, we suggest the following:

A. BRASS - ZINC LINE

Tank #2 - this will be recycled (a recycled rinse). The equipment required -
(a) one 1hp, 3 phase pump/filter assembly
(b) one 18x72 deionizer

Tank #4 - a reused water rinse. Equipment - (a) one 1 hp, 3 phase pump/filter assembly.
(b) one 18x72 deionizer.

Tank # 5 - this would have a 4 cartridge filter (8x28 cartridges) plus one 2 hp pump for recycling to keep the tank clean.

Tank #6 - one 4 cartridge filter, 2 hp pump again for recycling to keep tank clean.

Tank #7 - a drag out tank - timed sprays.

Tank # 8 - will use water from the final filtration system.

Tanks 11 & 12 - Tank # 12 will contain fresh water. It will be counterflowed into tank #7 and overflow to the collection reservoir.

Tank #19 - this will be counter flowed. The overflow will go to a collection reservoir and will be pumped to the cyanide destruct system. The cyanide destruct system will consist of 2 - 500 gallon tanks one above the other. A hypochlorite will be used to break down the cyanide. The overflow from the top tank will flow into the 2nd tank. It will be treated for reuse.

Tank #20 - will be recycled.

Tank # 25 - this will be a drag out tank.

Tank # 26 - this will be overflowed into the central collection system for reuse. The central collection system will contain a dry chemical feed for flocculation. Three 4 cartridge filters in parallel will be used for filtration with a 2 hp, 3 phase plastic pump. A heavy metal remover will be used to convert non-sodium salts to sodium salts. An overflow of excess water will go to the final treatment before being piped to drain.

Tanks # 28 & 29 - these are recycled.

American Demineralizer Company

B. NICKEL LINE

Tank #2 - this will be recycled using a plastic 1 hp, 3 phase pump/filter assembly. Deionizers will be used for ionic removal.

Tank #3 - one 4 cartridge (8x28) filter and 2 hp pump will be used for filtration.

Tank #4 - one 4 cartridge filter (8x28) and 2 hp pump will be used for filtration.

Tank #5 - this overflow will go to a central collection reservoir for re-use.

Tanks # 7, 8 & 9 - these tanks will be counterflowed. Tank #9 will have fresh water. The overflow from tank #7 will go to a central collection reservoir for re-use.

Tank # 14 - this overflow will be piped to the central destruct unit. Tank #14 will be sent to the nickel recovery unit for recycling and nickel pick up.

Tank # 15 - this tank will be counterflowed with tank # 14 when no black nickel is used. When black nickel is used it will go to the central reservoir for re-use.

The nickel recovery unit will consist of a 500 gallon plastic holding tank with a 3/4 hp plastic pump and filter. One 18x72 Carbon unit will be used for the nickel pick up. This unit will be regenerated on your premises for nickel recovery. Two 18x72 gallon tanks will be used for the acid radical pick up. One 2 hp pump/ filter assembly will be used for recirculation and one 100 gallon reservoir with one ½hp pump will be used for regeneration.

The central reservoir will have a dry chemical feed plus a 4 cartridge filter and HMR remover.

The final collution control system will use 3 sump pumps at different levels to prevent floodup. Water will be pumped to a 500 gallon reservoir by the sump pumps. One 1hp, 3 phase plastic pump and 4 cartridge filter will clarify the water before going to a HMR and before being piped to drain. A recording pH control will also be used for monitoring.

It is anticipated that the 3 lines will have 1. 200' - 2½" pipe plus fittings.
2. 350' - 2" pipe plus fittings.
3. 700' - 1½" pipe plus fittings.

The cost of the installation ..... $ 45,500.00
With purchase order - one half
Balance - 2 monthly payments - 30 & 60 days after start up.
Monthly service cost 2,500.00
This includes all maintenance, replacement of equipment etc as needed, deionizers HMR's exchanged and also the filter cartridges.

We are available to answer any questions that you might have.

Very truly yours,

Thomas Allegretti

• WATER MANAGEMENT ENGINEERS •

American Demineralizer Co.

4423 W. MONTROSE AVE. CHICAGO, ILLINOIS 60641
(312) — 545-6650

One-Year Payoff for Demineralizers

Chicago job plater installs units to cope with pollution, shipping spent resins back to the supplier . . .

A Chicago job plating shop has installed 11 deionizers to cope with pollution-control problems. According to Wayne E. Fell, president of Atlas Plating Works in Cicero, Ill., a Chicago-area city, the deionizers have not only removed contaminants from plating rinse water but have saved about 800 dollars monthly in water bills.

Engineered by American Demineralizer Co., Chicago, the system has reduced the use of water at Atlas by 80 pct and eliminated product spotting at the same time. Formerly, two full time employees were required to wipe the finished items as they came off the plating lines.

WAYNE E. FELL (left), president, Atlas Plating Works, Inc., Cicero, Ill., shows Laddie Coller, plant manager, how pure the water is after it is treated for recycling in the concern's new demineralizer system. One of the 11 deionization units can be seen at left

A pioneer in the electroplating of plastics, the 58-year-old Cicero concern has three plating lines. Two are for plastics, one for steel. Because of a recent surge of business, an additional line is now contemplated.

The 11 deionizers serving the plating lines at the rinse points remove chemicals, metals and other contaminants from the water before the water is recycled. To save additional water, it has been decided to install three more units.

The system will pay for itself in about a year in water savings alone, states Mr. Fell. The other economies are also significant, especially the elimination of spotting.

Deionization cylinders are replaced with fresh units at two- to four-week intervals. The spent units are trucked to American Demineralizer, where nickel, copper, chromium and zinc are recovered by regeneration techniques.

"Although plating is a relatively small part of the total picture in the metals industry," said Mr. Fell, "it has been the target for some of the most highly restrictive pollution controls. Chicago platers have had a serious problem trying to conform with the ten-parts-per-million pollution limit imposed by the code of the Chicago Sanitary District.

"Fortunately, our new demineralizing equipment solves the problem for us." PF

For more data circle 241 on Postpaid Card

AMERICAN DEMINERALIZER CO.
4425 W. Montrose Avenue
Chicago, Il 60641
(312) 545 6650

May 27, 1983

Sentra-Met Inc
118 S. Main St
Summitville, Ind 46070

Attention: Mr. John See

Dear Mr See:

Per our telephone conversation I would suggest the following:

I. CLEANERS (Filters)

(a) Both the soak and the electro cleaner are filtered @ 5000 gph. We use our 5 micron, special paper cartridge which absorbs the oil and removes the dirt.

For make-up and to prevent dissolved solid build up we use deionized water for the timed sprays. These are usually 5s econd sprays and the total volume must not exceed the evaporation and drag-out. By filtering, the cleaners should last indefinitely. By using the sprays we wash the cleaner back into thetank to save it and, also, increase life for our recycled deionizers.

(b) Rinsing - The cleaner rinse is recycled and nothing goes to drain.

2. ACID (acid solution)

(a) The acid tank will have a 5 second tap water, pressurized mist to wash as much of the acid as possible back into the acid tank. This is done to reduce the load on the deionator.

(b) Acid Rinse - the rinse is joined with the cleaner rinse at the collection sump. It is then pumped through the filter and the deionizer and back into both rinse tanks @ 20 gpm. No water goes to drain.

3. NICKEL (nickel solutions)

(a) Each nickel tank will have a timed spray equal to the drag out. These 5 second deionized water sprays will wash almost 100% of the drag out nickel back into the nickel tank thus increasing the life of the deionator.

(b) Nickel Rinses - we will use to recycled, counterflowed rinses. There will be no drag out rinse as the sprays are used in place of a drag out. Nothing goes to drain.

4. Chrome (Hot Chrome Tank Rinse)

(a) The chrome tank rinse will also have a timed spray equal to drag out. Since chromic acid is more viscous than the nickel solution, our rinse efficiency with the sprays will be about 95%. Nevertheless the sprays enable us to recycle the next tank @ 20 gpm very economically.

5. FLOOR & ACID

(a) an 18" sump in the floor with a 1/3 hp sump pump will pump the floor water to a 200 gallon plastic tank. This tank would also be used to remove the heavy metals from the acid after it is pumped to this tank and the pH adjusted to 5.5. The water in this 200 gallon reservoir will be pumped through a filter and heavy metal remover and sent to drain. This should not exceed a couple of hundred gallons per day with a heavy metal content of 0.5 ppm.

6. COST

(a) the cost of the above equipment ..... $ 21,500.00
this includes the supervision of the installation which should take only a few hours as most of the equipment is pre-fabricated.

(b) Terms - with purchase order (one half) or 10,750.00
balance - 6 equal payments of 1,796.00
beginning 30 days after installation

Upon receipt of final payment the filter assemblies become your property. The deionizers and heavy metal removers remain the property of American Demineralizer Company.

DISCUSSION

There will be 2 sets of deionizers, when the first set is exhausted you will notify us and we will prepare another set. Your truck will deliver the exhausted units to our plant and exchange them for regenerated units.
The cost per unit - exchanged..... 200.00
each set should last about 4 - 8 weeks.
The filter cartridges must be exchanged at the very most, every 60 days.
The cost per filter cartridge (7"x24" or 7"x25") each, lots of 6 ..... 22.00
The cleaner filters should be changed every 60 days, at the most.
The cost per cleaner cartridge..... 35.00
The latter cartridge can be cleaned once or twice for re-use.

Please feel free to call me for any further discussion.

Very truly yours,

Thomas Allegretti

TA:ma

February 25, 1983

M S L
Connell St & Moen Avenue
Rockdale, Il 60433

Attention: Mr. William Cook

Gentlemen:

After my recent visit to your plant I would like to make the following suggestions:

Phosphate Line

1. Most of the water in the phosphate line should be reused.

2. Both cleaners should be filtered @ 5000 gph.

3. That the first rinse be a drag out rinse with a timed spray over the barrel as it turns. The deionized spray will equal the evaporation of the cleaner tanks. A small sump pump will pump the liquid back to the cleaner tanks on a keep full basis.

4. The 2nd cleaner rinse will be recycled and deionized.

5. The acid tank will have a tap water rinse as now.

6. The 1st phosphate rinse will be a drag-out similar to the 1st cleaner rinse. The liquid is automatically pumped back to the phosphate tanks.

7. The last rinse will be recycled.

Note: The only water to drain will be the acid rinse tank. Since there are no pollutants here it will be pH controlled and sent directly to drain. When the cleaner tanks are dumped the cleaner should be saved for neutralizing the acid rinse.

Cost - The cost of the system ..... $ 8,150.00
terms - with purchase order - ½ or 4,075.00
balance - 2 installments (30 & 60 days after start up)
Monthly service cost 700.00

Service cost includes the exchange of deionizers every three weeks and the cartridges will be exchanged at the same time, four cartridges for each cleaner and one cartridge for each filter before the deionizers. We also provide a reserve set of deionizers and cartridges, this prevents any shut down.

AMERICAN DEMINERALIZER CO.

MSL

Service (cont'd)

You will deliver the exhausted deionizers to our plant and pick up the new sets.

We will replace any defective or worn out equipment at no further cost.

The flow rates for the recycling will be 20 gpm for each rinse tank.

All equipment,except the cleaner filters, remains the property of the American Demineralizer Company.

Delivery time is from 2 - 4 weeks.

Burnishing Line

We suggest recycling the burnishing line using the following equipment, this equipment will remain your property and we will replace any parts that break down within one year.

Equipment - (1) one sump pump to pump water from the present pit to the indexing filter.
(2) one 30 gpm indexing filter (10' long x 4' wide x 3' high).
(3) dry powder feed.
(4) one sump pump to pump water from the indexing filter to the water reservoir
(5) 300 gallon tank for reservoir (this is provided by your company).
(6) one 4 cartridge polishing filter.
(7) one 1½hp centrifugal pump.

Discussion - Water from the burnishing drums and the tumblers will go to the reservoir in the pit. From there it will be pumped to the filter. From the indexing filter it will be pumped to the 300 gallon reservoir. The 1½hp pump will pump the water through the system. The pit will act as a reservoir. We suggest an air line at the bottom of the pit to agitate the precipitate when the sump pump goes on.

We further recommend a 1½" pipe from the centrifugal pump to the 3/4" manifolds for the tumblers. A 1½" line should be used to fill the burnishing machines.

The flow rate will be @ 30 gpm. We suggest emptying the system every two weeks to keep the water fresh. A bacteriacide should be added to the water

The cost of this system ..... $ 9,450.00
Terms - with purchase order ..... one third
balance - 30 & 60 days after start up.
Filter media costs including the polishing cartridges are hard to estimate.
One set of cartridges should last 30 days @ an exchange cost of 80.00
Indexing filter media, approximately, per month 120.00

I will be in touch with you to discuss any questions you might have.

Very truly yours,

Thomas Allegretti

February 9, 1983

Mr. Don Knapp
Plant Manager
Sloan Valve Company
10500 Seymour Avenue
Franklin Park, Il 60131

Dear Mr. Knapp:

We are in receipt of Mr. Callier's letter indicating the following costs in your plating process:

Nickel salts	$ 30,132.21
Cleaners & Brighteners....	26,122.00
Water use cost	22,719.00
Trans & Hopper rental..	5,424.00
Total	84,397.21

Had our system been in place in 1982 your costs would have been as follows:

Nickel salts (will recover 95%)...	$ 1507.00
Cleaners & Brighteners (will recover 80%) ..	$ 3224.00
** since they are filtered & deionized they will remain in like new condition.	
non recoverable material.....	1968.00
Water usage (reduced 95%).....	1136.00
Transportation & Hopper rental	none
Total	9835.00

The savings, therefore, for the year would have been	$ 74,562.00
However, there is a one time charge - installation..	18,450.00
Monthly service cost x 1960.00	23,520.00

Your first year's saving would have been $ 32,500.00 and subsequent years over $ 50,000.00

In addition to the above savings there would have been a reduction in energy to evaporate the chrome rinse as well as a reduction in chemicals for precipitating the sludge. Further there would have been no labor for handling the same.

Sloan Valve Co

The installation cost of $ 18,450.00 would be payable - one third with P.O.
One third - in 30 and 60 days after start up.

The monthly service charge includes all maintenance, equipment replacement and changes of deionizers etc.

EQUIPMENT SUPPLIED -

A. Soak Cleaner - (a) timed deionized sprays with solenoid & filters
(b) Recycling - 1 hp, 3 phase plastic filter/pump assembly with 20 gpm deionizer.

B. Electro Cleaner - (a) timed deionized sprays with solenoid & filter
(b) Recycling - 1 hp, 3 phase plastic pump/filter assembly and a 20 gpm deionizer.

C. Acid - (a) 1 - 3gpm spray over full tank.
(b) ½hp single phase pump/filter assembly
(c) Heavy metal remover for effluent to drain.

D. Nickel Line - (a) timed sprays on the first rinse. The liquid is pumped back to the nickel tank. The sprays must equal the drag out and evaporation of the nickel tank. The sprays usually rinse off 95% of the copper.
(b) high purity deionized water rinse @ 20 gpm, 1 hp, 3 phase filter/pump assembly.
2 - 6 cu. ft deionators.

E Chrome - (a) timed sprays over the rinse tank. These should be approximately 1 gpm to reduce evaporation costs.
(b) 150° F recycling system for final rinse - 1hp 3 phase, plastic filter/pump assembly.
1 - 6cu. ft deionizer

DISCUSSION - all rinses except the acid rinse are deionized.
flow rates - 20 gpm as a by pass system.
each recycling system is separate thus eliminating down time.
one can always go back to a raw water rinse.
final pollution control at drain guarantees no pollution.
cleaners are filtered @ 60 gpm to maintain cleanliness.
cleaners are made up with deionized water.
we suggest you start with 50% of normal amount of cleaner compound and add until adequate cleaning power is reached.
as a result of the deionized spray only deionized water is added.
deionized sprays reduce dissolved solid build up.
cleaners last indefinitely.
nickel solution is washed back into the first rinse with deionized water equal to the evaporation of the nickel solution so that about 95% of the drag out nickel is saved.

Sloan Valve Co.

DISCUSSION - energy costs are reduced by using a timed spray rinse for the chrome rinse.
the following chrome rinses are recycled @ 140° - spot free rinses result.
since the only water going to drain is from the acid rinse - the heavy metal is removed at the drain.
your flow will be from 1 - 2 gpm making pollution control simple and expedient.

Should you decide to accept our system, we would apply the same to your brite dip and strip line.

In the case of the brite dip, the first rinse would be plated out to recover the metals which would be added to your foundry metal.

As to the strippers, this metal would be plated out and sold.

In both applications the following rinses would be recycled. The flow to drain, in each instance, should be less than 100 gph and would be run through a heavy metal remover.

We would like to test plating out the strip and brite dip solution to give them longer life and pick up more metal. Since we do this with HCl at our plant we would have to experiment to test the efficiency of our "plating out" system. This would be done, of course, at no cost.

We would appreciate a further meeting and discussion so that we may answer any questions you may have.

Thank you for your courtesy and time.

Very truly yours,

Thomas Allegretti

TA:ma

cc: Mr. K. Peto

Please note - all equipment remains the property of the
American Demineralizer Company.

AMERICAN DEMINERALIZER CO.
4425 W. Montrose Ave
Chicago, Il 60641
(312) 545 6650

June 27, 1983

Mr Dean Homan
Maintenance Supervisor
Callen Mfg., C rp
13 E. Lake St
Northlake, il 60164

Dear Mr Homan:

To comply with future EPA rules in regard to zero to drain, we suggest the following:

I. Recyled filtration for the vibrators:

(a) an indexing filter with flow rate of 20 gpm.
(b) a dry powder flock to aif in filtration.
(c) collection reservoirs and pumps.

II. Die Cast Release:

(a) The collected water from the die release would be used in the vibrator system.

III. The cost - of the above system ..... $ 5,000.00

IV. Cooling Towers

The evaporation from the two towers would be approximately 13 gpm. By using deionized water, there would be no water to drain. Further, chemical costs should be reduced 85%.

(1) deionizing system would consist of - (a) 20 cu. ft of cations - 24"x96" lined tank
(b) 15 cu. ft of anions - 24"x84" lined tank.
(c) 1½" piping
(d) semi-automatic with manual valves; automatic regenerated rinse; 130,000 gal. capacity.

V. Cost - deionizing system..... $ 12,000.00

VI. Terms - with P O. 50%
balance ..... 60 days after installation.

Discussion

With the aforementioned system - approximately 1800 gallons of regenerating and rinse water would go to drain every 10 days..

The water would be completely free of pollution and would contain only calcium and sodium salts of carbonates, chlorides and sulphates.

Because this system is being offered on a per cost basis we must request the 50% payment with purchase order. We can extend the balance terms to a 60 day period after completion.

I will be happy to answer any questions that might occur. I look forward to hearing from you.

Very truly yours,

Thomas Allegretti

TA:ma
cc: Mr W. Rudin
Mr. W T Andresen, American Die Casting Institute, Inc

Mr. Roe. Please proceed.

TESTIMONY OF THOMAS ALLEGRETTI, AMERICAN DEMINERALIZER CO.

Mr. ALLEGRETTI. Mr. Chairman and gentlemen, I would like to make the U.S. News Washington Letter as part of your record. It is one of the best things I have seen on water.

What I am going to say to you is at odds with some of the things we have been hearing but I must admit that I have never been through a chemical plant. When I called them, they had no problems.

Now basically there are three problems facing the Government pertaining to the elimination of pollution.

First, is that it is a pollution problem itself and the prevention of further contamination of lakes, wells and streams and the reduction of the sanitary system loads.

The second is water conservation itself, although water is never eliminated by usage, the sources of water may be eliminated by a lowering of water tables and a reduction of supplies from reservoirs, lakes and streams.

Then the third problem is a reduction of haulaway, reducing of landfills.

As to the elimination of these problems the answers, obviously, are to reuse water, never let it leave the plant and prevent its contamination so that it can be reused.

Again, if the cost is too high, reuse and decontamination would not be the solution, We, at Amdec—American Demineralization Co.—sell a service wherein we supply equipment to reduce pollution to zero and decontaminate water so that it can be reused indefinitely. We also do this at such a savings that repayment is

within a 6-month period. We also save on chemicals to further decrease reuse cost. Since we keep our pH at about 6 we reduce sludge to that which is entrapped by our filter cartridges, thus eliminating landfills.

May I cite some examples:

I had written big three auto manufacturers concerning the difficulty of compliance with the regulations. Chrysler permitted me to visit their plant in Belvedere, Ill. At Belvedere, approximately 1,000 gpm of well water is used. The plant to process this water to drain cost $7 million. Using interest, depreciation and operating costs, I have estimated the annual costs to be approximately $2 million. By using a system such as ours we can provide them with a higher purity rinse water and at 2,000 gpm. Further, we can filter their cleaners, phosphate, and chromate solutions at 300,000 gph.

Presently they dump their cleaner every other day but by properly developing a cleaner, the cleaner should last many months. In this type of system no water would go to drain and Chrysler would have the use of unlimited high purity water. Water is used in their painting section and this can be treated so that it too can be used indefinitely or sent to drain monthly. This decontamination should be simple. The cost of such a system would be less than $300,000 per year.

In plating plants we cut water consumption by 98 percent and seldom less than 95 percent. In addition we save their cleaners, their nicel salts, the copper salts, most of the chromate solutions and still give them a spot-free rinse. We do not sell them on pollution control but we sell them on saving money. Their payback is usually from 4 to 6 months.

While in California I visited Silicon Valley. Most of the plants in the computer field could easily reduce water consumption 99 percent and have better rinses.

I also visted a tomato cannery, here 250,000 gpd were used. The BOD to drain was extremely high. Both the water to drain and the BOD could be reduced 98 percent and pay back within 6 months. It must be remembered, in most instances, the problem is not water supply but BOD to drain and this is a great problem.

The sanitary district could not handle any more BOD nor water. East of the mountains in the desert, plants could use 2, million gpd and not even go to drain. Homes, by judicious use of water, could be built in the $30,000 to $40,000 range.

The problem again is twofold, Congress does not know what to do and any two votes will change its mind. In 12 years we have accomplished almost nothing and yet spent untold millions. Since Congress will not grapple with the question, industry as a whole does nothing.

As to enforcement, use the IRS methods. The head of the company must submit a bimonthly affidavit as to the composition of his effluent. Periodic checks should keep him honest, if he is not, a few indictments would be a simple means of compliance enforcement.

Some years ago I read a Government report listing New Orelans as having the highest incidence of cancer. The drinking water comes from the Mississippi. The next highest was Aurora, Ill. Its wells were contamined by the Fox River.

The health of this Nation is in your hands. The previous statement seems trite as you have had many others appear before you who have reiterated such a statement. There are solutions available and good solutions.

As yet I have not heard from Chrysler or General Motors, et cetra and I do not expect to—what is a few million dollars? Top executives are not noted for worrying about the health of the country unless it has a profit attached thereto. Should the price of their water rise some 300 or 400 percent, economy might then sink in.

Let me summarize and suggest:

First, raise the price of industrial water;

Second, charge industrial well users for water taken from wells.

Third, pass a law making plant managers responsible for an affidavit of contents for water going to drain;

Fourth, allow or continue a tax reduction for pollution control equipment;

Fifth, do not spend more money for sanitary districts. If industries reuse water, they would have more capacity at less cost than they can use;

Six, advertise your laws, enforce them, there has been little enforcement in the last 10 years;

Seventh, do not listen to cry babies.

Most important of all, do not allow a dilution, parts per million. Set up a weight. I do not think any pollution should go to drain. We do not know what the next thing that will be to cause cancer, we are developing new chemicals. Let the companies handle this in their plants. They could save money doing this and they have their problems. They know what to do.

Now, if you have any questions I would be happy to answer them.

Mr. ROE. We want to thank you very much for your testimony, Mr. Allegretti.

Do you have any questions, the gentleman from Minnesota?

Mr. STANGELAND. I have no questions.

Mr. ROE. No questions. We thank you very much for your testimony.

The subcommittee will recess until Wednesday next at 10 o'clock.

[Whereupon, at 12:47 p.m., the subcommittee recessed to reconvene at 10 a.m., on Wednesday, November 9, 1983.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

WEDNESDAY, NOVEMBER 9, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:20 a.m., in room 2226, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. The subcommittee will come to order.

We are on a continuation of hearings on the clean water bill.

We want to welcome you all here. Our first panel of witnesses will be the National Wildlife Federation, represented by Mr. Robert Davison; the Environmental Defense Fund, represented by Dr. William Brown, senior scientist and attorney; and the International Association of Fish and Wildlife Agencies, represented by Mr. Wes Hayden.

Will you all come forward and take your place at the table? We will begin.

Is this the National Wildlife testimony? You are going to summarize it, of course.

We want to welcome this very distinguished panel. As you know, we have 2 more days, today and tomorrow, of this week, for testimony. Then we are going to try to conclude next week.

We had some environmental testimony earlier, but we were interested for the environmental organizations to come back again with more refinement, which is the purpose of your being here today.

Having said that, we would like to hear first from Mr. Robert Davison.

The full text of your prepared statements will appear in the record at this point.

[Statements referred to follow:]

NATIONAL WILDLIFE FEDERATION
1412 Sixteenth Street, N.W., Washington, D.C. 20036 202—797-6800

STATEMENT OF THE
NATIONAL WILDLIFE FEDERATION
BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES
OF THE
HOUSE PUBLIC WORKS AND
TRANSPORTATION COMMITTEE
ON
SECTION 404 OF THE
CLEAN WATER ACT
AND
H.R. 3282

November 9, 1983

Submitted by:

Robert P. Davison, Ph.D.
Fisheries and Wildlife Division
National Wildlife Federation

Mr. Chairman and Members of the Subcommittee on Water Resources, I am Dr. Robert P. Davison, Legislative Representative for the National Wildlife Federation's (NWF) Fisheries and Wildlife Division.

NWF is the world's largest private conservation and education organization dedicated to the wise use of this nation's natural resources, especially its waters and wetlands. At our March 1983 Annual Meeting, NWF adopted a resolution calling on Congress to enact legislation that reverses the administrative dismantling of the Section 404 program. That resolution is attached as Appendix I.

I appreciate the opportunity to appear before this Subcommittee and to express our interest in the protection of the nation's rapidly vanishing wetlands. I am here today on behalf of our more than 4 million members and supporters and our 51 affiliated statewide and territorial organizations to voice our support for the Section 404 program and to urge this Subcommittee to adopt the amendments to Section 404 proposed in H.R. 3282, the Water Quality Renewal Act of 1983, introduced by Chairman James Howard.

WETLANDS PROTECTION IS ESSENTIAL TO ACHIEVE THE GOALS OF THE CLEAN WATER ACT

Wetlands contribute significantly to the physical, chemical, and biological integrity of this nation's waters.

Wetlands buffer the effects of high storm run-offs and lower peak flood levels. A study of Wisconsin watersheds concluded that the flood water levels are 80 percent lower in

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basins containing a mixture of lakes and wetlands than in basins with no such areas. Coastal wetlands and those along large lakes can be very effective at dissipating the energy from the wave action created by storms.

Groundwater recharge is an important function of some wetlands. Wetlands in the Pine Barrens of New Jersey have been identified as an important water source that recharges a large underground aquifer.

Water quality maintenance and purification of polluted water are valuable functions of most wetlands. Wetlands are now being used as biological filters to remove nutrients, such as phosphorus and nitrogen, from the effluent of sewage treatment plants. Hundreds of communities in the U.S. are benefiting economically from this practice. The value of this function extends beyond simple waste assimilation to the potential for removal of heavy metals, some toxic chemicals, and other waste products.

The biological integrity of our waters is dependent on wetlands. The plants and associated nutrients in wetlands form the basis of many of our most important food chains. Sixty to 70 percent of the 10 to 12 million ducks produced annually in the lower 48 states of the U.S. breed in the wetlands of the prairie pothole states of Montana, North and South Dakota, Minnesota, and Nebraska. In 1980, 62.7 percent of the 6.7 billion pounds of commercial fish caught by American fishermen was dependent on estuarine areas and their associated wetlands.

SECTION 404 IS AN IMPORTANT COMPONENT IN THIS NATION'S EFFORTS TO PROTECT WETLANDS AND WATER QUALITY

Because this nation's waters are ecologically and hydrologically interrelated, the destruction or degradation of our wetlands will adversely affect the chemical, physical, and biological integrity of all our waters.

Section 404 of the Clean Water protects wetlands by regulating the disposal of dredged or fill material in waters of the U.S. and, therefore, plays an essential role in meeting the goals of the Act: the restoration and maintenance of this nation's waters.

Section 404 does not prohibit development. Instead it allows the merits of proposed wetlands alterations to be reviewed and allows the U.S. Army Corps of Engineers (Corps) to require alternatives or mitigation to minimize damage to the aquatic environment.

Section 404 is credited with reducing wetlands loss due to filling and other regulated activities by about one-half (IWR Report, p. 103). In view of the considerable value of wetlands, as discussed above, Section 404 has substantially benefited the Nation. The Corps Institute for Water Resources (IWR) recently concluded that while there are costs associated with processing Section 404 permits, the reduction in wetlands losses attributable to Section 404 is an important reason why the permit program provides net benefits to the nation:

> "The current baseline operations of the Corps of Engineers regulatory functions program results in a net positive benefit to the Nation ... Most of the regulatory program benefits accrue due to avoiding costly water quality contamination and safety risks, and excessive wetland loss." (Emphasis added.) (IWR Report, pp. 89-93.)

Section 404 also has benefited developers. Project modifications developed during the processing of permit applications have reduced construction costs for 30 to 50 percent of the proposed projects and resulted in a 15 percent savings in total projects costs. In 1980 these savings were estimated to be as high as $271 million (Appendix II).

CERTAIN ADMINISTRATIVE AND REGULATORY REVISIONS AND PROPOSED REVISIONS TO SECTION 404 DIMINISH PROTECTION OF WETLANDS AND WATER QUALITY

Over the past year and a half, the Department of the Army (DOA) has substantially revised the Section 404 program and further changes have been proposed (48 Fed. Reg. 21466-21476). A number of these revisions and proposed revisions particularly concern us because they seriously weaken the ability of Section 404 to protect this Nation's waters, especially its wetlands.

On May 7, 1982, the Presidential Task Force on Regulatory Relief announced administrative reforms to the Section 404 program which significantly reduce the ability of the Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS), and National Marine Fisheries Service (NMFS) to review projects and recommend mitigation and project modifications. These reforms include:

1. Vesting the Assistant Secretary of the Army for Civil Works (ASA-CW) with the authority to veto requests by EPA, FWS, or NMFS for referral of objectional permit applications to a higher level of authority in DOA for review;

2. Eliminating the opportunity for Corps Divisions to review permit decisions.

3. Limiting the issues upon which further permit review can be requested to exclude many cases where discharge activities have serious adverse impacts on aquatic resources.

4. Reducing the public comment period on permit applications; and

5. Greatly reducing the time available to EPA, FWS, and NMFS to review, comment on and object to controversial permit applications.

These revisions have been implemented through new Memoranda of Agreement and Corps regulatory guidance memoranda.

On July 22, 1982, Corps issued revised Section 404 permit program regulations. While these new rules contain many changes, two of these changes merit particular attention. They are:

1. The expanded nationwide permit program (33 C.F.R. Part 33) that diminishes the protection afforded this nation's waters and wetlands; and

2. The restrictions placed on the authority of the District Engineer to require mitigation.

Finally on May 12, 1983, Corps issued proposed rules that would further amend the 404 permit process to reduce uncertainty and delay. But rather than reducing an alleged regulatory burden, many of the changes proposed will weaken the wetland protection features of the Section 404 program and severely undercut public participation. In particular, the proposed rules would:

1. Through the issuance of 2 additional nationwide permits, exempt federally undertaken, funded or authorized discharges--e.g. dams, highways, channelization projects--and certain private discharges from the individual permit regulations of Section 404.
2. Define terms within the definition of wetlands so that approximately two thirds of the wetlands in the coterminous states would be excluded.
3. Strip the states of their ultimate authority to prevent the issuance of general permits that adversely affect the quality of waters within the state or that are inconsistent with state coastal zone management plans.
4. Discard the requirement that the opinions of state and federal natural resource agencies be given "great weight" in permit decisions.

The Administration states that the above administrative and regulatory changes will greatly streamline the Section 404 program without sacrificing environmental protection. We disagree. These changes have little to do with delay. Instead

they have greatly diminished Section 404's ability to protect our water resources.

And we are not alone in our opposition to Army's May 12 proposal. Thirty-nine agencies in 33 states and EPA submitted comments to the Corps that took strong exception to much of Army's "regulatory reform" effort. A sampling of those comments on the six most egregious Army proposals is attached (Appendix III).

CLAIMS THAT SECTION 404 AND CORPS REGULATIONS PROHIBIT DEVELOPMENT OR CAUSE EXCESSIVE DELAY AND COSTS ARE GREATLY OVERSTATED.

1. Of the approximately 76,400 Section 10 and 404 permit applications filed from 1977 through 1980, only 969--less than 1.3 percent--were denied (Appendix IV). Thus, permit denials are not stopping development. Permit denial, however, is essential to protect valuable wetlands and water resources from unwise projects. For example, the Corps refused to issue a Section 404 permit for the Davis Power Project that would have flooded the Canaan Valley in West Virginia. Canaan Valley, designated a "national landmark" in 1975, contains more than 40 percent of the state's wetlands and is the largest remaining shrub swamp on the East Coast.

2. From 1977 through 1981, 70 percent of the permit applications submitted to the Corps took, on the average, less than 75 days to process. (Section 404 requires decisions to the "maximum extent practicable" within 105 days--15 days for issuance of a public notice and an additional 90 days for public and interagency review and comment.)

3. During that same period, the average processing time for all permit applications, except those requiring preparation of an EIS, was 131 days.

4. Only 47 EIS's were prepared for permits in FY 1978, 1979, and 1980--or less than one EIS for every 1,000 permit applications. On average, the 47 actions took 815 days but these processing time were necessary for compliance with NEPA.

We do not claim that isolated examples of unwarranted delay cannot be found. But such examples, as the above information demonstrates, are not representative of the program as a whole.

Furthermore, lengthy processing times are frequently warranted. EPA, FWS or NMFS express their concern on approximately 30% of the permit applications they review because the contemplated project will have a serious impact on the nation's water resources. In these controversial situations, longer processing times (on average, 256 days) are typical. But the major resource savings of the program are realized through mitigation measures and project modifications recommended by EPA, FWS or NMFS. And the benefits attributable to these savings, particularly wetland conservation, outweigh the costs of extra processing time. (IWR Report, pp. 89-93.)

THE PREVIOUS INTERAGENCY REVIEW PROCESS DID NOT CAUSE UNNECESSARY DELAY: INSTEAD IT SAVED VALUABLE RESOURCES

Under the Memoranda of Agreement (MOA) that were in effect between March, 1980 and July, 1982, each of the federal

resource agencies had the authority to require additional review of a permit decision when it disagreed with a Corps District decision in a 404 permit. Agencies had the authority to elevate permits through as many as four levels of the Corps' hierarchy depending on the relative importance of the resource issues. Permits involving an EIS (Class I) could be elevated through four levels of review: the Division Engineer, the Chief of Engineers, the Assistant Secretary of the Army for Civil Works (ASA-CW), and finally, the Secretary of the Army. Permit decisions with the potential of making precedent setting policy or with substantial environmental impacts (Class II) could be reviewed by up to three levels, stopping with the ASA-CW. All other permits (Class III) could be referred only the the Division Engineers and Chief of Engineers.

The Administration faults this interagency review process under Section 404(q) for causing delay. The reviewing agencies were accused of taking too long to review and comment on permit applications and of abusing their authority to refer permits up the Army chain of command. Those claims are unfounded.

The review agencies complied remarkably well with the time constraints of Section 404. For example, the Southeast Region of National Marine Fisheries Service (NMFS) completed review of

97% of its permit applications within 30 days[1/] The Fish and Wildlife Service (FWS), between July 1 and December 31, 1980, averaged 22.5 days in reviewing 6,442 permit applications.[2/] And, between October 1, 1979 and March 31, 1980, the Environmental Protection Agency (EPA) reviewed 13,824 permit applications in an average of 24.9 days.[3/]

Moreover, the review agencies are not abusing their authority to elevate permit decisions. Very few permits were ever elevated, and of those that were, virtually all were reconciled at the Division Level:

Year	Total Permits	Referrals to the Division Level	Percent
1977	16,500	65	0.39
1978	16,405	45	0.27
1979	16,015	43	0.27
1980	14,267	45	0.32

1/Statistics on the Importance of NMFS' Habitat Protection Program Involvement in the Crops of Engineers' Section 404 Regulatory Program under the Clean Water Act and Habitats of Importance to Living Marine Resources, NMFS, Habitat Protection Branch, 1982, "NMFS Report."

2/Draft Fish and Wildlife Service Section 10/404 Permit Program Summary of Major Statistics July 1-December 31, 1980, "FWS Summary."

3/Section 404 Permit Program: Final Results of Regional Office Questionnair, U.S. Environmental Protection Agency Office of Federal Activities (A-104) 404 Program Branch, "EPA Report."

Of the 18,000 permit applictions NMFS reviewed in 1980 and 1981, it requested elevation on only 17. Three of these were elevated to Washington.[4/] From 1974 to 1980 NMFS reviewed 87,307 permit applications and only elevated 20 to Washington. Of the 6,442 permit applications FWS reviewed from July 1 to December 31, 1980, only 11 were elevated. In 1980, EPA elevated only 11 permits, 5 of which went to Washington.

Furthermore, the reviewing agencies have shown a strong willingness to further improve the efficiency of the interagency review process. For example, at the encouragement of NMFS, FWS, and EPA, the Norfolk District of the Corps has implemented joint processing of applications. Each month, all the involved agencies meet in Norfolk and review pending applications. Federal agency coordination is completed for 90-95 percent of these during the monthly meeting. The joint processing meetings have reduced by 50 percent the amount of time necessary for permit processing on non-controversial permits and 20 to 30% for controversial permits.[5/]

SECRETARIAL VETO OF PERMIT REFERRALS IS UNWISE

We believe the Administration erred by vesting veto authority in the ASA-CW over permit referral requests.

4/Memorandum from H. Stephen Halloway, Associate General Counsel, Dept. Commerce to William Gianelli; Nov. 16, 1981.

5/The Coordinator, Regulatory Functions Information Exchange Bulletin, U.S. Army Institute for Water Resources, July 1978.)

Interagency review of permit applications is essential to the wise use and allocation of our resources. We believe that such review is the primary reason Section 404 reduces by one-half the wetlands lost each year from disposal of dredged or fill material. Congress intended that agencies with expertise review permit applications so that natural resources receive equal consideration with the economic purposes of a project. The extensive review given a permit upon referral frequently results in resource savings. For example, between 1978 and 1980, NMFS recommendations saved approximately 16,000 acres per year in the Southeast Region alone. The ASA-CW veto has thwarted Congress' intent and crippled the review process.

Since July, 1982, under the new MOA, FWS has elevated 20 permits to the ASA-CW for actions that would destroy between 6,428 and 6,664 acres of wetlands, predominantly bottomland hardwood swamps in the Lower Mississippi River Valley. Of the permits pending on bottomland hardwood conversion, Assistant Interior Secretary G. Ray Arnett wrote ASA-CW William Giannelli (December 10, 1982):

> The Bottomland Hardwoods in this country decreased from 229,000 acres in 1957 to 119,000 acres in 1977. It is only reasonable to assume that less than 100,000 acres remain today. That is all that remains of some of the best Bottomland Hardwood acreage in the country. The decision to issue all five of these permits rests totally with the Corps, thus even by your definition of cumulative effects these areas qualify for consideration. This, therefore, is your opportunity to save a large and significant tract of an extremely important, but diminishing national resources--and I urge you to do so.

Assistant Secretary Giannelli elected not to save these resources and issued all five permits without modification. In fact, of the 15 elevated permits, five requests by FWS for further review were rejected outright by the ASA-CW. Six permits were reviewed and subsequently issued without a single modification. Four accepted elevations are still under review. EPA has elevated only one permit under the new MOA; NMFS none.

LONGER PUBLIC COMMENT AND INTERAGENCY REVIEW PERIODS SHOULD BE RE-INSTATED

On June 8, 1982, Corps Headquarters directed the District Engineers to shorten the comment period on public notices. The New Orleans District obliged by reducing comment periods from 30 to 15 and in some cases 10 days. Besides affecting the ability of the public to participate in the permit process, shorter public comment periods adversely affect the reviewing agencies ability to review applications, determine appropriate mitigation measures, and decide whether they will object to a permit. In view of the limited resources of EPA, FWS, and NMFS and the large number of applications they must review, these reductions in the review period will diminish their ability to protect our water and wetland resources.

H.R. 3282 WOULD MAKE INTERAGENCY REVIEW OF PERMITS ONCE AGAIN A MEANINGFUL AND EQUITABLE PROCESS

As discussed above, the restrictions placed on interagency review in May 1982 are not warranted and have reduced environmental protection. These problems with the new,

'stream-lined' review process are perhaps best illustrated by Assistant Interior Secretary Arnett's comments in a January 7, 1983, letter to Assistant Army Secretary Giannelli:

> In view of your track record in not sustaining our elevation proposals, I elected not to elevate this action because by Alaska standards the direct project impact is small.
>
> Our view of the matter, however, is that the permit should not be issued because it will serve as an inducement for further development of an area that has significant wildlife resources. Second, there are alternate sites available. Third, the project is not water-dependent nor water-related. And fourth, we do not believe the public interest is served by after-the-fact permitting of an unauthorized fill, nor by compensating for a financial loss the applicant sustained at another location. For your convenience, I have enclosed a summary sheet regarding the proposed action.
>
> Bill, I agreed to the 1982 MOA in hopes it would result in timely but equitable decisions. It is just not reasonable to expend extensive manpower to meet the current permit review schedule to repeatedly have our concerns fall on deaf ears. I have not given up on the MOA, but suggest that expediting the permit process cannot and should not be at the expense of natural resource protection.

And again in a June 27, 1983 letter:

> Your comment regarding being "sensitive to quality of our decisions" is most perplexing in 'ight of the fact that you have issued permits for all fifteen of the applications elevated under the 1982 Memorandum of Agreement. To date, the issuance of permits on elevated issues has resulted in a direct loss of nearly 6,700 acres of wetlands.
>
> I believe the current MOA is limited to process implementation and largely ignores resource issues.

> As stated in the first subsection of Congress' Declaration of Goals and Policy, the Clean Water Act has as a "national goal wherever attainable" to provide for the "protection and propagation of fish, shellfish, and wildlife..." As now administered, the Corps' regulatory program causes me to have serious concerns about whether or not these clearly stated objectives are being accomplished.

Section 10(b) of H.R. 3282 seeks to make interagency review of permits once again a meaningful and equitable process. Section 404(q) would be amended to adopt the MOA procedures in effect between March 1980 and July 1982, but with shorter time frames and three levels of review rather than five. The amendment would once again allow Corps Division review of permit decisions, requests for further permit review based on resource considerations and sufficient time for federal resource agencies to evaluate permits having significant environmental effects. But most importantly H.R. 3282 removes the authority for the ASA-CW to veto requests by EPA, FWS, or NMFS for referral of objectional permit applications above the District Engineer for further review. H.R. 3282 would correct the present circumstances under the May 1982 MOA, which argue against EPA, FWS, or NMFS diverting scarce resources to prepare a permit referral because there is no certainty that the ASA-CW will agree to review the District Engineer's decision.

The net effect of the changes incorporated in the May 1982 MOA has been an increasing tendency on the part of Corps Districts to give less weight and sometimes to ignore EPA, FWS, and NMFS concerns. H.R. 3282 would restore the role Congress

intended for the federal resource agencies under the Clean Water Act and Fish and Wildlife Coordination Act, and we urge this Subcommittee to support Section 10(b) of H.R. 3282.

THERE ARE ADDITIONAL WAYS TO STREAMLINE PERMIT PROCESSING THAT WOULD ASSURE ADEQUATE PROTECTION OF RESOURCES

Once the interagency review process in H.R. 3282 has been established to provide adequate environmental protection, we suggest that processing times could be reduced without jeopardizing our wetland resources by:

1. Establishing procedures for pre-application consultation between the applicant, Corps and the reviewing agencies for categories of permits that are likely to be controversial;

2. Encouraging and expanding the use of joint state/federal permit application processing, including the issuance of joint public notices and the conduct of joint public hearings;

3. Encouraging and expanding the use of interagency joint processing meetings in order to weed out controversial applications, and approve non-controversial applications; and

4. Requiring that District Engineers make decisions on permit applications and appropriate mitigation rather than asking the applicant to negotiate mitigation conditions with the reviewing agencies. Such negotiations are time consuming and could be avoided if the District Engineers became decisionmakers rather than umpires. As decisionmakers the District Engineers could protect our resources by giving great weight to the recommendations of the reviewing agencies.

ADMINISTRATIVE WEAKENING OF THE 404(b) ENVIRONMENTAL GUIDELINES MUST BE PREVENTED

In addition to substantial revision of the MOA governing interagency review of 404 permits, another of the directives of the President's Task Force on Regulatory Relief stated that "The EPA's Section 404(b)(1) guidelines will be shortened, simplified, and made consistent with the reform measures described herein." On August 23, 1982, EPA complied with this directive by issuing an Advance Notice of Proposed Rulemaking concerning revisions to the 404(b)(1) guidelines. At that time EPA appeared to have pre-judged the need for substantial revisions to the guidelines. The notice stated that "comments are needed to identify parts of the guidelines that are ambiguous, difficult to apply, or that may result in excessive delays, regulatory burdens or costs." (Emphasis added).

The change in Administration at EPA has made it more uncertain whether the 404(b) guidelines will be revised and, if they are, whether they will be weakened. But Assistant Secretary Gianelli has pressed hard for substantial reductions in the environmental protection provided by the guidelines:

- On November 30, 1982, Assistant Secretary Gianelli sent EPA a marked up version of the guidelines which identifies portions that he felt could and should be omitted. Of the many recommended deletions, the most egregious was the proposed elimination of the current presumption against discharges of dredged or fill material into wetlands. (Letter attached in Appendix V.)

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- On December 17, 1982, Assistant Secretary Gianelli wrote the Vice President to ask for his help in pressuring EPA to draft revisions to the 404(b) guidelines. (Letter attached in Appendix V.)

- On March 23, 1983, Assistant Secretary Gianelli again wrote the Vice President to ask him to intercede in a dispute between Army and EPA over whether the guidelines should be regulatory criteria or relegated to an advisory status. Army recommended that the Administration adopt the position that the guidelines are advisory in nature. (Letter attached in Appendix V.) EPA Administrator William Ruckelshaus has maintained that the guidelines should be binding criteria and that the dispute within the Administration has been resolved in favor of his position.

- Nevertheless, on October 5, 1983, Assistant Secretary Gianelli once again wrote the Vice President to advise him of the status of the regulatory reform effort and urge full implementation of the May 7, 1982 charter; in particular, to complete the directive of "shortening and simplifying" the 404(b) guidelines. (Letter attached in Appendix V.)

Thus, the threat that EPA's environmental 404(b) guidelines will be substantially revised and weakened remains very real. Of greatest concern is that revisions will, as Assistant Secretary Gianelli has recommended, eliminate the presumption against wetlands destruction from disposal of dredged or fill material.

Section 10(a) of H.R. 3282 would affirm fundamental standards for environmental protection contained in the EPA guidelines issued under Section 404(b) on December 24, 1980 (45 Fed. Reg. 85335 et seq.; 40 C.F.R. Par 230). The fundamental precept of these guidelines is that "dredged or fill material should not be discharged into the aquatic ecosystem, unless it

can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern." 40 C.F.R. Section 230.1(c).

Section 10(a) of H.R. 3282 also would place the operational heart of the EPA guidelines in the statute: the requirement that discharge be prohibited "if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." 40 C.F.R. Section 230.10(a). This requirement is made particularly effective by the so-called "water dependency" test. Simply put, that test prohibits the unnecessary destruction or alteration of wetlands where practicable alternative sites are available or where the project need not be located in a wetland to meet its objectives (i.e., is not 'water dependent'). For example, the construction of a marina is water dependent, whereas the construction of a shopping mall is not.

The immense value of wetlands and the stunning rate at which these resources are being destroyed certainly justify the presumption against development in wetlands. Moreover, the requirements of the EPA guidelines contained in H.R. 3282 have proven effective and flexible in protecting wetlands and other

aquatic ecosystems from degradation or destruction caused by discharges of dredged or fill material. The denial of the Section 404 permit for Marco Island (by Deltona) graphically demonstrates the importance of the presumption against wetlands development. But the presumption also has served to stem the tide of small projects that have a significant cumulative impact on the nation's wetlands and for which upland alternatives sites are available.

There is also a good policy reason for ensuring that the presumption is maintained. Private investors, aware of the presumption and the difficulty it would cause in securing a Section 404 permit for certain projects that are not water dependent, such as housing, have sought alternative sites. Thus, the present 404(b) guidelines have influenced expectations. Changes in the guidelines, such as those recommended by Assistant Secretary Gianelli, would alter those expectations and could undo the long-term protection of wetlands. Furthermore, revisions to the presumption would only create further confusion and chaos in an already complex area at a time when consistency is finally being achieved. Section 10(a) of H.R. 3282 would prevent changes and revisions in the presumption and would ensure continued protection for wetlands and predictability for developers. We urge this Subcommittee to adopt its provisions.

H.R. 1570 WOULD ADVERSELY IMPACT THE INTEGRITY OF ALL THE NATION'S WATERS

We urge this Subcommittee to strongly oppose the provisions of H.R. 1570. H.R. 1570 would remove from federal protection under Section 404 the vast majority of the nation's wetlands, perhaps 126 million of the 148 million acres currently covered, and thousands of miles of river and lake shoreline.

H.R. 1570 cannot be justified. As shown earlier, Section 404 is not stopping or significantly delaying development. Moreover, even if the Corps' program could be shown to be causing significant delay, the restrictive definition of 'navigable waters' proposed by H.R. 1570 would not solve the problem. Only 17 percent of all permit applications received by the Corps are for activities in non-navigable waters. And even if unreasonable delay could be demonstrated in this small percentage of permit application, legislation is not necessary to correct the problem. The Section 404 program has adequate tools for administrative and regulatory efficiency, and those tools are being employed and in some cases overutilized by the agencies. I suggested some approaches, such as joint processing of permits, earlier in my testimony.

H.R. 1570 also incorrectly asserts that the Section 404 permit program has not benefited the nation. The Corps IWR identified the reduction of wetlands losses attributable to Section 404 as an important reason why the Corps permit program provides net benefits to the nation.

More detailed description of the adverse impacts that would result from approval of H.R. 1570's provisions is attached as Appendix V.

CONCLUSION

Our wetlands are an immensely valuable economic and environmental resource. Nevertheless, more than 50% of our original wetlands are gone, and we continue to destroy our wetlands at the alarming rate of 458,000 acres per year. Section 404 is the only effective federal regulatory program that protects wetlands. Each year Section 404 cuts in half the destruction of wetlands from disposal of dredged or fill material. While Section 404 protects wetlands, it has not stopped development. Most of the wetland savings are realized through mitigation and project modifications.

H.R. 1570 would exempt from regulation under Section 404 approximately 125 million acres of wetlands. Left unprotected, these resources will be destroyed.

Two of the July 22, 1982 Corps nationwide permits leave most of our inland wetlands and water relatively unprotected. Even where individual permits are required, the interagency agreements negotiated in spring and summer 1982 have greatly reduced the ability of the federal resource agencies to obtain mitigation and project modifications necessary to prevent

destruction and degradation of our waters and wetlands. Again, mitigation and permit conditioning are responsible for most of the resource savings accomplished under Section 404.

Continued pressure on EPA to shorten and simplify its 404(b) guidelines poses a serious threat to the current presumption against discharges of dredged or fill material into wetlands.

H.R. 3282 would once again make interagency review equitable and meaningful and would ensure that the current protection for wetlands provided by the 404(b) guidelines would be maintained.

Therefore, we respectfully urge this Subcommittee to support H.R. 3282, to stop H.R. 1570, and to voice its opposition to the recent administrative and regulatory changes and proposed changes to Section 404.

APPENDIX I

National Wildlife Federation
Resolution on Section 404

NATIONAL WILDLIFE FEDERATION

1412 Sixteenth Street, N.W., Washington, D.C. 20036 202—797-6800

Resolution No. 18

DENOUNCES THE DISMANTLING OF THE SECTION 404 PERMIT PROGRAM

WHEREAS, Section 404 of the Clean Water Act has been an effective federal program for reducing wetland destruction and mitigating unavoidable wetland losses; and

WHEREAS, the program has saved an estimated 300,000 acres of wetlands each year since it was implemented; and

WHEREAS, recent administrative revisions to Section 404, including the granting of 26 nationwide permits that eliminate federal jurisdiction over most of the nation's wetlands, have weakened the permit program; and

WHEREAS, administrative proposals to change the definition of the word "wetlands" will harm the effectiveness of the Section 404 program in its goal to maintain the physical, biological, and chemical integrity of the nation's waters, and will reduce the program's ability to protect this nation's valuable wetland resources;

NOW, THEREFORE, BE IT RESOLVED that the National Wildlife Federation in annual meeting assembled March 17-20, 1983, in Albuquerque, New Mexico, hereby denounces the dismantling of the Section 404 permit program as both unlawful and contrary to the goals and objectives of the Clean Water Act, and counter to the public interest in wetland protection; and

BE IT FURTHER RESOLVED that the National Wildlife Federation asks Congress to enact legislation that reverses these administrative revisions and strengthens the provisions of Section 404 of the Clean Water Act.

APPENDIX II

Savings to Permit Applicants
From Section 404

ESTIMATED ANNUAL SAVINGS TO PERMIT APPLICANTS RESULTING FROM PROJECT REVIEW MODIFICATIONS

	Number of Permits FY 80	Total Financial Cost ($millions)	Benefit Coefficient a[1]	Benefit Coefficient b[2]	Amortization Factor[3]	Annual Benefits ($millions) a	Annual Benefits ($millions) b
Commercial	6,320	150,810	.00563	.01125	.1107	98.9	197.8
Individual	9,821	2,882	.00563	.01125	.1107	1.8	3.6
Government	2,798	33,927	.00563	.01125	.1107	34.8	69.7
TOTAL	18,939	217,619	.00563	.01125	.1107	135.5	271.0

[1] Assumes site development costs represent 25% of total project cost; 15% of projects are benefited; benefit represents a savings of 15% of site development costs. (.25 X .15 X .15 = .00563)

[2] Same assumptions as in 1 above, except assumes 30% of projects are benefited. (.25 X .30 X .15 = .01125).

[3] Assume projects' social value is amortized at 10% for 25 years.

SOURCE. Impact Analysis of the Corps Regulatory Program (DRAFT) Prepared by the Institute for Water Resources.

APPENDIX III

State and EPA Comments on the
May 12, 1983 Proposed Section 404 Regulations

NATIONAL WILDLIFE FEDERATION

1412 Sixteenth Street, N.W., Washington, D.C. 20036 202—797-6800

WIDESPREAD STATE REJECTION OF THE PROPOSED RULES

NORTH DAKOTA:

We particularly reject your facade of regulatory relief. Plain and simple, what you propose is the removal of necessary environmental safeguards for America's aquatic resources. This is particularly cruel because it comes at a time when the Supreme Court of the United States has declared our wetlands "a national treasure of nearly the highest magnitude." If you are so intent on regulatory reform, we suggest you modify your regulations to increase protection to our nation's aquatic resources as Congress clearly intended. (Dale L. Henegar, Commissioner, North Dakota Game and Fish Department)

INDIANA:

It seems grossly inconsistent that the administration in Washington is strongly advocating wetland preservation, while the U.S. Army Corps of Engineers is attempting to abolish one of the most effective methods of wetlands protection ... The Assistant Secretary's proposal would "hamstring" the major protective measures intended to be utilized for the best public interest. (Edward L. Hansen, Director, Indiana Division of Fish and Wildlife)

WISCONSIN:

The proposed regulations would seriously undermine, if not effectively destroy, the Corps of Engineers' regulatory program mandated by the Clean Water Act and the River and Harbor Act of 1899 ... (C.D. Besadny, Wisconsin Department of Natural Resources)

MARYLAND:

Your proposed regulations would undermine the protection of nontidal wetlands and also contribute to the loss of tidal wetlands. As we begin to take strides to improve the Chesapeake Bay, your proposed weakening of wetland protection would result in further deterioration of the Bay system through wetland destruction in Pennsylvania, in Virginia, and in Maryland. (Senate of Maryland)

PENNSYLVANIA:

While we agree that all permit applications should be acted upon in a timely manner, we do not believe that this excuse should be used as a reason for removing or weakening protection from such a vital segment of our natural environment, the waterways and wetlands of the United States. Studies have shown that only a very small percentage of the applications have been held up, and most of these had serious environmentally damaging implications. (Ralph W. Abele, Executive Director, Pennsylvania Fish Commission)

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MASSACHUSETTS:

The Commonwealth of Massachusetts continues to be opposed to the apparent trend, reflected by the COE proposed regulations, toward the weakening and reduction of protection for the nation's wetlands. Massachusetts believes that the changes proposed by the newest revisions to the Corps regulations will accelerate the loss of wetlands not only in Massachusetts but nationwide. Study after study has shown that there is a clear relationship between the loss of wetlands and several environmental impacts including: an increase in groundwater contamination, increased property damage, decreases in migratory waterfowl populations, and decreases in commercial fisheries. (Michael S. Dukakis, Governor, Commonwealth of Massachusetts)

WISCONSIN:

Rather than proposing amendments to the rules that would provide project applicants with a sense of regulatory uniformity, predictability, efficiency, and equal treatment consistent with the substantive provisions of the law, the Corps has chosen to erode the substance of the law itself in the name of "regulatory relief." Yet, by making changes in the rules of the game midstream, and by proposing new definitions that require frequent and complicated cross-referencing within the code, not even the ostensible goal of regulatory relief and uniformly fair decisionmaking is achieved. Only damage to achievement of CWA objectives is left in their wake. (Thomas J. Dawson, Public Intervenor, Wisconsin Department of Justice)

MOST INLAND WETLANDS REMAIN UNPROTECTED BY AMENDED NATIONWIDE PERMITS

Despite a pending suit brought by the National Wildlife Federation, the Environmental Defense Fund, the National Audubon Society, and thirteen other conservation groups, the International Association of Fish and Wildlife Agencies and the American Fisheries Society challenging the legality of water classification as a basis for nationwide permitting, the Corps' Proposed Rule (Section 330.4(a)) continues to authorize nationwide permits for dredged or fill discharge into "isolated lakes and wetlands" and any wetlands and other waters located above "the headwaters of streams."

The July 1982 issuance of these two permits authorized the essentially unregulated development of all isolated inland wetlands. While the current amendments would reinstate a pre-1982 exception requiring individual permits for discharges into lake/wetland areas ten acres or larger in size, they also introduce the additional requirement of at least five acres of open water (Section 330.2). This "five acre open water qualification" severely restricts the wetland/lake areas subject to project review on an individual permitting basis, leaving a critical majority of our inland waters and wetlands vulnerable to the destructive impacts of unregulated development.

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Environmental Protection Agency:
Even with inclusion of the May 12th 10 acre natural lake limitation, this section will generally permit discharges in very large areas of wetlands in New England (perhaps as much as 50% of freshwater wetlands), the Pocono region of Pennsylvania (as much as 60% of wetlands), and the prairie pothole region of the Dakota's (as much as 70%), among others. These are all environmentally important regions. Thus, in these areas, the discharges authorized by the permit could have significant adverse individual or cumulative effects ... large fill projects that have significant adverse impacts on water quality, flood storage capacities, and the aquatic ecosystem may be authorized. In our view, most truly minor activities in isolated waters or in waters above the headwaters are (or could be) covered under other general permits. Therefore, the primary effect of these geographic permits may be to authorize precisely the type of projects with which we are concerned... The prior regulation contained no criteria for ratio of open waters to wetlands. The logic of imposing this ratio does not appear scientifically supportable. For example, under the proposal a 5 acre lake with 5 acres of adjacent wetland would come under individual permit review, while a 3 acre lake with 25 (or 250) acres of adjacent wetlands would be excluded from individual permit review. The latter area could, of course, be significantly more valuable than the former.

Iowa Conservation Commission:
The total of wetlands and small lake losses to unregulated dredging or filling would be enormous on a national scale. This loophole alone significantly reduces the Corps' responsibility to carry out the intent of 404.

Illinois Department of Conservation:
In our opinion, the open water requirement will make many large and significant wetland areas subject to filling without benefit of individual permits. Additionally, it will create an entirely new area of confusion in determining Corps jurisdiction

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UNLAWFUL NATIONWIDE PERMITS PROPOSED

The Clean Water Act (CWA) restricts the use of nationwide general permits to categories of activities that are similar in nature, cause only "minimal individual or cumulative adverse environmental effects" and have been determined by the Army Corps of Engineers (Corps) to meet the environmental standards outlined in the Section 404(b)(1) Guidelines of the Environmental Protection Agency (EPA). These restrictions met, nationwide general permit activities are exempt from Corps project-by-project review, public notice or comment and interagency oversight performed under the individual permit process.

Two new permits (26 & 27) in the Proposed Rule (Section 330.5) fail to meet the nationwide permit criteria. Permit (26) exempts from individual permit requirements all dredged or fill discharges into U.S. waters by federal projects or projects receiving federal permits, licenses, or funding including highways, military installations, levees, canals, irrigation projects, housing developments, hydroelectric dams, sewage treatment plants and systems, port expansion and power plants. Permit (27) exempts from individual permit requirements filling and other activities associated with construction of facilities, public or private, adjacent to Corps' civil works projects which are economically compatible with the Corps project. Under the auspices of Permit (27), activities as diverse as agriculture, industry and commercial development could conceivably fall under one nationwide permit if planned along a Corps-channelized river.

The permits fail to meet the criteria for issuance of nationwide permits. They authorize dissimilar activities whose potential to cause adverse environmental effects can only be adequately measured against EPA standards on an individual permitting basis. Permit (26) does require federal agency assurance of 'no significant environmental impact'. However, this constitutes an illegal transfer of CWA Corps- and EPA-vested authority to other federal agencies whose oversight of their own development proposals is clearly divisive to uniform Section 404 decision-making and environmental protection. While instructing the Corps to conduct a case-by-case analysis, Permit (27) does not even explicitly require compliance with EPA Guidelines.

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Environmental Protection Agency:
The two new permits proposed on May 12, numbers 26 and 27, illustrate a regulatory approach of concern to EPA that recurs throughout these proposed rules: an apparent willingness to forego environmental review responsibilities under the Clean Water Act for reasons of administrative expediency, and to delegate to local, state, and other federal agencies the Corps' and EPA's Section 404 responsibilities. We are opposed to nationwide permits 26 and 27 and recommend that they be dropped for the following reasons:

Permit (26) - This nationwide permit is of particular concern. It would authorize any type or size of project no matter how significant, so long as the proponent federal agency and the Corps of Engineers, with no notice to or consultation with, the public and other affected agencies, determine that it conforms with 404(b)(1). We no not believe that an authorization of this magnitude meets the limitations imposed upon general permits under Section 404(e) of the Clean Water Act. It would also have the effect of abrogating the authority of EPA to review these projects for 404(b)(1) compliance and possible use of our 404(c) authority. It would prevent or inhibit the use of EPA's expertise in environmental matters relating to permitted projects.

Permit (27) - This permit raises similar concerns. It would authorize an unlimited range of projects with only an internal 404 "analysis" by the Corps (not even an internal finding of compliance). For example, we could foresee this permit authorizing a major marina or industrial facility next to a dredged federal channel without adequate federal, state, or public review. A project which is merely at the conceptual stages and may be unsound on its own merits should not be allowed to proceed merely because it is adjacent to previously authorized work. This permit has the strong potential to authorize activities that are significant, not minimal, in nature. ... In addition, the lack of consultation with EPA in determining 404(b)(1) compliance is unacceptable. It does not allow EPA sufficient opportunity to consider the use of Section 404(c). EPA strongly opposes this permit, as we believe we must have an opportunity to review, for Section 404(b)(1) compliance and 404(c) considerations, detailed project plans for specific 404 related actions.

Illinois Department of Conservation:
In our opinion the proposed nationwide permits may authorize a range of dissimilar activities with uncertain cumulative impacts. Since the states and general public receive no notification of individual actions permitted under the nationwide system, they will also remove the state and individual rights to comment on matters of possible concern. We recommend that both nationwide permits be deleted from the proposed regulations.

Pennsylvania Fish Commission:
How can a permit for "specific activities" cover "Structures, work, and discharges of dredged or fill material" regardless of whether it is done by a federal agency or anyone else? The phrase of "Structures, work, and discharges of dredged or fill materials" is about as non-specific as one can get ... There are federal agencies or departments who do not have personnel with the training or expertise to adequately determine if the structure, work, or discharge will cause significant degradation to the waters of the United States.

New Jersey Department of Environmental Protection:
Both of these proposed nationwide permits would create the possibility of Corps authorization of projects which are inconsistent with New Jersey's Coastal Management Program since Program policies address a broader range of concerns than do 404(b)(1) guidelines. These proposed permits could be applied to projects having major adverse environmental impacts, without public participation. They are not consistent with Federal Law since they could apply to activities which are not "Similar in nature" or cause "only minimal adverse environmental impacts", as required by the Clean Water Act (Section 404(e)(1)).

Iowa Conservation Commission:
Permit (27) would allow any projects adjacent to a Corps civil works project to proceed without individual permit review. The losses to adjacent wetlands, many of which are of seasonal importance to migratory birds, would be enormous.

Missouri Department of Natural Resources:
(26) We object to the issuance of a nationwide permit for projects which are undertaken, funded, or authorized by another federal agency. These activities could include highway projects, including bridges, dams, hydropower projects, channelizations as well as many other projects. Section 404(e) of the Clean Water Act specifies that a general permit may only be issued for an activity or category which is "... similar

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which is directly counter to the stated purpose of these regulatory reforms. For example, the extent of wetland vegetation around the margins of a lake may vary from year to year because of such things as natural growth, ice conditions during the previous winter, and cutting by adjacent homeowners. Thus, the acreage of open water--and the level of Corps jurisdiction--may have to be recalculated annually in some cases. Further, U.S.G.S. topographic maps, from which many acreage determinations will no doubt be made, do not depict annual changes in the ratio of open water to adjacent wetlands.

in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effects on the environment." This proposed nationwide permit in no way conforms to those requirements. These projects are obviously not similar in nature nor can they be considered to have minimal adverse environmental effects.

(27) We also object to the issuance of this nationwide permit. This permit would include such Corps activities as dams, reservoirs, channelizations, levees, and other projects. Again, these activities are not similar in nature and definitely do not have minimal adverse environmental effects.

INFRINGEMENT ON STATE WATER QUALITY PROTECTION RIGHTS

The CWA protects the ultimate authority of states over their aquatic resources. Individual or general permits can only be issued by the Corps after the state, whose waters will be affected by the discharge, either certifies that the permits comply with state water quality requirements or waives the right to certify. Through a series of regulatory gymnastics, the Proposed Rule unlawfully undercuts states' water quality certification rights under the CWA.

The Proposal (Section 325.2(b)(1)(ii)) omits the current requirement for Corps certification requests to proceed in accordance with existing state procedures. It also shortens the time states have to review requests before waiving the right of certification, from sixty to thirty days. Even if the existing procedural framework were to be maintained, in many cases thirty days is an insufficient length of time for adequate project review.

Of paramount concern is the Proposal's (Section 330.9) illegal authorization of nationwide general permits without state certification or waiver. Even if a state denies certification the nationwide permits will be issued. It will then be the state's responsibility to conduct an individual review of each proposed activity covered under the nationwide permit to determine whether an individual certification should be waived or denied. Thus the responsibility and administrative burden of individual permit review would be unlawfully shifted from the Corps to the states — a tactical maneuver by the Corps to effectively coerce states into certifying nationwide permits.

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West Virginia Department of Natural Resources:
Since our comments were not taken into consideration as evidenced by your further reduction in review/certification time, we demand that permits not be issued until Certification has been granted or waived in writing by this Department. Any permits issued without Certification are not sanctioned by the State of West Virginia and are therefore unauthorized and illegal.

Minnesota Pollution Control Agency:
The proposed rules seem to assert that if the State denies certification, the nationwide permit is still issued for that State. We feel this approach is unlawful, and that it is merely an attempt to shift the administration of a Federal Permit program from the Corps to the States. This would impose a significant resource burden on the State. We feel the Clean Water Act unequivocally provides that no permit may be issued if the State denies certification. Any attempt to shift administrative burden to the State, in what we feel is an unlawful manner, may serve only to inhibit cooperation that has been developed between the State and the Corps.

Missouri Department of Natural Resources:
We strongly object to your proposal to issue nationwide general permits even if the state denies the 401 certification for the nationwide permit ... Missouri does not have the capability to assume this added burden. In our opinion, this proposed rule only circumvents the intent of Section 401 of the Clean Water Act.

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Florida Department of Environmental Regulation:
Given the development pressure in a rapidly growing state such as Florida which results in a heavy workload on our permitting staff and the complexity of many projects we evaluate, 30 days is clearly an unreasonable response time. This change would leave the state no choice but to deny every certification in order to protect its right to clean waters.

Wisconsin Department of Justice:
The Corps does not have authority to issue a general permit for which a state has denied water quality certification, such as the State of Wisconsin. Such permits are legal nullities. The Corps has no business adopting a general permit for which a certification has been denied, and leading applicants in the belief that they can convert a legal nullity into an authorization on an individual basis.

Wisconsin Department of Natural Resources:
This provision ... is an obvious attempt to foist upon the states the administrative and enforcement responsibility for large portions of the waters of the United States. If these proposed provisions are contained in the final rules, we would have no alternative but to initiate litigation to contest this rule.

RESTRICTIVE WETLANDS DEFINITION CUTS PROTECTION

The Proposed Rule (Section 328.3) tampers with the definition of "wetlands" to, in effect, remove many important wetland types from Section 404 jurisdiction. Reduced protection of the wetland resource violates the objective of the CWA by disregarding the critical role many excluded wetlands play in protecting "the physical, chemical, and biological integrity of the nation's waters..."

Corps restriction of Section 404 regulatory scope is expressly prohibited by a 1979 Attorney General's Opinion which reaffirmed EPA authority over Section 404 jurisdictional determinations. While maintaining the current definition of wetlands:

> ...those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

The Proposed Rule introduces, beneath the guise of clarification, meanings for key terms used in the definition.

Particularly objectionable is the proposed qualification of the term "prevalence of vegetation" as "those rooted emergent plants that comprise at least 50% of the dominant species within a plant community." Scientists interpret the phrase "rooted emergent plants" to include only root-bearing herbaceous plants. Excluded from this definition are all wetlands dominated by non-rooted floating aquatic vegetation and moss-lichens such as bogs and many freshwater marshes as well as all tree- and shrub-dominated wetlands including forested bottomlands and cyprus-tupelo swamps. In addition, since ecological dominance is a relative term with a myriad of site-specific interpretations, the "50% dominance" requirement offers confusion rather than clarification to the definition of wetlands.

Using the Fish and Wildlife Service classification scheme, an estimated two-thirds of the 99 million acres of wetlands in the coterminous states are not dominated by emergent vegetation and would thus be removed from Section 404 jurisdiction. In addition, millions of acres of tundra would no longer be considered wetlands because tundra vegetation does not emerge from the water.

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Environmental Protection Agency:
Because the definitions contained in this part determine the scope of jurisdiction of the Section 404 program and were proposed without our concurrence, these changes are inconsistent with the legal opinion of the Attorney General (Civiletti Opinion, September 5, 1979) that EPA has responsibility for determining the scope of jurisdiction for all programs under the Clean Water Act.

Illinois Department of Conservation:
In Illinois this definition would eliminate marshes dominated by submersed or floating non-rooted plants and possibly forested bottomland swamps (which are dominated by woody vegetation not generally defined as "emergent" as well.

Wisconsin Department of Natural Resources:
If adopted as proposed, over two-thirds of Wisconsin wetlands which are presently covered by the Act would be left without coverage under Section 404 of the Clean Water Act.

Missouri Department of Natural Resources:
If the Corps proposes to eliminate jurisdiction over shrub/shrub wetlands and bottomland hardwoods through the use of these definitions, the state strongly objects to the wording changes. The term "emergent" is not defined, but usually refers to herbaceous, non-woody vegetation and would eliminate forested and shrub/shrub wetlands jurisdiction.

Missouri Department of Conservation:
We strongly object to the proposed revisions to the definition of the term "wetlands." In our estimation, these definitions will result in reduced resource protection in Missouri.

MISPLACED BURDEN OF PROOF PROMOTES DISCHARGES

The Proposed Rule (Section 320.4) would change the policy statement regarding Section 404 Public Interest Review procedure from "No permit will be granted unless its issuance is found to be in the public interest." to "A permit will be granted unless its issuance is found to be contrary to the public interest."

Current policy requires the permit applicant--also the direct beneficiary of permit issuance--to demonstrate that a proposed discharge is not environmentally damaging and is in the public interest. The proposed policy change would shift the burden of proof from the applicant to the Corps and other involved government agencies as well as concerned citizens. The Corps would thus shoulder responsibility for proving that a proposed project would be economically unsound or would have adverse environmental impacts as a basis for permit denial. In cases where insufficient information exists, the Corps would no longer be required to deny permits on the basis of "possible" adverse environmental impacts.

The Proposed Rule introduces a bias towards permit approval. It presumes all permit proposals to be both environmentally acceptable and in the best interest of the public unless proven otherwise. This violates the presumption against discharges (1) implicit in the goal of the CWA to "restore and maintain the chemical, physical and biological integrity of the Nation's waters..."; (2) explicit in the fundamental precept of the EPA Guidelines "that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact."' and (3) reflected in current procedure requiring the applicant to prove environmental acceptability.

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Environmental Protection Agency:
This burden of proof issue is of serious concern to EPA. A premise of the Clean Water Act is that discharges which may be "reasonable" from a private point of view may be "unreasonable" from a public water quality perspective and should therefore be regulated. The statute was written to protect important public resources from the effects of incremental decisions being made by individuals. While such decisions often involve relatively small acreages in each instance, they have been the major contributor to our national annual loss of hundreds of thousands of acres of wetlands (approximately 75,000 acres in Louisiana alone). This dramatic rate of loss has resulted not because of a national or state-wide decision that destroying a certain amount of wetlands is environmentally acceptable, but because individuals had been allowed to decide, indirectly, the value of these ecosystems for the nation as a whole. The weakness of that system led to the formulation of the existing 404 regulatory program and, more specifically, to the approach of a presumption against discharge. Logically, this places the burden of proof on the applicant to show that the discharge will not be harmful--this shift in burden of proof is likely to bias the permit issuance decision-making process in a manner that will impair efforts to minimize damage to, or loss of, important environmental resources.

Iowa Conservation Commission:
Virtually every project in waters of the U.S. causes some disruption of public interest factors. The burden of proof as to the desirability of the project should remain with the applicant to demonstrate that the project will not injure the public interest, including the public resources therein mandated for protection under the

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CWA. The Corps' proposal to change their regulations in this regard would not only be inconsistent with the Act and significant judicial decisions, but would cause considerable confusion with the 404 regulatory program. It would become virtually impossible for the Corps to justify denial of a permit for projects damaging "waters of the U.S." or to apply meaningful mitigation measures.

New Jersey Department of Environmental Protection:
DEP opposes this proposal to shift the burden of proof from the applicant to the Corps because it may result in diminished protection for the nation's waters, including wetlands. The proposed language would make it more difficult for the Corps to deny permits since projects are presumed to be in the public interest. Therefore, the Corps will not be required to evaluate the public interest criteria listed below as strictly as it has previously evaluated them.

Missouri Department of Conservation:
We object to the wording, "A permit will be granted unless its issuance is found to be contrary to the public interest." This is contrary to the presumption against discharges into the nation's waters mandated by the Clean Water Act.

FISH AND WILDLIFE VALUES SLIGHTED

The Proposed Rule (Section 320.4(c)) would delete from Section 404 regulatory policy explicit instruction to the Corps to give "great weight" to the views of the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and to pertinent state fish and wildlife agencies in permitting decisions. In compliance with the Fish and Wildlife Coordination Act (FWCA), the Proposed Rule retains instruction to the Corps to consult with these other agencies for guidance in protecting fish and wildlife resources. However, deletion of the 'great weight directive' downplays the importance that the Corps is congressionally mandated by the FWCA to give to both consideration of fish and wildlife values and to the expert views of federal and state officials.

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Illinois Department of Conservation:
We do not agree that all references to "great weight" should be deleted from the Corps regulatory program. In our opinion, the original references were intended to stress the importance of specific factors in the public interest review including concern for the protection of wetlands and coordination with state and federal fish and wildlife agencies. We believe these factors are still of paramount importance and should be identified as such by the "great weight" designation. However, we would not be opposed to review and possible deletion of the July 22, 1982 revisions awarding "great weight" status to energy projects and navigation, which are often in direct conflict with fish and wildlife concerns.

New York Department of Environmental Conservation:
The special weight now given to these issues of public interest is a matter of statute and/or a clear expression of congressional policy and intent. The Corps must give such weight to these matters to fully carry out the statutory requirements and fulfill its role as trustee of these public resources. To fail to give "great weight" would deny that public policy, as represented in laws, executive orders, and so forth clearly expresses the notion that some considerations are generally more important than others.

Missouri Department of Conservation:
The State's Fish and Wildlife Agency and the U.S. Fish and Wildlife Service should decide if the project's effects to fish and wildlife are minor, not the District Engineer. We object to granting this authority to the Corps.

West Virginia Department of Natural Resources:
The deletion of emphasis on environmental factors such as fish and wildlife and water conservation is contrary to the whole tenet of the Clean Water Act. This proposed change should not be implemented.

APPENDIX IV

U.S. Army Corps of Engineers
Section 404 Permit Activity

TABLE 1

U.S. Army Corps of Engineers Section 404 Permit Activity

	1968				1969				1970				1971			
	Section 10	Section 10/404	Section 404	Total	Section 10	Section 10/404	Section 404	Total	Section 10	Section 10/404	Section 404	Total	Section 10	Section 10/404	Section 404	Total
Permit Applications																
1. Applications recieved	7,569	7,130	3,969	17,668	8,936	7,174	3,022	19,132	8,939	6,987	3,037	18,693	10,246	7,171	3,581	21,000
2. Permits cancelled or withdrawn	975	1,100	769	2,844	1,057	1,237	621	2,915	1,174	1,276	650	3,100	1,069	1,077	955	3,101
3. Permits issued (Letters of Permission)	3,596 (3,500)	5,796 (36)	3,178 (5)	11,560 (3,541)	6,481 (3,256)	5,082 (30)	2,300 (10)	13,483 (3,266)	5,203 (3,031)	5,339 (50)	3,461 (10)	13,203 (3,099)	5,437 (3,214)	5,779 (9)	1,905 (5)	13,111 (3,736)
4. Permits denied	97	130	123	350	84	105	77	266	60	99	47	216	68	81	10	159
Activity Under the MOA																
1. Permits with unresolved objections forwarded to Div/OCE	8	39	0	45	4	27	12	43	9	0	20	49	18	40	9	65

SOURCE: U.S. Army Corps of Engineers Regulatory Summary Report

APPENDIX V

Correspondence from Assistant
Army Secretary William Gianelli
on EPA's 404(b)(1) Guidelines

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310

November 30, 1982

Honorable Eric Eidsness
Assistant Administrator for Water
Environmental Protection Agency
Washington, D. C. 20460

Dear Mr. Eidsness:

At our meeting on November 22d, you asked that we give you specifics on those portions of the 404(b)(1) guidelines having to do with policy statements and definitions which we felt could and should be omitted from the guidelines. Attached is a marked up version of the guidelines which should be helpful to you in this regard.

As I indicated to you at the time of our meeting last week, I am very concerned that we are not complying with the timetable of the Presidential Task Force on completing our regulatory reform effort on the 404 program. At this time the 404(b)(1) guidelines under preparation by your office are lagging behind the other efforts and constitute the bottleneck in the reform effort.

Reaching OMB with a Notice of Proposed Rulemaking on the guidelines which are to be developed in conjunction with the Army during the month of December is a hollow objective unless a draft is available to us very soon. Accordingly, in view of the long period of time EPA has known of the timetable, it would seem to me that you should make every effort to have such a draft in our hands not later than the end of next week. As Chairman of the Army-OMB reform effort, I expect to be reporting our reform progress to the Presidential Task Force, together with explanations as to why the timetable is not being met.

Sincerely,

Bill Gianelli

William R. Gianelli
Assistant Secretary of the Army
(Civil Works)

PART 230—SECTION 404(b)(1) GUIDELINES FOR SPECIFICATION OR DISPOSAL SITES FOR DREDGED OF FILL MATERIAL

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Subpart I—Planning To Shorten Permit Processing Time

230.80 Advanced identification of disposal areas.

Authority: This regulation is issued under authority of Sections 404(b) and 501(a) of the Clean Water Act of 1977, 33 U.S.C. § 1344(b) and § 1361(a).

Subpart A—General

§ 23.1 Purpose and policy.

(a) The purpose of these Guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material.

does not fully state the policy section of CWA which also gives primary responsibility to the states and requires drastic minimization of paperwork and decision processes. This purpose and policy section strongly biases ~~[illegible]~~ actions towards stn Federal control

(b) Congress has expressed a number of policies in the Clean Water Act. These Guidelines are intended to be consistent with and to implement those policies.

(c) Fundamental to these Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.

(d) From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by these Guidelines. The guiding principle should be that degradation or destruction of special sites may represent an irreversible loss of valuable aquatic resources.

§ 230.2 Applicability.

(a) These Guidelines have been developed by the Administrator of the Environmental Protection Agency in conjunction with the Secretary of the Army acting through the Chief of Engineers under section 404(b)(1) of the Clean Water Act (33 U.S.C. 1344). The Guidelines are applicable to the specification of disposal sites for discharges of dredged or fill material into waters of the United States. Sites may be specified through:

(1) The regulatory program of the U.S. Army Corps of Engineers under sections 404(a) and (e) of the Act (see 33 CFR 320, 323 and 325);

(2) The civil works program of the U.S. Army Corps of Engineers (see 33 CFR 209.145 and section 150 of Pub. L. 94–587, Water Resources Development Act of 1976);

(3) Permit programs of States approved by the Administrator of the Environmental Protection Agency in accordance with sections 404(g) and (h) of the Act (see 40 CFR 122, 123 and 124);

(4) Statewide dredged or fill material regulatory programs with best management practices approved under section 208(b)(4)(B) and (C) of the Act (see 40 CFR 35.1560);

which meet criteria specified in section 404(r) of the Act.

(b) These Guidelines will be applied in the review of proposed discharges of dredged or fill material into navigable waters which lie inside the baseline from which the territorial sea is measured, and the discharge of fill material into the territorial sea, pursuant to the procedures referred to in paragraphs (a)(1) and (a)(2) above. The discharge of dredged material into the territorial sea is governed by the Marine Protection, Research, and Sanctuaries Act of 1972, Pub. L. 92–532, and regulations and criteria issued pursuant thereto (40 CFR Part 220–228).

(c) Guidance on interpreting and implementing these Guidelines may be prepared jointly by EPA and the Corps at the national or regional level from time to time. No modifications to the basic application, meaning, or intent of these Guidelines will be made without rulemaking by the Administrator under the Administrative Procedure Act (5 U.S.C. 551 *et seq.*).

§ 230.3 Definitions.

For purposes of this Part, the following terms shall have the meanings indicated:

(a) The term "Act" means the Clean Water Act (also known as the Federal Water Pollution Control Act or FWPCA) Pub. L. 92–500, as amended by Pub. L. 95–217, 33 U.S.C. 1251, *et seq.*

~~(b) The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes, and the like are "adjacent wetlands."~~

~~(c) The terms "aquatic environment" and "aquatic ecosystem" mean waters of the United States, including wetlands, that serve as habitat for interrelated and interacting communities and populations of plants and animals.~~

~~(d) The term "carrier of contaminant" means dredged or fill material that contains contaminants.~~

~~(e) The term "contaminant" means a chemical or biological substance in a form that can be incorporated into, onto or be ingested by and that harms aquatic organisms, consumers of aquatic organisms, or users of the aquatic environment, and includes but is not limited to the substances on the 307(a)(1) list of toxic pollutants promulgated on January 31, 1978 (43 FR 4108).~~

(f) [Reserved]

(g) [Reserved]

(h) The term "discharge point" means the point within the disposal site at which the dredged or fill material is released.

None of these definitions relate to "effects of disposal of pollutants" or to "degradation of waters." Some definitions should be retained because they don't appear other places in Federal regulations or in the statute.

statute uses the term pollutant and defines it in Sec. 502(6).

(i) The term "disposal site" means that portion of the "waters of the United States" where specific disposal activities are permitted and consist of a bottom surface area and any overlying volume of water. In the case of wetlands on which surface water is not present, the disposal site consists of the wetland surface area.

(j) [Reserved]

(k) The term "extraction site" means the place from which the dredged or fill material proposed for discharge is to be removed.

(l) [Reserved]

(m) The term "mixing zone" means a limited volume of water serving as a zone of initial dilution in the immediate vicinity of a discharge point where receiving water quality may not meet quality standards or other requirements otherwise applicable to the receiving water. The mixing zone should be considered as a place where wastes and water mix and not as a place where effluents are treated.

(n) The term "permitting authority" means the District Engineer of the U.S. Army Corps of Engineers or such other individual as may be designated by the Secretary of the Army to issue or deny permits under section 404 of the Act; or the State Director of a permit program approved by EPA under § 404(g) and § 404(h) or his delegated representative.

~~(o) The term "pollutant" means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials not covered by the Atomic Energy Act, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. The legislative history of the Act reflects that "radioactive materials" as included within the definition of "pollutant" in section 502 of the Act means only radioactive materials which are not encompassed in the definition of source, byproduct, or special nuclear materials as defined by the Atomic Energy Act of 1954, as amended, and regulated under the Atomic Energy Act. Examples of radioactive materials not covered by the Atomic Energy Act and, therefore, included within the term "pollutant", are radium and accelerator produced isotopes. See *Train* v. *Colorado Public Interest Research Group, Inc.*, 426 U.S. 1 (1976).~~

This goes well beyond "404" pollutants and does not contain the exclusions in the statute regarding sewage from vessels and oil and gas production.

~~(p) The term "pollution" means the man-made or man-induced alteration of the chemical, physical, biological or radiological integrity of an aquatic ecosystem.~~

unnecessary

~~(q) The term "practicable" means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.~~

policy call

those sites identified in Subpart E. They are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. (See 230.10(a)(3))

This is a "made-up" term which goes beyond statutory requirements.

(r) The term "territorial sea" means the belt of the sea measured from the baseline as determined in accordance with the Convention on the Territorial Sea and the Contiguous Zone and extending seaward a distance of three miles.

Does not relate to "effects"

(s) The term "waters of the united States" means:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

(i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) Which are used or could be used for industrial purposes by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under this definition.

(5) Tributaries of waters identified in paragraphs (1)–(4) of this section;

(6) The territorial sea;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1)–(6) of this section; waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR § 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

This is a jurisdictional call not related to "effects" of a discharge. While we acknowledge EPA's primary role in determining jurisdiction, we believe that the proper place to incorporate this for the benefit of the interest public is in the regulations governing the program, 33 CFR.

(t) The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

The Guidelines are divided into eight subparts. Subpart A presents those provisions of general applicability, such as purpose and definitions. Subpart B establishes the four conditions which must be satisfied in order to make a finding that a proposed discharge of dredged or fill material complies with the Guidelines. Section 230.11 of Subpart B, sets forth factual determinations which are to be considered in determining whether or not a proposed discharge satisfies the Subpart B conditions of compliance. Subpart C describes the physical and chemical components of a site and provides guidance as to how proposed discharges of dredged or fill material may affect these components. Subparts D–F detail the special characteristics of particular aquatic ecosystems in terms of their values, and the possible loss of these values due to discharges of dredged or fill material. Subpart G prescribes a number of physical, chemical, and biological evaluations and testing procedures to be used in reaching the required factual determinations. Subpart H details the means to prevent or mimimize adverse effects. Subpart I concerns advanced identification of disposal areas.

~~§ 230.5 General procedures to be followed.~~

In evaluating whether a particular discharge site may be specified, the permitting authority should use these Guidelines in the following sequence:

(a) In order to obtain an overview of the principal regulatory provisions of the Guidelines, review the restrictions on discharge in § 230.10(a)–(d), the measures to mimimize adverse impact of Subpart H, and the required factual determinations of § 230.11.

(b) Determine if a General permit (§ 230.7) is applicable; if so, the applicant needs merely to comply with its terms, and no further action by the permitting authority is necessary. Special conditions for evaluation of proposed General permits are contained in § 230.7. If the discharge is not covered by a General permit,

(c) Examine practicable alternatives to the proposed discharge, that is, not discharging into the waters of the U.S. or discharging into an alternative aquatic site with potentially less damaging consequences (§ 230.10(a)).

(d) Delineate the candidate disposal site consistent with the criteria and evaluations of § 230.11(f).

(e) Evaluate the various physical and chemical components which characterize the non-living environment of the candidate site, the substrate and the water including its dynamic characteristics (Subpart C).

(f) Identify and evaluate any special or critical characteristics of the candidate disposal site, and surrounding areas which might be affected by use of such site, related to their living communities or human uses (Subparts D, E, and F).

Guidelines should set "standards of performance" rather than step-by-step procedures. The approach given here severely restricts field discretion and opens many avenues of legal attack for procedural errors.

(g) Review Factual Determinations in § 230.11 to determine whether the information in the project file is sufficient to provide the documentation required by § 230.11 or to perform the pre-testing evaluation described in § 230.60, or other information is necessary.

(h) Evaluate the material to be discharged to determine the possibility of chemical contamination or physical incompatibility of the material to be discharged (§ 230.60).

(i) If there is a reasonable probability of chemical contamination, conduct the appropriate tests according to the section on Evaluation and Testing (§ 230.61).

(j) Identify appropriate and practicable changes to the project plan to minimize the environmental impact of the discharge, based upon the specialized methods of minimization of impacts in Subpart H.

(k) Make and document Factual Determinations in § 230.11.

(l) Make and document Findings of Compliance (§ 230.12) by comparing Factual Determinations with the requirements for discharge of § 230.10.

This outline of the steps to follow in using the Guidelines is simplified for purposes of illustration. The actual process followed may be iterative, with the results of one step leading to a reexamination of previous steps. The permitting authority must address all of the relevant provisions of the Guidelines in reaching a Finding of Compliance in an individual case.

SEE NOTE ON PREVIOUS PAGE

§ 230.6 Adaptability.

(a) The manner in which these Guidelines are used depends on the physical, biological, and chemical nature of the proposed extraction site, the material to be discharged, and the candidate disposal site, including any other important components of the ecosystem being evaluated. Documentation to demonstrate knowledge about the extraction site, materials to be extracted, and the candidate disposal site is an essential component of guideline application. These Guidelines allow evaluation and documentation for a variety of activities, ranging from those with large, complex impacts on the aquatic environment to those for which the impact is likely to be innocuous. It is unlikely that the Guidelines will apply in their entirety to any one activity, no matter how complex. It is anticipated that substantial numbers of permit applications will be for minor, routine activities that have little, if any, potential for significant degradation of the aquatic environment. It generally is not intended or expected that extensive testing, evaluation or analysis will be needed to make findings of compliance in such routine cases. Where the conditions for General permits are met, and where numerous applications for similar activities are likely, the use of General permits will eliminate repetitive evaluation and documentation for individual discharges.

EXTRANEOUS.

implementing the Guidelines, must recognize the different levels of effort that should be associated with varying degrees of impact and require or prepare commensurate documentation. The level of documentation should reflect the significance and complexity of the discharge activity.

(c) An essential part of the evaluation process involves making determinations as to the relevance of any portion(s) of the Guidelines and conducting further evaluation only as needed. However, where portions of the Guidelines review procedure are "short form" evaluations, there still must be sufficient information (including consideration of both individual and cumulative impacts) to support the decision of whether to specify the site for disposal of dredged or fill material and to support the decision to curtail or abbreviate the evaluation process. The presumption against the discharge in § 230.1 applies to this decision-making.

(d) In the case of activities covered by General permits or 208(b)(4)(B) and (C) Best Management Practices, the analysis and documentation required by the Guidelines will be performed at the time of General permit issuance or 208(b)(4)(B) and (C) Best Management Practices promulgation and will not be repeated when activities are conducted under a General permit or 208(b)(4)(B) and (C) Best Management Practices control. These Guidelines do not require reporting or formal written communication at the time individual activities are initiated under a General permit or 208(b)(4)(B) and (C) Best Management Practices. However, a particular General permit may require appropriate reporting.

§ 230.7 General permits.

~~(a) *Conditions for the issuance of General permits.* A General permit for a category of activities involving the discharge of dredged or fill material complies with the Guidelines if it meets the applicable restrictions on the discharge in § 230.10 and if the permitting authority determines that:~~

~~(1) The activities in such category are similar in nature and similar in their impact upon water quality and the aquatic environment;~~

~~(2) The activities in such category will have only minimal adverse effects when performed separately; and~~

~~(3) The activities in such category will have only minimal cumulative adverse effects on water quality and the aquatic environment.~~

~~(b) *Evaluation process.* To reach the determinations required in paragraph (a) of this section, the permitting authority~~

NOT RELATED TO "EFFECTS"

shall set forth in writing an evaluation of the potential individual and cumulative impacts of the category of activities to be regulated under the General permit. Some of the information necessary for this evaluation can be obtained from potential permittees and others through the proposal of General permits for public review. The evaluation must be completed before any General permit is issued, and the results must be published with the final permit.

Procedural / policy

(1) This evaluation shall be based upon consideration of the prohibitions listed in § 230.10(b) and the factors listed in § 230.10(c), and shall include documented information supporting each factual determination in § 230.11 of the Guidelines (consideration of alternatives in § 230.10(a) are not directly applicable to General permits).

NOT POSSIBLE TO DO EXPLICITLY.

(2) The evaluation shall include a precise description of the activities to be permitted under the General permit, explaining why they are sufficiently similar in nature and in environmental impact to warrant regulation under a single General permit based on Subparts C–F of the Guidelines. Allowable differences between activities which will be regulated under the same General permit shall be specified. Activities otherwise similar in nature may differ in environmental impact due to their location in or near ecologically sensitive areas, areas with unique chemical or physical characteristics, areas containing concentrations of toxic substances, or areas regulated for specific human uses or by specific land or water management plans (e.g., areas regulated under an approved Coastal Zone Management Plan). If there are specific geographic areas within the purview of a proposed General permit (called a draft General permit under a State 404 program), which are more appropriately regulated by individual permit due to the considerations cited in this paragraph, they shall be clearly delineated in the evaluation and excluded from the permit. In addition, the permitting authority may require an individual permit for any proposed activity under a General permit where the nature or location of the activity makes an individual permit more appropriate.

NOT RELATED TO "EFFECTS"

(3) To predict cumulative effects, the evaluation shall include the number of individual discharge activities likely to be regulated under a General permit until its expiration, including repetitions of individual discharge activities at a single location.

FAR TOO RESTRICTIVE

Subpart B—Compliance With the Guidelines

§ 230.10 Restrictions on discharge.

Note.—Because other laws may apply to particular discharges and because the Corps of Engineers or State 404 agency may have additional procedural and substantive requirements, a discharge complying with the requirement of these Guidelines will not automatically receive a permit.

Although all requirements in § 230.10 must be met, the compliance evaluation procedures will vary to reflect the seriousness of the potential for adverse impacts on the aquatic ecosystems posed by specific dredged or fill material discharge activities.

~~(a) Except as provided under~~ § 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

(1) For the purpose of this requirement, practicable alternatives include, but are not limited to:

(i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;

(ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;

(2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity may be considered.

(3) Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in Subpart E) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demostrated ~~otherwise.~~

PRESUMPTIONS NOT REQUIRED BY STATUTE.

~~(4) For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. On occasion, these NEPA documents may address a broader range of alternatives than required to be considered under this paragraph or may not have considered the alternatives in sufficient detail to respond to the requirements of these Guidelines. In the latter case, it may be necessary to supplement these NEPA documents with this additional information.~~

SUCH A RIGOROUS EVALUATION OF ALTERNATIVE IS NOT REQUIRED BY STATUTE.

~~(5) To the extent that practicable alternatives have been identified and evaluated under a Coastal Zone Management program, a § 208 program, or other planning process, such evaluation shall be considered by the permitting authority as part of the consideration of alternatives under the Guidelines. Where such evaluation is less complete than that contemplated under this subsection, it must be supplemented accordingly.~~

(b) No discharge of dredged or fill material shall be permitted if it:

~~(1) Causes or contributes, after consideration of disposal site dilution and dispersion, to violations of any applicable State water quality standards;~~

COVERED BY 401 STATE CERTIFICATION

(2) Violates any applicable toxic effluent standard or prohibition under section 307 of the Act;

~~(3) Jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or results in likelihood of the destruction or adverse modification of a habitat which is determined by the Secretary of Interior or Commerce, as appropriate, to be a critical habitat under the Endangered Species Act of 1973, as amended. If an exemption has been granted by the Endangered Species Committee, the terms of such exemption shall apply in lieu of this subparagraph;~~

COVERED BY ENDANGERED SPECIES ACT PROCEDURES

~~(4) Violates any requirement imposed by the Secretary of Commerce to protect any marine sanctuary designated under Title III of the Marine Protection, Research, and Sanctuaries Act of 1972.~~

COVERED BY OCEAN DUMPING ACT PROCEDURES

~~(c) Except as provided under § 404(b)(2), no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States. Findings of significant degradation related to the proposed discharge shall be based upon appropriate factual determinations, evaluations, and tests required by~~

NOT REQUIRED BY STATUTE.

~~Subparts B and G, after consideration of~~ Subparts C–F, with special emphasis on the persistence and permanence of the effects outlined in those subparts. Under these Guidelines, effects contributing to significant degradation considered individually or collectively, include:

(1) Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.

(2) Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;

(3) Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or

(4) Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.

(d) Except as provided under § 404(b)(2), no discharge of dredged or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem. ~~Subpart H identifies such possible steps.~~

LISTING THESE IN SUCH DETAIL PLACES AN UNNECESSARY DOCUMENTATION BURDEN ON THE APPLICANT AND THE CORPS AND IN THE VAST MAJORITY OF CASES IS NON-PRODUCTIVE.

§ 230.11 Factual determinations.

The permitting authority shall determine in writing the potential short-term or long-term effects of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment in light of Subparts C–F. Such factual determinations shall be used in § 230.12 in making findings of compliance or non-compliance with the restrictions on discharge in § 230.10. The evaluation and testing procedures described in § 230.60 and § 230.61 of Subpart G shall be used as necessary to make, and shall be described in, such determination. The determinations of effects of each proposed discharge shall include the following:

(a) *Physical substrate determinations.* Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, on the characteristics of the substrate at the proposed disposal site. Consideration shall be given to the similarity in particle size, shape, and degree of compaction of the material

proposed for discharge and the material constituting the substrate at the disposal site, and any potential changes in substrate elevation and bottom contours, including changes outside of the disposal site which may occur as a result of erosion, slumpage, or other movement of the discharged material. The duration and physical extent of substrate changes shall also be considered. The possible loss of environmental values (§ 230.20) and actions to minimize impact (Subpart H) shall also be considered in making these determinations. Potential changes in substrate elevation and bottom contours shall be predicted on the basis of the proposed method, volume, location, and rate of discharge, as well as on the individual and combined effects of current patterns, water circulation, wind and wave action, and other physical factors that may affect the movement of the discharged material.

(b) *Water circulation, fluctuation, and salinity determinations.* Determine the nature and degree of effect that the proposed discharge will have individually and cumulatively on water, current patterns, circulation including downstream flows, and normal water fluctuation. Consideration shall be given to water chemistry, salinity, clarity, color, odor, taste, dissolved gas levels, temperature, nutrients, and eutrophication plus other appropriate characteristics. Consideration shall also be given to the potential diversion or obstruction of flow, alterations of bottom contours, or other significant changes in the hydrologic regime. Additional consideration of the possible loss of environmental values (§ 230.23–.25) and actions to minimize impacts (Subpart H), shall be used in making these determinations. Potential significant effects on the current patterns, water circulation, normal water fluctuation and salinity shall be evaluated on the basis of the proposed method, volume, location, and rate of discharge.

(c) *Suspended particulate/turbidity determinations.* Determine the nature and degree of effect that the proposed discharge will have, individually and cumulatively, in terms of potential changes in the kinds and concentrations of suspended particulate/turbidity in the vicinity of the disposal site. Consideration shall be given to the grain size of the material proposed for discharge, the shape and size of the plume of suspended particulates, the duration of the discharge and resulting plume and whether or not the potential changes will cause violations of applicable water quality standards.

Consideration should also be given to possible loss of environmental s (§ 230.21) and to actions for zing impacts (Subpart H). eration shall include the proposed method, volume, location, and rate of discharge, as well as the individual and combined effects of current patterns, water circulation and fluctuations, wind and wave action, and other physical factors on the movement of suspended particulates.

(d) *Contaminant determinations.* Determine the degree to which the material proposed for discharge will introduce, relocate, or increase contaminants. This determination shall consider the material to be discharged, the aquatic environment at the proposed disposal site, and the availability of contaminants.

(e) *Aquatic ecosystem and organism determinations.* Determine the nature and degree of effect that the proposed discharge will have, both individually and cumulatively, on the structure and function of the aquatic ecosystem and organisms. Consideration shall be given to the effect at the proposed disposal site of potential changes in substrate characteristics and elevation, water or substrate chemistry, nutrients, currents, circulation, fluctuation, and salinity, on the recolonization and existence of indigenous aquatic organisms or communities. Possible loss of environmental values (§ 230.31), and actions to minimize impacts (Subpart H) shall be examined. Tests as described in § 230.61 (Evaluation and Testing), may be required to provide information on the effect of the discharge material on communities or populations of organisms expected to be exposed to it.

(f) *Proposed disposal site determinations.* (1) Each disposal site shall be specified through the application of these Guidelines. The mixing zone shall be confined to the smallest practicable zone within each specified disposal site that is consistent with the type of dispersion determined to be appropriate by the application of these Guidelines. In a few special cases under unique environmental conditions, where there is adequate justification to show that widespread dispersion by natural means will result in no significantly adverse environmental effects, the discharged material may be intended to be spread naturally in a very thin layer over a large area of the substrate rather than be contained within the disposal site.

(2) The permitting authority and the Regional Administrator shall consider the following factors in determining the acceptability of a proposed mixing zone:

(i) Depth of water at the disposal site;

(ii) Current velocity, direction, and variability at the disposal site;

(iii) Degree of turbulence;

(iv) Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site;

(v) Discharge vessel speed and direction, if appropriate;

(vi) Rate of discharge;

(vii) Ambient concentration of constituents of interest;

(viii) Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities;

(ix) Number of discharge actions per unit of time;

(x) Other factors of the disposal site that affect the rates and patterns of mixing.

(g) *Determination of cumulative effects on the aquatic ecosystem.* (1) Cumulative impacts are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

(2) Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical. The permitting authority shall collect information and solicit information from other sources about the cumulative impacts on the aquatic ecosystem. This information shall be documented and considered during the decision-making process concerning the evaluation of individual permit applications, the issuance of a General permit, and monitoring and enforcement of existing permits.

(h) *Determination of secondary effects on the aquatic ecosystem.* (1) Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final section 404 action is taken by permitting authorities.

(2) Some examples of secondary effects on an aquatic ecosystem are fluctuating water levels in an impoundment and downstream associated with the operation of a dam, septic tank leaching and surface runoff

from residential or commercial developments on fill, and leachate and runoff from a sanitary landfill located in waters of the U.S. Activities to be conducted on fast land created by the discharge of dredged or fill material in waters of the United States may have secondary impacts within those waters which should be considered in evaluating the impact of creating those fast lands.

§ 230.12 Findings of compliance or non-compliance with the restrictions on discharge.

(a) On the basis of these Guidelines (Subparts C through G) the proposed disposal sites for the discharge of dredged or fill material must be:

(1) Specified as complying with the requirements of these Guidelines; or

(2) Specified as complying with the requirements of these Guidelines with the inclusion of appropriate and practicable discharge conditions (see Subpart H) to minimize pollution or adverse effects to the affected aquatic ecosystems; or

(3) Specified as failing to comply with the requirements of these Guidelines where:

(i) There is a practicable alternative to the proposed discharge that would have less adverse effect on the aquatic ecosystem, so long as such alternative does not have other significant adverse environmental consequences; or

(ii) The proposed discharge will result in significant degradation of the aquatic ecosystem under § 230.10(b) or (c); or

(iii) The proposed discharge does not include all appropriate and practicable measures to minimize potential harm to the aquatic ecosystem; or

(iv) There does not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply with these Guidelines.

(b) Findings under this section shall be set forth in writing by the permitting authority for each proposed discharge and made available to the permit applicant. These findings shall include the factual determinations required by § 230.11, and a brief explanation of any adaptation of these Guidelines to the activity under consideration. In the case of a General permit, such findings shall be prepared at the time of issuance of that permit rather than for each subsequent discharge under the authority of that permit.

Subpart C—Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

Note.—The effects described in this subpart should be considered in making the

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310

December 17, 1982

The Vice President
The White House
Washington, D.C. 20501

Dear Mr. Vice President:

On May 7, 1982, the Presidential Task Force on Regulatory Relief directed a number of reforms to be made to the Army Corps of Engineers' regulatory programs under Section 404 of the Clean Water Act and Section 10 of the River and Harbor Act of 1899.

Executive Branch agencies were asked to implement these reforms within six months. Because that time has expired, in my capacity as Chairman of the Interagency Working Group charged with overseeing the reform effort, I am attaching a complete status report for your information.

Completion of your task to us awaits completion of a draft of the 404(b)(1) guidelines by the Environmental Protection Agency. These guidelines were promised first in November, then in December, then in January and now in February. In addition, the publication of our final regulations is being held up pending EPA concurrence to our new jurisdictional definition, or EPA's submission of an alternate proposal with which Army can agree. Efforts to get EPA to address these processes to meet your time schedules have not been successful.

I believe it is time for your personal involvement to bring this matter to a conclusion. We remain steadfastly committed to carrying out your charter of May 7, 1982, and securing responsible reforms for the Nation. Your staff has been of great assistance to us and we will continue to work very hard to resolve these issues. With your help, I am confident we can still succeed.

Sincerely,

Bill Gianelli

William R. Gianelli
Assistant Secretary of the Army
(Civil Works)

Attachment

Several other aspects of reform are contained in proposed regulations which Army has informally provided to OMB and coordinated with other affected agencies. The major points are greater authority to and reliance on the States, expanded emphasis on general permits, and clarification of the scope of Section 404 jurisdiction.

Publication of those regulations for public comment is awaiting EPA concurrence with the proposed clarification of the definition of jurisdiction. That concurrence is required by an Attorney General's decision made during the previous Administration. Although Army and EPA have had several lengthy discussion sessions among appointed agency officials and their career professional staffs, EPA has neither agreed with Army's proposal nor offered any suggestions for alternatives.

The one major aspect of reform on which little progress has been made is the shortening and simplification of the Section 404(b)(1) guidelines by EPA. EPA had promised action by November, then December, and is now saying February. Since the guidelines are required to be developed by EPA in conjunction with Army, in November Army provided EPA with an outline of principles upon which the guidelines should be based in order to be consistent with the Task Force directives and with draft guidelines which Army believes are reasonable and legally sufficient. EPA has not yet responded.

STATUS OF REFORMS TO THE ARMY CORPS OF ENGINEERS REGULATORY PROGRAMS UNDER SECTION 404 OF THE CLEAN WATER ACT AND SECTION 10 OF THE RIVER AND HARBOR ACT OF 1899

All the points raised in the May 7, 1982 decisions of the Presidential Task Force on Regulatory Relief which could be implemented without rule-making have been accomplished. The Corps of Engineers has instituted administrative reforms to reach decisions on permit applications within 60 days. In the fourth quarter of FY 1982, final actions were taken within 60 days on 45% of the permit applications, up from 36% in the third quarter. We expect continued improvement in the coming months.

New Memoranda of Agreement between Army and the Departments of Interior, Commerce, Agriculture and Transportation and the Environmental Protection Agency have been reached to expedite the review process and to reduce duplication of effort. The Agreements have worked well with one exception. Army and Interior are still experiencing difficulties and are working hard to overcome them. If after several months the problems are not corrected - the number of "intent to elevate" cases is still too high and the coordination opportunities provided the 60 day decision target is still at issue - it may be necessary to revise the new agreements.

Revisions to the Corps' NEPA and cultural resources regulations took a back seat for a time due to much greater than expected coordination problems on some more critical aspects of the reforms. The NEPA regulations are now well along the internal draft stage, and we have discussed them generally with Alan Hill of CEQ. We expect to have proposed regulations to OMB in January. We are participating with the Advisory Council on Historic Preservation and other agencies in an interagency working group to revise the ACHP regulations. We have deferred our own counterpart implementation regulations pending results of that interagency effort.

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310

March 23, 1983

The Vice President
The White House
Washington, D. C. 20500

Dear Mr. Vice President:

In the one and one-half years since the Section 404 Clean Water Act regulatory program was designated as part of this Administration's regulatory reform effort, we have accomplished many significant reforms, all without diminishing in any way compliance with environmental protection requirements.

The major administrative measure which remains is the reform of the guidelines under Section 404(b)(1) required to be developed by the Administrator of the Environmental Protection Agency in conjunction with the Secretary of the Army. These guidelines must be applied to each of the approximately 20,000 permits processed annually and are a major source of delay, duplication and uncertainty. The Army and EPA have reached an impasse on reforming those guidelines which must be resolved before we proceed with completion of the reform effort.

The primary remaining issue relates to what the nature of the guidelines is and who is in charge of and responsible for the program. The Army feels strongly that the guidelines should return to advisory status, a standing which would still accord them great weight in the process, whereas EPA feels the guidelines must be regulatory criteria. Congress charged the Corps of Engineers with responsibility for administering the program. In order to manage the program in the most effective and responsible manner and to implement fully the reforms directed by the Presidential Task Force on Regulatory Relief, the Corps must be able to balance all factors of concern to the public in reaching decisions under the program. This is consistent with the National Environmental Policy Act and with Executive Order 12291, both of which require a balanced approach to Federal decision making.

The Corps cannot reach a balanced decision properly reflecting the full range of public concerns if a permit applicant is required by regulations to comply with non-statutory criteria before the Corps can consider any other

issues. Guidelines of an advisory nature will work well to aid the Corps in determining impacts on water quality and related environmental issues when reaching a balanced decision. However, guidelines which are regulatory in nature and written by EPA, which is not responsible for administering the program, will inevitably give rise to duplication, overlap and conflict with the responsible agency's rules established under other related statutes. Such regulatory guidelines also severely inhibit the agency's ability to adapt the program regionally and in individual cases to best serve the interests of the public. In addition, regulations transform this aspect of the permit process from an internal evaluation procedure to one which creates an unnecessary third party litigation opportunity with its attendant encumbrance on the system.

In the initial version, published in September 1975, the guidelines were advisory in nature. They remained that way until the final days of the last administration, December 24, 1980, when they were changed to regulatory criteria. The revised guidelines introduced policies and procedures which overlap and conflict with regulations of the Corps of Engineers and Council on Environmental Quality in the area of alternative analysis, consideration of economic and social factors and several other important concepts. In our judgment, this runs directly counter to the decisions of the Presidential Task Force and to sound government management principles.

As long as the guidelines remain as regulatory criteria, Army will be unable to implement fully the Task Force decisions and will be unable to attain optimum management efficiency. The Corps has demonstrated over the years a high degree of environmental responsibility under the initial advisory guidelines and under NEPA and various other environmental laws. There was not and is not now any justification for imposing the additional staff burdens necessary to ensure legal compliance with regulatory criteria. The quality of decisions and hence the quality of the environment have not been enhanced by such legalistic requirements but staff efforts have certainly been dissipated.

There are several additional points of importance to this issue. First, EPA has a statutory veto under Section 404(c). We believe this is the mechanism through which Congress intended EPA to oversee actions of the Corps of Engineers to ensure that decisions meet environmental standards.

Second, Army General Counsel has analyzed the statute and believes there is no legal requirement that the guidelines be regulatory. In fact, he believes the legal analysis supports a conclusion that they should be advisory as they were in the past. The Department of Justice believes that a sound legal argument can be made to support advisory guidelines. We are confident of the soundness of the legal arguments in support of our position and will be glad to respond in detail to any legal assertions to the contrary.

There are several other important issues outstanding. However, we would expect that Army and EPA, with the assistance if necessary of the Task Force, can resolve those without imposing on your personal attention once this issue is settled.

Given the substantial and lasting management and program efficiencies to be gained and better responsiveness to the public interest, including the absence of any diminution at all in compliance with environmental protection statutes, Army recommends that the Administration adopt the position that the guidelines are advisory in nature and that decisions under the program should reflect the full range of public concerns as provided for in existing Corps of Engineers regulations.

Dr. John Hernandez and I have discussed this issue at length and stand ready to assist you in any way in reaching a solution.

Sincerely,

Bill Gianelli

William R. Gianelli
Assistant Secretary of the Army
(Civil Works)

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310

The Vice President
The White House
Washington, D. C. 20500

Dear Mr. Vice President:

I am pleased to report some significant progress in the reform of the Corps of Engineers Regulatory programs under Section 10 of the River and Harbor Act of 1899 and Section 404 of the Clean Water Act.

On May 7, 1982, the Presidential Task Force on Regulatory Relief issued directives for reforming the Corps' program. As a result of implementing reform measures, the average time required to process an individual permit has been reduced from 142 days to 82 days and the backlog of applications pending decision has been reduced from 7500 to 4300. In addition, we have established as a goal that all applications be processed within 60 days. Since the reform effort began, the percentage of individual applications processed within 60 days nearly doubled from 33% to 59%.

A most significant feature related to these statistics is that there has been no reduction in any of the environmental protections afforded by the program. At the outset of the reform effort, many people speculated that the reform measures would have adverse environmental impacts. Now, after more than a year of experience with our reforms, these fears have not been realized. In fact, we expect, as we have always expected, that the reforms will provide even better environmental protections by allowing the Corps to concentrate limited staff resources on the truly significant issues and not waste them on non-productive bureaucratic red tape.

I would add the caution that much remains to be done. For example, directives of the Task Force which have not been completed include shortening and simplifying the guidelines developed by the Environmental Protection Agency under Section 404(b)(1), clarifying the scope of jurisdiction, and revising related regulations such as those issued pursuant to the National Environmental Policy Act and the National Historic Preservation Act. We are continuing to work diligently towards those goals.

I appreciate your leadership and support throughout this important endeavor. Some of the President's goals in this area have been achieved and with your continued support, I am certain we will achieve all the goals that the Presidential Task Force set for us. I must point out that, while we should take pride in the accomplishments to date, we should make certain that our reforms are not short-lived and easily reversed. The way to accomplish this, in our view, is to fully implement the May 7, 1982, charter.

Sincerely,

(Signed)

William R. Gianelli
Assistant Secretary of the Army
(Civil Works)

cf: Interested Federal
Agencies

20-955 O—84——132

APPENDIX VI

What H.R. 1570 Would Do

The environmental impacts of H.R. 1570 would be far-reaching. If enacted, H.R. 1570 would:

1) Restrict the definition of "navigable waters," for the purposes of Section 404, to waters which are presently used, or are susceptible to use in their natural condition or by reasonable improvements as a means to transport interstate or foreign commerce;

2) Exclude all discharges of dredged or fill material into waters and wetlands not covered by this new definition from prohibition or regulation under Section 404 of the Clean Water Act ("CWA"), or Sections 9, 10, or 13 of the 1899 Rivers and Harbors Act ("RHA");

3) Shift the burden of demonstrating compliance with the Section 404(b) guidelines from applicants to the U.S. Army Corps of Engineers ("COE");

4) Weaken the ability of Section 404 to protect even the navigable waters by allowing the COE to consider factors other than the Section 404(b) environmental guidelines when judging the merits of a dredge or fill activity;

5) Repeal the optional State Permit Programs currently authorized under Section 404; and

6) Eliminate the application of all federal laws to the discharge of dredged or fill material into non-navigable waters.

Restricting the Definition of "Navigable Waters"

H.R. 1570 raises the fundamental question of whether the CWA will continue to control water pollution or will be reduced to a navigation law. Six years ago bills and amendments almost identical to H.R. 1570 were introduced to restrict Section 404 to the "navigable waters." They did not pass. Instead, more moderate, reasoned, and carefully circumscribed amendments to Section 404 were enacted in 1977 that retained the broad jurisdictional scope of Section 404 over "all waters of the U.S."[1/] In refusing to reduce the jurisdictional scope of the Section 404 program, Congress reaffirmed its intention to protect this Nation's wetlands through Section 404:

> "Without it [Section 404], critical aquatic areas including swamps, marshes and submerged grass flats, which are an important segment of this Nation's water resources and are essential to the preservation of migratory and resident fish, birds, and other animal populations, might otherwise be irrevocably destroyed.
>
> "The Section 404 program as outlined in the committee bill will be a successful and reasonable process for protecting inland and coastal waters, including wetlands, from adverse environmental effects resulting from the discharge of dredged or fill material."
>
> Legislative History of the Clean Water Act of 1977, at 413.

1/ To eliminate concerns about overregulation Congress exempted farmers, foresters, and ranchers, authorized the issuance of general permits, and provided for state takeover of Section 404 for the non-navigable waters.

The importance of regulating the destruction of wetlands through Section 404 was recognized at that time:

> "There is no question that the systematic destruction of the Nation's wetlands is causing serious, permanent ecological damage. The wetlands and bays, estuaries and deltas are the Nation's most biologically active areas. They represent a principal source of food supply. They are spawning grounds for much of the fish and shellfish which populate the oceans and they are passages for numerous upland game fish. They also provide nesting areas for a myriad of species of birds and wildlife.
>
> "The unregulated destruction of these areas is a matter which needs to be corrected and which implementation of Section 404 has attempted to achieve."
>
> Legislative History of the Clean Water Act of 1977 at 869 (Committee Print 1978).

Notwithstanding the events of 1976 and 1977, opponents of Section 404 continue to claim that the courts and the agencies have expanded the jurisdictional scope of the program far beyond what Congress intended by including wetlands and non-navigable waters. Those arguments should have been put to rest since Congress specifically addressed the jurisdictional scope of Section 404 in 1976 and 1977.

H.R. 1570 would have a serious impact on the chemical, biological, and physical integrity of all the Nation's waters, including the navigable waters. It would remove from federal protection under Section 404 85% of the Nation's wetlands, or 126 million of the 148 million acres currently covered, and thousands of miles of river and lake shoreline. A few examples of exempted wetlands include:

- Ninety percent of the remaining 5 million acres of bottomland hardwoods in the lower Mississippi Valley;

- All of the 2 to 2.3 million acres of prairie potholes in North Dakota;
- Over 1,259,000 of freshwater wetlands in New York;
- Almost 670,000 acres of undisturbed pocosin wetlands in North Carolina;
- The white cedar swamps in the New Jersey pine barrens;
- The Great Dismal Swamp in Virginia;
- Large portions of Florida's Everglades;
- The riparian wetlands and intermittent streams of the West; and
- Much of Alaska's tundra.

It would also prevent the federal government from regulating the discharge of contaminated dredge or fill material into non-navigable tributaries and wetlands under Section 404. Because waters are ecologically and hydrologically interrelated, contaminated dredge and fill materials containing PCB's, arsenic, kepone, DDT, mercury, and other contaminants that are discharged into non-navigable waters or wetlands will find their way into the navigable waters as well. Whether discharged into non-navigable or navigable waters, these contaminants will adversely affect water quality, pose serious human health risks, and harm fish and wildlife resources.

Furthermore, the destruction of wetlands at the headwaters of our navigable and non-navigable rivers, streams, and tributaries would alter the quality and timing of water flows into the navigable waters, and thus would adversely modify the physical and biological integrity of the navigable waters. Yet this destruction would be exempt from federal control under H.R. 1570.

In 1976 and 1977, Congress refused to restrict the federal government's pollution control authority to the navigable waters precisely because of the ecological interdependence of our waters:

> The objective of the 1972 act is to protect the physical, chemical, and biological integrity of the Nation's waters. Restriction of jurisdiction to those relatively few waterways that are used or are susceptible to use for navigation would render this purpose impossible to achieve. Discharges of dredged or fill material into lakes and tributaries of those waters can physically disrupt the chemical and biological integrity of the Nation's waters and adversely affect their quality. The presence of toxic pollutants in these materials compounds this pollution problem and further dictates that the adverse effects of such materials must be addressed where the material is first discharged into the Nation's waters. To limit the jurisdiction of the Federal Water Pollution Control Act with reference to discharges of the pollutants of dredged or fill material would cripple efforts to achieve the act's objectives.
>
> Legislative History of the Clean Water Act of 1977, at 708 (Committee Print).

That ecological interdependence continues today.

The impact of H.R. 1570 is not limited to Section 404. It would also exempt many waters and activities that are regulated under the 1899 Rivers and Harbors Act ("RHA"). Since at least 1921, all waters which had ever served as waters of commerce in the past--the so-called test of historic navigability--have been considered navigable waters and regulated under the RHA. (See, Economy Light and Power Co. v. United States, 256 U.S. 113 (1921).)[2/]

2/ It is estimated that 518,000 miles of river and 37,000 miles of lake shoreline are historically navigable or susceptible to navigation. Most of these rivers and lakes fall within the "historically navigable" category.

H.R. 1570 would also exempt from the RHA activities on non-navigable waters that would adversely impact navigable waters. Currently, the federal government can regulate activities beyond the limits of navigability if these activities adversely affect the navigable waters. (United States v. Rio Grande Irrigation Co., 174 U.S. 690 (1899).) In light of these restrictions, H.R. 1570 would eliminate the general ability of the United States to protect its public waters under the RHA, and set our pollution control efforts back to the last century.

Shifting the Burden of Compliance

We are concerned that H.R. 1570 would shift the burden of compliance under Section 404. Currently the applicant carries the burden of demonstrating that a dredge or fill activity complies with the Section 404(b) environmental guidelines. H.R. 1570 would shift that burden to COE by requiring permit issuance unless COE can demonstrate non-compliance with the guidelines. This shifting burden would increase COE workload and could in turn slow down permit processing in direct conflict with the stated purpose of H.R. 1570.

Eliminating Control Over Discharges in Non-Navigable Waters

H.R. 1570, by eliminating control over dredged or fill activities in non-navigable waters "notwithstanding any other provision of law" prevents the regulation of dredged or fill activities under other laws including the Endangered Species Act,

Marine Mammal Protection Act, Fish and Wildlife Coordination Act, and Bald and Golden Eagle Protection Act. This applies to private individuals and federal agencies. The consequences of this provision are serious and far-reaching.

Allowing COE to Consider Factors Other Than the Section 404(b) Environmental Guidelines

Currently a Section 404 permit cannot be issued unless issuance would comply with the Section 404(b) guidelines. The 404(b) guidelines establish criteria that protect fish, shellfish, wildlife, human health, and the physical, biological and chemical integrity and productivity of the Nation's waters. H.R. 1570 authorizes COE to issue permits based on "other considerations." This provision gives COE the unbridled discretion to issue permits regardless of the environmental impacts.

BEFORE THE

SUBCOMMITTEE ON WATER RESOURCES

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

UNITED STATES HOUSE OF REPRESENTATIVES

November 9, 1983

STATEMENT OF WILLIAM Y. BROWN

ENVIRONMENTAL DEFENSE FUND

NATIONAL AUDUBON SOCIETY

Mr. Chairman and Members of the Subcommittee:

It is a pleasure to appear before you today and to present testimony on Section 404 of the Clean Water Act, the foremost existing authority for protecting wetlands of the United States.

The Environmental Defense Fund, Inc. ("EDF") and the National Audubon Society support the amendments to Section 404 contained in Section 10 of H.R. 3282, introduced by Mr. Howard, and the additional amendments contained in legislation being introduced by Mr. Mrazek. We applaud the initiative and foresight exercised by Mr. Howard and Mr. Mrazek by introducing these bills, and we look forward to support for the bills from the Chairman and Members of this Subcommittee. If enacted, these amendments will set back on course a program that has been under siege by the Department of the Army since 1981.

THE RECORD AND REMEDIES

Government by "Horror Stories"

On August 10, 1981, Assistant Secretary of the Army (Civil Works) William R. Gianelli gave the keynote address entitled "The Challenge Ahead" at a meeting sponsored by the American Society of Civil Engineers. At that meeting, Mr. Gianelli stated that the Section 404 regulations and agency administration of the process were "sorely in need" of reform and that "we have begun that process."

The October, 1981, edition of The Coordinator, an official publication of the U.S. Army Corps of Engineers, reprinted portions of Mr. Gianelli's speech immediately before the following headline and story:

> URGENT NEED FOR HORROR STORIES CONTINUES
>
> A slight improvement in the flow of Section 404 HORROR STORIES (concerning review delays and jurisdictional determinations) to Water Resources Congress was recorded during August. Thus far Texas, Ohio, Alabama, Louisiana, and Colorado have contributed. But legislative relief is a long way down the road with only five states reporting. We must have more tales of woe conncected with 404 if an adequate record is to be compiled.
>
> The preceding article is reprinted from the Washington Report, the Water Resources Congress newsletter issue for September 1981.

The well of Section 404 horror stories proved dry, however; instead the Army was flooded with evidence of success.

The Right Stuff

In November, 1981, the Institute for Water Resources of the Army Corps of Engineers submitted a regulatory impact analysis ("RIA") of the Corps' permit program to the Office of the Chief of Engineers. The RIA (235 pages plus appendices) was prepared to meet the requirements of President Reagan's Executive Order on Federal Regulation (E.O.12291).

The RIA assessed and summarized key elements of the Section 404 program:

- about 148 million acres of wetlands in the United States are within the program's jurisidiction. These wetlands are found in every state and include many different kinds of ecosystems, such as saltwater and freshwater marshes, swamps, bogs, bottomland hardwoods, prairie potholes, and much arctic tundra.

- roughly half of the original wetlands in the contiguous 48 states have been destroyed.

- the Section 404 program has cut wetlands destruction roughly in half in the lower 48 states, reducing loss by more than 300,000 acres per year.

- the Corps of Engineers processes some 9,700 individual Section 404 permit applications annually: 49 percent are approved without modifications, 33 percent are approved with modifications and 16 percent of the applications are withdrawn before a decision is made. Only 2 percent of the applications are denied.

- the cost of complying with Section 404 averages less than one percent of total project value.

- the Section 404 program as in operation when the RIA was prepared "results in a net positive benefit to the Nation."

The RIA was quickly abandoned by the Army. Rather than uncovering horror, the RIA revealed sound operation of an

important federal program. The next step in "reform" of the program would have to go light on the facts.

Presidential Announcements

On May 7, 1982, the Presidential Task Force on Regulatory Relief announced "reforms" to the Section 404 program. These reforms were spearheaded by the Department of the Army. Detailed changes were specified for the memoranda of agreement (hereafter "M.O.A.'s") between the Corps and other agencies, most importantly the Environmental Protection Agency ("EPA"), Fish and Wildlife Service ("FWS"), and the National Marine Fisheries Service ("NMFS"). Other major May 7th "reforms" included mandates to expand the use of general permits, to "clarify" the scope of the permit program, and to change the Section 404(b)(1) guidelines.

The M.O.A.'s were revised early in July, 1982, essentialy eliminating the opportunity for careful interagency review and elevation of permit decisions at the request of the FWS, the NMFS, or EPA. Previously, elevation was automatic if a regional administrator or director of these agencies requested elevation within a 30-day comment period. The presidential announcements required the revised M.O.A.'s to provide only 15 days for these agencies to review applications and to request elevation. Requests for elevation now only can be made by the Assistant Secretary of Interior for Fish and Wildlife and Parks, the Administrator of the National Oceanic and

Atmospheric Administration or the Administrator or Deputy Administrator of EPA. Finally, such requests can be granted or denied at the discretion of the Assistant Secretary of the Army for Civil Works--currently Mr. Gianelli. This "Gianelli veto" was adopted over the objection of all other agencies participating in the administration of the Section 404 program--the EPA, the FWS and the NMFS.

Elevation was rarely invoked under the old M.O.A.'s--less than 1 percent of applications were elevated to the first level of review and only a fraction of these made it to the second level. The authority to elevate of the EPA, FWS, or NMFS regional administrator or director was an important factor in making Corps district engineers responsive to recommendations of these agencies on lessening environmental harm. The obstacles now in the path of elevation discourage adoption of resource agency recommendations, and we do not expect to see the situation improved during this Administration without action by the Congress. The Presidential Task Force limitations on interagency review would be overturned and replaced with a reasonable substitute by the amendment to Section 404(q) contained in Section 10 of Mr. Howard's Clean Water bill. We urge you to adopt that amendment.

Corps' Regulations Weakened

On July 22, 1982, the Corps issued new regulations for its permit program. The principal changes made by the regulations

were the issuance of new and revised nationwide, general permits. Twenty-five nationwide permits were issued or reissued for particular categories of activities. The regulations also extended and revised nationwide permits for discharges into non-tidal rivers, streams and lakes above the headwaters (5 c.f.s. flow rate) and into isolated non-tidal waters. These permits were revised to drop the requirement that lakes 10 acres or greater in size must be subject to individual permit application review.

We believe that the Corps has issued some, if not most, of these general permits in violation of the law. The general permits for discharges above the headwaters and into isolated waters are environmental disasters. Furthermore, the mischief in the July 22, 1982, Corps regulations is not limited to general permits. For example, Section 404 permits commonly have been issued subject to conditions that reduce or mitigate environmental impact. These conditions often cost the applicant little or nothing and not infrequently reduce cost. Such conditions are usually the heart of recommendations from the EPA, FWS, or NMFS. However, the July 22, 1982, regulations apparently prohibit Corps engineers from requiring modification of proposals or from conditioning permits if there are any "local, state or other Federal programs or policies to achieve the objective of the desired condition . . . " 33 C.F.R. §325.4(c)(1). Does this mean, for example, that a Section 404

permit cannot be conditioned to mitigate damage to wetlands merely because state and federal agencies may have other, perhaps ineffective, programs for the acquisition and protection of wetlands? Whatever the answer to this or other questions, this regulation is of dubious legality and muddies the responsibilities of the Corps. The regulation will tend to force Corps engineers to evaluate applications on an ill-advised "all-or-nothing" basis, as likely to injure the interests of applicants as to injure the interests of natural resource conservation.

The July 22, 1982, Corps regulations are sufficiently egregious that the Environmental Defense Fund, National Wildlife Federation, National Audubon Society, and 13 other conservation organizations have filed suit challenging them. Even as we focussed our resources to redress the Corps' assualt on its own regulations, however, the EPA began its own gambit.

EPA Begins The Reformation Waltz

On August 23, 1982, the EPA issued an advance notice of proposed rulemaking for its Section 404(b)(1) guidelines. 47 Fed. Reg. 36796. EPA had little choice; the May 7, 1982, Presidential Task Force announcments state that "[t]he EPA Section 404(b)(1) guidelines will be shortened, simplified, and made consistent with the reform measures described herein."

On March 7, 1983, EPA followed-up its advance notice by submitting draft proposed Section 404(b)(1) guidelines to the

Office of Management and Budget, requesting approval for publication in the Federal Register. Among other unfortunate revisions, the draft guidelines would have deleted the existing guideline requirement that "no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." 40 C.F.R. §230.10(a). This requirement is the heart of the EPA guidelines, particularly insofar as such environmentally preferable, practicable alternatives are presumed to occur if a proposed discharge activity would occur in a wetland and is not "water dependent" (e.g. a marina is water dependent; a shopping mall is not). The draft EPA guidelines ran out of gas when Anne Burford was replaced by William Ruckelshaus as Administrator of the EPA, and we do not know what formulation of the guidelines eventually will debut in the Federal Register. It is a matter of record that the Army has not been happy with the March 7th draft, considering it too restrictive. Given these circumstances, we are extremely pleased to see the amendment to Section 404(b) that is contained is Section 10 of Mr. Howard's bill. That amendment would make the existing practicable alternative requirement a mandate of Congress. Assuming that the water dependency test is incorporated as part of this requirement, the amendment would ensure that the EPA will not

unleash the Corps from its proper duty in protecting wetlands. The need for a strong leash--perhaps a chain--was demonstrated once again just days after EPA's draft guidelines went to OMB.

Covert Army Legislation Endorsed by Cabinet Council

On March 25, 1983, the New York Times reported that President Reagan's Council on Environment is "letting the Army Corps of Engineers seek major changes in wetlands law while the Administration is officially seeking only minor changes . . . " The Times reported that, according to a memorandum prepared by a meeting participant, the Corps had been authorized "to write its own proposals and to go to a 'friend' in Congress who would shepherd the bill." The Army did prepare such legislation and reportedly met with several trade associations. Fortunately for wetlands, Mr. Howard, Mr. Mrazek, and other elected officials have proven more discriminating in their choice of legislative animals to shepherd.

Confusion and Excess in May

On May 12, 1983, the Corps proposed amendments to its July 22, 1982, permit regulations that would turn bad to worse.[1]

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1. The following discussion on permit issuance criteria and an analysis of other aspects of the May 12 proposals are published in the National Wetlands Newsletter, July-Aug. 1983, Vol. 5, No. 4, pp. 7-9, W.Y. Brown.

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Among these are proposed changes in issuance criteria for permits that would subordinate environmental factors, elevate economics in permit application review, and further obscure the relationship between the "public interest review" and the requirements of EPA's Section 404(b)(1) guidelines.

The current Corps regulations in Section 323.6(a) state: "Applications for permits for the discharge of dredged or fill material into the waters of the United States will be reviewed in accordance with" the EPA guidelines. This section was promulgated on July 22, 1982; the preamble to the regulations states: "The guidelines and the public interest review go hand-in-hand. Once all aspects of the public interest have been considered, <u>if a project does not conform to the guidelines, the permit would be denied.</u>" [emphasis added]. The EPA guidelines are thus presented as a threshhold test although, uneconomically, permit applications are to be measured against that threshhold only <u>after</u> they have been assessed against the many dimensions of the labyrinthine public interest review.

The May 12th proposals would not amend Section 323.6(a). Instead, the proposal would release an untried herd of Minotaurs into the public interest review and, little doubt, would sacrifice wetlands before them despite the supposedly unchanged protection of the EPA guidelines.

Among several new creatures in the public interest review is Section 320.4(j)(2), which states that the district engineer will "normally accept" decisions of "state, local and tribal governments" on matters such as "zoning and land use" unless there are "significant issues of overriding national importance" such as "national security, navigation, national economic development, water quality, and national energy needs." Water quality is the only environmental factor recognized as nationally significant. Section 325.2(a)(6) of the May 12th proposals would enforce this provision by requiring the district engineer either to refrain from decisions contrary to state or local decisions or to "document" the "significant national issues and explain how they are overriding in importance." This requirement applies to Section 404 as well as to other Corps permits. A district engineer can simultaneously be required to deny and approve a permit application: an application to convert wetlands may fail to meet requirements of the EPA guidelines but conform with a use approved by a state or local government and present no issues meeting the Corps' terms for overriding importance. In this paradox, the wetlands at stake may be lost.

Another curious beast is Section 320.4(q) entitled, simply, "Economics." That section states: "When private enterprise makes application for a permit, it will generally be assumed that appropriate economic evaluations have been completed and,

therefore, the proposal is economically viable and there is a need for it in the marketplace." [emphasis added]. "Economics" is really a marvel. Who is that devilish prescient fellow "private enterprise" anyway? Are we to assume, because they are common ends of private enterprise, that default and bankruptcy are needed in the market place? Although ridicule may be the best response to Section 320.4(q), the May 12th proposals and the mentality they reflect are simply tragic.

Besides reemphasizing the need for Congress to end the debate on permit issuance criteria by legislating the current EPA guideline standards, the May 12th Corps proposals illustrate the need for another amendment to Section 404 that we understand Mr. Mrazek is introducing. The EPA has filed detailed comments on the May 12th Corps proposals, including objections on environmental grounds to several nationwide general permits. However, the EPA has declined now, and often before, to use the authority given to it under Section 404(c) to halt these permits in their tracks. The time has come to stop EPA from giving lip service to environmental concerns while, in effect, condoning the environmental degradation to which EPA objects. Mr. Mrazeks's Section 404(c) amendment would do just that: EPA would be required to stop discharges if they would have unacceptable adverse environmental impacts. EPA also would be required to review petitions for exercise of Section 404(c) authority and, if such petitions provide

substantial information that the action called for is warranted, the EPA would be required to decide whether or not to implement the petitioned action.

Mr. Mrazek is also introducing another amendment to Section 505 of the Clean Water Act--the citizens suit provision--that we urge you to adopt. His amendment would simply insert the Secretary of the Army into Section 505 whereever the Administrator of EPA now appears. Omission of the Secretary apparently was no more than an oversight in drafting; we know of no reason considered for treating the Secretary any differently than the Administrator in this matter. If anything, the record of actions by the Army indicates a greater need for judicial review. Section 505 limits as well as facilitates such review, but overall Mr. Mrazek's amendment would make it simpler to take the Corps to court on Section 505 and that would be a good thing.

CONCLUSION

We support and urge this committee to approve a Clean Water Act bill that adopts the amendments to Sections 404(b) and 404(q) that are contained in Section 10 of Mr. Howard's bill, H.R. 3282, as well as the amendments to Sections 404(b), 404(c), and 505 that are being offered by Mr. Mrazek. Nearly one-half million acres of wetlands are lost each year, a large share from dredge and fill activities. Wetlands are integral to preservation of the physical, chemical, and biological

integrity of our nation's waters. That preservation is the objective of the Clean Water Act, and the specific province of Section 404. The time as come for the Congress to reinstruct the Corps on these fundamentals.

STATEMENT OF WES HAYDEN, LEGISLATIVE COUNSEL, INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES, FOR HEARING BY HOUSE PUBLIC WORKS AND TRANSPORTATION SUBCOMMITTEE ON WATER RESOURCES ON HR 3282, AMENDING THE FEDERAL WATER POLLUTION CONTROL ACT.

Nov. 9, 1983

Mr. Chairman: Speaking for the International Association of Fish and Wildlife Agencies, I appreciate the opportunity you are affording for presentation of the organization's views on the legislation you are considering here today.

As a preface to my comments, meanwhile, a word about our make-up and mission may contribute to your understanding of our interest in the measure and the position we are taking with respect to it.

The Association can trace its origin back to the time and philosophy of Teddy Roosevelt and has been, since its formulation in 1907 and its evolvement through a succession of name changes up to the present, committed fully to the cause of sound and balanced resource conservation, management and development.

Our membership now includes fish and game agencies in each of the 50 states and Puerto Rico, as well as federal and provincial organizations involved in related activities in the United States, Canada and Mexico and has just been expanded to take in an agency in Costa Rica.

With such a constituency, we have a clear and important stake in the issue now before you and it is in that context that we commend and support the proposals outlined in HR 3282 for addressing the clean water problem--particularly those designed for preservation of an effective Section 404 dredge and fill control program.

We applaud the positive approach you have undertaken to that aspect of the issue in conception of this legislation--all the more so because it offers such a contrast to other efforts to weaken the program through regulatory and administrative changes.

Those efforts could, if successful, have a devastating impact on this organization's primary objectives and those of others in the resource conservation and management community. They would, in our considered judgment, have the potential for greatly increasing the rate of loss of irreplaceable wetlands so essential for wildlife habitat and, in addition, result in

quality degradation of the nation's waters in areas where shortcuts in review procedures may result in inadequate developmental controls.

In recognition of those possible consequences, the International has been using its resources and influence over the past 20 months in a concerted effort to counter the threat which we perceive in the proposals of the Department of the Army for reshaping of the 404 program.

In our opinion, both as initially outlined and in subsequent formal proposals for regulatory changes, they go well beyond the intent of the President's Task Force for Regulatory Relief and totally ignore provisions for balance between economic and environmental needs and interests which Congress had made in setting up the 404 program.

For that reason we find it heartening that amendments proposed in HR 3282 touch directly on those points.

Section 10 (a) of the bill re-asserts a fundamental standard for environmental protection by barring use of a disposal site unless it is determined that dredge and fill material can be deposited there without unacceptable adverse effects and that there is, in addition, no other suitable alternative.

Significantly, that is among the current EPA 404 (b) (1) guidelines which Army now seeks to have revised or dropped.

Similarly, the amendment to Section 404 (q) which HR 3282 proposes would insure that federal agencies have sufficient time to evaluate controversial permits and removes the authority of the Secretary of the Army for Civil Works to veto permit referral requests by those agencies.

We have been deeply concerned by the extent to which those rights are restricted under current Army proposals and under new Memoranda of Understanding worked out between the Corps of Engineers, EPA, National Marine Fisheries Service and U.S. Fish and Wildlife Service as part of the Army's 404 program revision plan.

You may want to know that both of those points were touched on in IAFWA position statements developed at various points in our continuing effort to force some modification of Army recommendations.

The 404 (q) issue was addressed as one of the

recommendations which the Association adopted at the North American Widllife and Natural Resources Conference in Portland, Ore. March 28, 1982 in the organization's initial response in opposition to the Army proposals as they were unveiled on Jan. 29 of that year.

We raised objection at that time to proposed elimination of the multi-level resolution process that had been authorized under MOA's then in effect between the reviewing agencies and the Corps.

The question of dredge disposal was dealt with in an Association position adopted last March 20 in Kansas City relating to EPA 404 (b) (1) guideline changes which had been published earlier in the Federal Register as an Advance Notice of Proposed Rulemaking but which had not progressed to the point of a formal proposal when we reacted and which are still being held at the agency now.

Our expressions of opposition to the reform proposals have not, however, been confined to these two occasions.

With your indulgence and in the hope that it will contribute something to the cumulative record of evidence on the issue before your subcommittee, I will mention briefly other actions we have undertaken at various stages of that continuing campaign for modification or recall of the proposals.

The first of the series after the initial position statement was in the form of an April 7, 1982 letter to Vice President George Bush in his capacity as Chairman of the President's Task Force, and which outlined the Association's detailed, section by section analysis of the Army proposal and urged that he act to modify those recommendations.

On Aug. 19, 1982 the Association's formal opposition to interim final 404 regulatory changes as published in the Federal Register of July 22 was outlined in a letter to Army Secretary John O. Marsh Jr.

That was followed by adoption of an Association resolution at its annual meeting Sept. 21, 1982 at Hilton Head Island, S.C., pointing up the joint threat to wetlands resources posed by the July 22 interim final regulations and an Aug. 23 request by the EPA for comment on possible changes in 404 (b) (1) guidelines, and posing a question as to whether the existing presumption against discharges into wetlands should be changed.

The IAFWA answer was an unequivocal "no" to weakening

changes on both Section 404 fronts.

With your permission, Mr. Chairman, I offer a copy of that resolution for the record at this point.

Going one step further, the Association asked, and was given, permission to file as an amicus curiae (friend of the court) in the suit filed Dec. 22, 1982, against the Secretary of the Army and Administrator of the EPA in U.S. District Court to block implementation of the July 22 regulations as adopted.

Our position now is the same as it has been throughout that period--that the organization and its members are quite willing to accept reasonable changes in the 404 program that will contribute to elimination of delays and increase effectiveness of its operations, but only when, and to the extent, that can be done without adversely impacting wildlife needs and interests. That has been the thrust of our presentations on the subject and we will continue to seek a resolution of the problem within that framework and philosophy.

We look forward to working with you and your subcommittee toward that objective, Mr. Chairman, and appreciate the chance to share our views on the issue with you.

Mr. ROE. Please proceed.

TESTIMONY OF ROBERT P. DAVISON, PH.D., FISHERIES AND WILDLIFE DIVISION, NATIONAL WILDLIFE FEDERATION; DR. WILLIAM Y. BROWN, SENIOR SCIENTIST AND ATTORNEY, ENVIRONMENTAL DEFENSE FUND; AND WES HAYDEN, INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES

Mr. DAVISON. I am Robert Davison, legislative representative for the National Wildlife Federation's Fisheries and Wildlife Division.

I appreciate this opportunity to voice support for the section 404 program and to urge this subcommittee to adopt the amendments to section 404 proposed in H.R. 3282, the Water Quality Renewal Act of 1983, introduced by Chairman James Howard.

In the past year and a half, the Department of the Army has substantially revised the section 404 program and further changes have been proposed. A number of these revisions and proposed revisions particularly concern us because they seriously weaken the ability of section 404 to protect this Nation's waters, especially its wetlands.

Of all those so-called regulatory reforms that have been implemented or proposed, there are two that I particularly want to address here today because they are the subject of H.R. 3282's amendments to section 404.

First, the new so-called streamlined interagency memoranda of agreement signed with Army in July 1982 that seriously weaken the ability of Federal resource agencies to review projects and recommend mitigation and project modifications.

These present agreements vest the Assistant Secretary of the Army with the authority to veto requests for review by the Federal resource agencies. They eliminate the opportunity for corps divisions to review permit decisions. They limit the issues upon which

further permit review can be requested, to exclude biological issues, they reduce the public comment period on permit applications and greatly reduce the time available to the Federal resource agencies to review, comment upon, and object to controversial permit applications.

The administration justified the new terms of these agreements on the ground that the reviewing agencies were taking too long to review and comment upon permit applications and were abusing their authority to refer permits up the Army chain of command. Those claims are unfounded.

The review agencies complied remarkably well with the time constraints of section 404 and the agencies did not abuse their authority to elevate permit decisions. Less than one-half of 1 percent of all permits were elevated from a district to division engineer between 1977 and 1981.

We also believe that the administration erred seriously when it vested veto authority in the Assistant Secretary of the Army for permit referral requests.

We believe the interagency review of permit applications is essential to the wise use and allocation of our resources and that the Assistant Secretary's veto has crippled the review process and, in our opinion, thwarted Congress intent.

Since July 1982, Interior has elevated 15 permits to the Assistant Secretary of the Army for actions that would destroy more than 6,000 acres of wetlands. Of those 15, 5 requests for further review were rejected outright. Six permits were reviewed and subsequently issued without modification. Four accepted elevations are still under review.

These problems with the new streamlined review process prompted Assistant Interior Secretary Arnett to write Assistant Secretary of the Army Gianelli on January 7, 1983:

> Bill, I agreed to the 1982 MOA in hopes it would result in timely but equitable decisions. It is just not reasonable to expend extensive manpower to meet the current permit review schedule to repeatedly have our concerns fall on deaf ears.

Again, on July 27, 1983, Arnett wrote Mr. Gianelli stating:

"I believe the current MOA is limited to a process implementation and largely ignores resource issues."

Section 10(b) of H.R. 3282 seeks to make interagency review of permits once again a meaningful and equitable process. It would amend section 404(q) to adopt the MOA procedures in effect between March 1980 and July 1982, but with shorter time frames, and three levels of review rather than five.

The amendment would once again allow corps division review of permit decisions, would allow requests for further permit review based on resource considerations, and would allow sufficient time for Federal resource agencies to evaluate permits having significant environmental effects. But most importantly, H.R. 3282 removes the authority for the Assistant Secretary of the Army to veto requests for further review and we urge the subcommittee to support that section of the bill.

The second target of the so-called regulatory reform addressed by H.R. 3282 is EPA's 404(b)(1) environmental guidelines.

In May 1982 the task force on regulatory relief directed that these guidelines be shortened and simplified and, 3 months later, EPA issued an advance notice of proposed rulemaking concerning revisions to the guidelines. The change in administration at EPA has made it more uncertain whether the guidelines will be reviewed, and if they are, whether they will be weakened.

But Assistant Secretary of the Army Gianelli has pressed hard for substantial reductions in the environmental protection provided by the guidelines, and I direct you to appendix 5 of my written statement for substantiation of that charge.

Of particular concern to us is that the revisions will, as Assistant Secretary Gianelli has recommended, eliminate or limit the current presumption against wetlands destruction from disposal of dredged or fill material.

Section 10(a) of H.R. 3282 would place this presumption in the statute. Simply put, the provision prohibits the unnecessary destruction or alteration of wetlands where practicable alternative sites are available or where the project need not be located in a wetland to meet its objective. That is, where it is not water dependent.

For example, the construction of a marina is water dependent, whereas the construction of a shopping mall is not.

The immense value of wetlands and the stunning rate at which these resources are being destroyed certainly justify the presumption against development in wetlands. I believe there is also a good policy reason for insuring this presumption is maintained. Private investors, aware of the presumption and the difficulty it would cause in procuring a section 404 permit for certain projects that are not water dependent, such as housing, have sought alternative sites.

Thus, the present 404(b) guidelines have influenced expectations and changes in the guidelines, such as those recommended by Assistant Secretary Gianelli, would alter those expectations and could undo the long-term protection of wetlands.

Section 10(a) of H.R. 3282 would prevent changes and revisions in the presumption and would insure continued protection for wetlands and predictability for developers.

We urge the subcommittee to adopt its provisions.

In conclusion, in addition to urging the subcommittee to adopt the amendments to section 404 that are proposed in H.R. 3282, we hope that you will also report the amendments to section 404 which Congressman Mrazek plans to introduce. We believe that these would be an important adjunct to the foundation laid in H.R. 3282. These amendments would help control the discharge of toxic, dredged or fill material. They would increase EPA's oversight under section 404(c) of the corps' permit processing, and they would clarify that the citizen suit provisions of section 505 apply not only to the Administrator and section 402, but also to the Secretary of the Army and section 404.

And finally, we would urge you to reject attempts to limit the waters currently protected under section 404 and to voice your opposition to the recent regulatory changes and proposed changes to section 404.

Thank you.

Mr. ROE. Thank you very much, Dr. Davison.

Dr. Brown.

Mr. BROWN. Mr. Chairman, Mr. Hammerschmidt, members of the subcommittee, I will summarize my written statement.

It is a pleasure to appear before you today and to present testimony on section 404 of the Clean Water Act, the foremost existing authority for protecting wetlands of the United States.

My testimony is given on behalf of the Environmental Defense Fund and the National Audubon Society. We support the amendments to section 404 contained in section 10 of H.R. 3282, introduced by Mr. Howard, and the additional amendments contained in legislation that will be introduced by Mr. Mrazek.

We applaud the initiative and foresight exercised by Mr. Howard and Mr. Mrazek by introducing these bills, and we look forward to support for the bill from the chairman and members of the subcommittee.

If enacted, these amendments will set back on course a program that has been under siege by the Department of the Army since 1981. I will summarize a few highlights of the Army's record on section 404.

In October 1981, The Coordinator, an official publication of the U.S. Army Corps of Engineers, reprinted a headline and story from the Water Resources Congress newsletter calling for section 404 horror stories concerning review delays and jurisdictional determinations. That story stated:

"We must have more tales of woe connected with 404 if an adequate record is to be compiled."

The well of section 404 horror stories proved dry, however. Instead, the Army was flooded with evidence of successes.

In November 1981, the Institute for Water Resources of the Army Corps of Engineers submitted a regulatory impact analysis to the Office of the Chief of Engineers. It was 235 pages long plus appendices, and it was prepared to meet President Reagan's Executive order on Federal regulations. Among other things, the RIA found the following: Section 404 program has cut wetlands destruction roughly in half in the lower 48 States, reducing loss by more than 300,000 acres per year.

Forty-nine percent of section 404 permit applications are approved without modifications; 33 percent are approved with modifications, and 16 percent of the applications are withdrawn before a decision is made. Only 2 percent of the applications are denied.

The cost of complying with section 404 averages less than 1 percent of total project value.

And finally, the section 404 program as in operation when the RIA was prepared "results in a net positive benefit to the Nation."

The RIA, however, was quickly abandoned by the Army because, I suppose, rather than uncovering the horror stories, the RIA revealed sound operation of an important Federal program. It was clear the next step in reform of the program by the Army would have to go light on the facts.

On May 7, 1982, the Presidential Task Force on Regulatory Relief announced reforms to the section 404 program. These were spearheaded by the Department of the Army. Detailed changes were specified for the memorandums of agreement, to which my

colleague, Dr. Davison, has referred. There were other mandates in the May 7 announcement, including a mandate for shortening and simplication of the EPA 404(b)(1) guidelines.

The MOA's were revised in July 1982. They essentially eliminated the opportunity for careful interagency review and for elevation of permit decisions. Specific changes are detailed in my written testimony and Dr. Davison has described them.

The effect of these changes is to discourage adoption of resource agency recommendations on environmental protection. We do not expect to see the situation improve during this administration without action by the Congress. The Presidential Task Force decisions on this matter would be overturned and replaced with a reasonable substitute by the amendment to section 404(q) that is contained in section 10 of Mr. Howard's clean water bill. That amendment, for the most part, reinstates the situation as it was before the MOA's were changed and we urge you to adopt that amendment in this subcommittee.

On July 22, 1982, the corps issued comprehensive new regulations for its permit program. The principal changes made by the regulations were the issuance of many new and revised nationwide, general permits.

We and the National Wildlife Federation and 14 other conservation and resource utilization groups believe that the corps has issued some, if not most, of these general permits in violation of the law. Furthermore, the mischief in those regulations is not limited to general permits. We feel so strongly about this that we brought suit against those regulations in the Federal District Court of the District of Columbia. That suit is active now and just yesterday the State of Alaska also filed suit against the regulations. Even as we focused our resources to redress the corps' assault on its own regulations, the EPA began its own gambit.

On March 7, 1983, EPA submitted draft proposed section 404(b)(1) guidelines to the Office of Management and Budget, requesting approval for publication in the Federal Register. Among other things, those guidelines would have deleted the existing guideline requirement that no discharge shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

This reqirement is the heart of the EPA guidelines and, frankly, concerns the heart of the 404 program—the issuance criteria for permits. Deletion of that requirement would be particularly significant because it incorporates the water dependency test to which Mr. Davison referred: practicable alternatives are presumed to exist in the case of discharges into wetlands when the activity is not water dependent—for example, when the activity concerns a shopping mall as opposed to a marina. The corps must have evidence that practicable alternatives do not exist in such cases and this requirement keeps the corps from being fast and loose on issuing permits.

The draft EPA guidelines ran out of gas when Ann Burford was replaced by William Ruckelshaus as Administrator of EPA. We do not know what formulation of guidelines will eventually show up

in the Federal Register. I think Mr. Ruckelshaus has proved himself to be better on wetlands than his predecessor.

But it is a matter of record that the Army was not happy with the March 7 proposed draft guidelines. They thought they were too restrictive. For that reason, we are extremely pleased to see the amendment to section 404(b) which is in section 10 of Mr. Howard's bill. That would make the existing practicable alternative a mandate of Congress and although the language is not stated in the bill, we assume that the water dependency test is part of what Mr. Howard intends to have be adopted by that.

On May 12, 1983, the corps proposed amendments to its July 22, 1982, regulations and those proposals would turn bad to worse. There are a whole bunch of things that the May 12 proposal does that we believe are worn and illegal. Among these are proposed changes in issuance criteria for permits, changes that would subordinate environmental factors and elevate economics in permit application review, and changes that would fundamentally further obscure the relationship between the corps' public interest review and the EPA guidelines in decisions on the issuance of permits.

Just to give you one example, in section 320.4(j)(2), of the May proposal, it is stated that the District Engineer will normally accept decisions of State, local, and tribal governments on matters such as zoning and land use, unless there are significant issues of overriding national importance, such as national security, navigation, national economic development, water quality, and national energy needs.

Water quality is the only environmental factor recognized as nationally significant. Wetlands are not mentioned. That provision could basically mean that the corps has to issue a 404 permit if an area has been zoned for development, and a permit is necessary for the development unless one of these overriding factors, not including wetlands, is present.

Besides reemphasizing the need for Congress to end the debate on permit issuance criteria by legislating the current EPA guideline standards, the May 12 corps proposals illustrate the need for another amendment to section 404 that we understand Mr. Mrazek will introduce. The EPA has filed detailed comments on the corps proposals, including objections on environmental grounds to several of the nationwide general permits, some of which the corps has proposed to issue, and some of which are now in force.

However, the EPA has declined now and often before, to use the authority given to it under section 404(c) to halt these permits in their tracks. The time has come to stop EPA from giving lipservice to environmental concerns while, in effect, condoning the environmental degradation to which EPA objects. They cannot have it both ways. The Congress should not let them object to a permit and then not use their authority to stop the permit that they think is objectionable. EPA should be required to stop it. We understand that Mr. Mrazek will introduce an amendment to section 404(c) that will do that. EPA would be required to stop discharges if they would have unacceptable adverse environmental impacts.

EPA would also be required to review petitions for exercise of section 404(c) authority and, if those petitions provided substantial evidence, but only then, that the action is warranted, then EPA

would be required to decide whether or not to implement the petitioned action. The decisions by the EPA would be reviewable in court.

We also understand that Mr. Mrazek will introduce an amendment to section 505 of the Clean Water Act, the citizens' suit provision. We urge you to adopt that as well. His amendment would simply insert the Secretary of the Army into section 505 wherever the Administrator of EPA now appears. That apparently was an oversight in drafting. Those things are never known for certain, but we know of no reason for treating the Secretary any differently than the Administrator. Our sense is that since the Administrator is in charge of basically everything else under the Clean Water Act, when that section was drafted the drafters thought of the Administrator and simply did not think of the Secretary of the Army.

If anything, the record of the actions by the Army indicates a greater need for judicial review of what they are doing than of what EPA is doing.

Section 505 limits as well as facilitates such review, but overall Mr. Mrazek's amendment would make it simpler to take the corps to court on section 505 and that would be a good thing.

In conclusion, Mr. Chairman, members of the committee, we support and urge this committee to approve a Clean Water Act bill that adopts the amendments to section 404(b) and 404(q) that are contained in section 10 of Mr. Howard's bill and we urge you as well to support amendments to section 404(b), 404(c), and 505 that are being offered by Mr. Mrazek.

Nearly one-half million acres of wetlands are lost each year, a large share from dredge and fill activities. Wetlands are integral to preservation of the physical, chemical, and biological integrity of our Nation's waters. That preservation is the objective of the Clean Water Act, and the specific province of section 404. The time has come for the Congress to reinstruct the corps on these fundamentals.

Thank you.

Mr. ROE. Thank you.

Mr. Hayden?

Mr. HAYDEN. Thank you. I appreciate the opportunity you are affording for presentation of the views of the International Association of Fish and Wildlife Agencies on the issue before you today. To understand the position that I am going to outline, a word may be in order as to the makeup and mission of the organization.

We date back to 1907, to the days and philosophy of Teddy Roosevelt, and during our involvement in the ensuing years, we have been consistently committed to the cause of resource conservation and management in a balanced way. I emphasize the term "balanced," because that is the thrust of the presentation that we will be making today that we do not object to changes in the 404 regulatory program so long as they can be implemented and accomplished in a way that allows the resource needs to be addressed.

But we feel very strongly that the changes that have been proposed up to this point by the Assistant Secretary of the Army, and that were initially outlined in the advanced notice of proposed rulemaking by the EPA do not meet that criteria.

Getting back to the matter of the IAFWA's makeup, our membership includes the fish and game agencies in each of the 50 States and Puerto Rico, as well as Federal and provincial organizations involved in related activities in the United States, Mexico, and Canada and most recently the addition of an agency in Costa Rica.

With that sort of constituency, you could understand the interest we have in the matter that is now before you. We do fully support the 404 provisions that are included in Mr. Howard's bill. We commend the initiative that he has demonstrated in seeking to correct defects in the current regulatory reform proposals, and we find his proposals very welcome as a positive approach to a program and problem which has been addressed only in a negative fashion from other quarters.

You will want to know that both of the specific provisions that are included in H.R. 3282 for that purpose have been endorsed by the international association in addressing these matters previously, and most of my comments this morning are going to be directed to a chronology of the positions that the international has undertaken on this entire issue over the period of the past 20 months.

The most recent action that we took was at our annual meeting in Milwaukee in mid-September, when our executive and legislative committees did indicate support for the initiative that is outlined in Mr. Howard's bill.

As far as the chronology is concerned, it dates back to March 28, 1982, just a few weeks after the Assistant Secretary Gianelli had announced his initial recommendations to the President's Task Force on Regulatory Relief. We took exception to them at the time in a statement by the association at Portland, Oreg., and followed that up with a letter of April 7, 1982, to Vice President Bush in his capacity as Chairman of the President's Task Force. In it we cited the reasons that we felt that Mr. Gianelli's proposals had gone beyond the original intent and mission of the task force, and asked that they be substantially revised or withdrawn.

On August 19, our then president, Mr. Charles Fullerton of California, wrote on behalf of the association to the Secretary of the Army, listing our objections to the interim final regulations that had been announced on July 22. One of the chief objections we raised at the time was a concern over the proposal for use of nationwide permits for dredge and fill which we felt would severely constrict the geographical coverage of the section 404 program.

If you will indulge me, I will read a paragraph from that letter which bears on that point:

> As now proposed by the corps, the nationwide permit plan would allow disposal of dredge and fill material in the nontidal rivers, streams and adjacent wetland areas above the headwaters and all other nontidal waters that are not part of this surface tributary system to interstate navigable waters. The vast majority of the States have no effective dredge or fill regulations to replace Federal controls which would be eliminated under such nationwide permits.

Proceeding with the chronology, the association on September 21, 1982, at its annual meeting in Hilton Head, S.C., adopted a formal resolution expressing additional concerns over the the July 22 interim final regulations and a further concern over the action of the EPA taken on August 23 of that year requesting comments on pos-

sible changes in the 404(b)(1) guidelines. I offer that resolution for the record, if the chairman will allow it.

Mr. ROE. Without objection, so ordered.

[The resolution referred to follows:]

RESOLUTION NO. 3 ADOPTED BY THE INTERNATIONAL ASSOCIATION OF FISH AND WILDLIFE AGENCIES AT ITS 72ND ANNUAL CONVENTION, HILTON HEAD ISLAND, S.C., SEPTEMBER 21, 1982

THREAT TO WETLANDS PRESERVATION

Whereas, wetlands are critical to the survival of many fish and wildlife species, the maintenance of water quality, groundwater recharge and flood control;

Whereas, about one-half of the original 150 million acres of wetlands in the coterminous United States have already been destroyed.

Whereas, continued protection of wetlands is critical to meeting obligations of the United States under migratory bird treaties;

Whereas, interim final regulations for the Section 404 program published in the Federal Register on July 22, 1982, and made final on August 23, 1982, authorized nationwide permits allowing discharge of dredged and fill material into nontidal rivers, streams, lakes and adjacent wetland areas above the headwaters and into isolated nontidal waters;

Whereas, these nationwide permits would provide virtually no protection to millions of acres of prime aquatic habitats, including prairie potholes and other vital links to the international migrotory flyways systems;

Whereas, these nationwide permits would provide virtually no protection to millions of acres of prime aquatic habitats, including prairie potholes and other vital links to the international migratory flyways systems;

Whereas, on August 23, 1982, the Environmental Protection Agency requested comment on its Section 404(b) (1) guidelines, and asked whether the jurisdictional scope of Section 404 should be changed or the existing presumption against discharges into wetlands "retained, revised or eliminated";

Now, therefore, be it resolved, That the International Association of Fish and Wildlife Agencies requests the Administration and Congress to retain application of the Section 404 permitting process to all waters of the United States, including wetlands, as currently defined in the Section 404(b)(1) guidelines, and to retain and apply rigorously the existing presumption against discharges into wetlands;

Be it further resolved, That the nationwide permits for discharges into nontidal rivers, streams, lakes and adjacent wetlands above the headwaters and into isolated waters should be revoked and that permit applications for discharge of dredged or fill material into these areas be considered on an individual basis to insure needed protection of these critical natural resources and associated values.

Mr. HAYDEN. The next step was our entry as an amicus curiae in the December 22, suit filed against the Secretary of the Army and the Administrator of EPA in U.S. District court for the District of Columbia, by the National Wildlife Federation and other associated organizations. As you have heard this morning, that suit is still in active litigation.

Last March 20, at our meeting at the North American Wildlife and Natural Resources Conference in Kansas City we took a specific position in opposition to the EPA advanced notice of proposed rulemaking which had been announced on August 23 of last year, but which has never proceeded beyond that point. It is my own personal feeling that those EPA revisions of the section 404(b)(1) guidelines may not ever see the light of day. That is only an impression from conversations with people who have some knowledge and information about the matter.

Then there comes the question of the May 12 additional regulations proposed by the Department of the Army for the section 404 program. Our response to that has also been negative, both in the

name of the association and in representations from the individual States.

I can report to you that 38 out of the 50 States filed exceptions during the comment period to one or more of the provisions in the May 12 proposed notice of rulemaking. That was followed up by participation in a hearing by the Corps of Engineers on this subject on October 12. Six individual States as well as the association presented testimony in that hearing.

It is now my understanding that any final rule on the May 12 proposals will be delayed until at least the end of December and perhaps well into the new year.

There is some question as to how much they may be changed from the original form, but I certainly believe that those offering them are beginning, to some degree, to understand the level and the strength of the opposition to some of those proposals.

As I said at the outset, Mr. Chairman, our position has been at all times that we did not object to a rational, balanced approach to this problem and changes which would affect and accomplish an improvement in the operational efficiency of the section 404 program so long as it could be done without damage to priceless resource facilities. That remains our position.

One other point that I would make. Mr. Mrazek's proposed amendment just came to my attention this morning. I could not speak officially for the association at this point, because it has not been brought to the attention of our legislative committee. I believe, however, that as outlined we would find his suggestions quite acceptable.

We look forward to working with you and your subcommittee in your examination of the section 404 problem and finding a practical solution to it and we appreciate the chance to share our organization's views on it with you.

Thank you, sir.

Mr. ROE. We want to thank you very much for all of your testimony. I think you have clearly brought into focus the areas of concern, and also some refinements to some of the proposals that Mr. Howard has made in this legislation.

The Chair would defer to the gentleman from Arkansas.

Mr. HAMMERSCHMIDT. Thank you, Mr. Chairman.

Mr. Brown, on page 7 of your written statement, you discuss the fact that the Environmental Defense Fund and other conservation organizations have filed suit challenging the corps' July 22, 1982, regulations. I wonder if you could provide us with an update on the status of that litigation.

Mr. BROWN. I would be delighted to. We have had two or three status conferences with the judge. Litigation was filed on December 22, 1982, almost 11 months ago, and shortly thereafter we filed a motion for summary judgment on the principles claims in the lawsuit.

The foremost single claims were against the headwaters and isolated waters general permits on the grounds they had excessive environmental effects and also they——

Mr. ROE. I did not hear you.

Mr. BROWN. Excessive environmental impacts and also on the grounds that they encompassed activities that were not similar in

nature as required by section 404. Those permits authorize somewhere around 100,000 discharge activities in the waters of the United States each year, essentially without regulation, and we have ample evidence that many of those activities are deleterious.

The Government filed a motion to dismiss shortly thereafter. It was not until last summer that we heard from the Court and since then we have had, I believe, three status conferences. It may be two. We have been discussing the possibility of settling the case with the Government, and also with an array of intervenors who have intervened in the case. They include the American Petroleum Institute and 6 oil companies, 15 phosphate companies——

Mr. ROE. Can you pull your microphone forward?

Mr. BROWN. We have been discussing settlement with the Government and the intervenors in this lawsuit for several months now. I was enumerating the intervenors. They include the American Petroleum Institute, a number of oil companies, phosphate companies, just about all of the utility companies of the United States, the National Coal Association, the American Mining Congress, and others. We think there is a good chance that we can settle the case.

We have prepared a 15-page agreement which has 26 paragraphs in it that address the principal issues. We have reached some agreement with at least some of the Government lawyers and our lawyers on one package that the Government would seem to be willing to recommend to their superiors and that we would endorse.

I think it probably would not be a good idea to go into the details of the agreement at this point, because I think there is still too much uncertainty as to which player may appear and turn over the applecart. I guess the bottom line is we are discussing settlement, and we think there is a pretty good chance we can reach a settlement with the Government. I think the odds are greater than 50-50 that we will. A lot of uncertainty turns on whether Mr. Giannelli will agree to what his attorneys recommend to him and that is very hard for us to predict.

We expect to have the agreement signed in the next 5½ weeks or not. If we succeed, then the settlement agreement itself will call for the issuance of new regulations. They would be proposed first. They would be the subject of public comment. The corps would not in a final way commit itself to anything, nor would we agree to walk away from the lawsuit until we saw the final regulations.

Suppose that the agreement is approved 6 weeks from now. The way it would work is that final regulations would be issued somewhere about a half year later. If the regulations did the things that the agreement says, we would dismiss our suit. Nothing would happen as a final matter until about half a year from approval of the agreement. If we fail in those discussions, we intend to go back to the court and to press for a ruling of the judge on our summary judgment motion and their motion to dismiss as well. We would be talking about 6 months, certainly, until we get some sort of a ruling out of the court on that.

Mr. HAMMERSCHMIDT. You view the proposals you made for now as privileged information and you would not want to make it public because it might upset the negotiation process?

Mr. BROWN. I would be grateful if the chair and you were to let us treat them in that way.

Mr. HAMMERSCHMIDT. Well, if you think there is any way that this committee would properly be helpful in that negotiation, that might be a possibility. I am not sure that is within the realm of possibility or whether it is proper.

Mr. BROWN. There is one point. If we do succeed in reaching an agreement that we can sign and that is recommended to Mr. Gianelli, at that point it might not be improper at all for some expression of position on it, because I think it would be a political matter at that point.

Thank you.

Mr. HAMMERSCHMIDT. Thank you, Mr. Brown.

Mr. Davison, on page 6 you express the opinion that regulations proposed by the corps on May 12, 1983, would "define terms within the definition of wetlands so that approximately two-thirds of the wetlands in the coterminus States would be excluded."

Would you expand on this statement for us? More specifically, what terms are you referring to and how is it that you believe the proposed definition would affect these terms?

Mr. DAVISON. I would be happy to. The term that I was referring to specifically is prevalence of vegetation; which appears in the definition of wetlands. In the May 12 proposed regulations, Army defined this hitherto undefined term to mean those rooted emergent plants that comprise at least 50 percent of the dominant species within a plant community. Rooted emergent plant refers to things like cattails, bullrush, not woody species. The Fish and Wildlife Service, in its recent inventory—its recent status and trends report on the status of wetlands in the lower 48 States—estimates that about 66 million out of the 99 million acres of wetlands in the lower 48 States are not dominateed by emergent plants, that is, ⅔ or our wetlands are tree swamps, shrubby wetlands along the Carolina coast, bogs, tundra and a wide whole variety of other kinds of nonvegetated wetlands. That is where that estimate comes from.

Mr. HAMMERSCHMIDT. That is the Fish and Wildlife Service number. Is that correct?

Mr. DAVISON. Right.

Mr. HAMMERSCHMIDT. Mr. Chairman, I just have one more question.

Mr. Brown, on page 12 of your written statement you discuss Mr. Mrazek's section 404(c) amendment requiring EPA to stop dischargers that would have an unacceptable adverse environmental impact.

What do you believe would or should constitute an unacceptable environmental impact for purposes of this provision? How should it be defined?

Mr. BROWN. I have not thought about that in great detail, but I suppose that EPA could use the same kinds of standards which are now described in the EPA section 404(b)(1) guidelines, for judging whether significant degradation of the Nation's waters would occur. Under those guidelines, failure to meet that standard is the basis for a denial of a permit. The guidelines themselves are quite detailed.

Mr. HAMMERSCHMIDT. Mr. Brown, it would be entirely acceptable to the committee if you would supply that for the record, if you want to give it some more thought.

Mr. BROWN. Thank you.

[See letter supplementing testimony, p. 2126.]

Mr. HAMMERSCHMIDT. Let me say, the panel you brought with you has very detailed comprehensive testimony supporting your position.

Mr. ROE. Are there other questions?

The gentleman from California.

Mr. PACKARD. Perhaps one, maybe two.

Mr. Davison, I am confused a little bit. In your written statement—there appears to be a contradiction and I just need some clarification.

On page 21 of your statement, in the second paragraph, you indicate that only 17 percent of all of the permit applications received by the corps are for activities in nonnavigable waters.

However, in the preceding paragraph you suggest that the effect of H.R. 1570—which would limit the scope of section 404 permit program to waters navigable in fact, historically navigable, or in fact capable of becoming navigable—would remove from Federal protection under section 404 the vast majority of the Nation's wetlands, perhaps 126 million of the 148 million acres currently covered.

That seems to be a little bit of a contradiction. Would you clarify that for us, please?

Mr. DAVISON. I would be happy to. The statement as to the waters that would be regulated under section 404 and the changes H.R. 1570 would make if enacted, would be in the extent of the waters that are covered by the program. Now a lot of those waters are covered, for instance, presently under nationwide permits. There are two such nationwide permits, one for isolating lakes and wetlands, and one for waters above the headwaters or streams, which do not require individual permits. There is a great deal of activity going on there under the nationwide permits. So the amount of individual permitting in wetlands other than those adjacent to navigable waters is a relatively small percentage of the total permitting.

Mr. PACKARD. Thank you.

I think that is sufficient, Mr. Chairman.

Mr. ROE. Any further questions?

Let me ask one question that is puzzling me.

In the water resources development legislation which we have been working on for a year and a half, we recognized one basic issue, that the corps was the lead agency and received their input from the different agencies, Wildlife and so forth, into the environmental impact statement situation—and then when that came full circle, it came back to the corps to review that data and then make their findings. There was not any other mechanism available, at least that we could see, other than the courts. If Congress approved a particular project to be built as a Federal project, or a combination of Federal, municipal and State project, flood control, resource control, hydropower, whatever the issue may be, that they did not re-review, the committee did not re-review the content of the envi-

ronmental impact statement, although they did look at growth errors that may arise. We felt this to be quite a fallacy in the whole program, and that was borne out as we got into the different 2,720 projects that were planned for developing.

So they were case histories of project development in the interest of the public.

Then we go back to the comments that were made by Mr. Hayden, where we talked about a rational, balanced program. Now it seems to me, rational, balanced program as compared to what? What we did in the water resources development bill, we analyzed those areas and we created a new mechanism and we came back and said in these instances where the applicant would have to submit, or the Corps, would have to submit that data back to the committee, the committee could re-review and make a determination if there was some intrusion that emerged as the project was unfolding.

It seems to me when we are talking about section 404 permits and we are talking about a reasonable, balanced program. That puzzles me a bit, because I do not know if we can approach a reasonable, balanced program, or whether we want to.

The committee is saying there are some areas we want to call to Congress attention, in mitigation, for example. It is very expensive. But we believe, from a committee's point of view, that those issues should be looked at by Congress, and if it is going to cost $100 million to correct that to provide for intrusion within the public interest, we are responsible to be able to provide that kind of mitigation that is necessary.

In order to implement that further, we set up the Environmental Development Revolving Fund so we can protect those sensitive areas immediately upon a determination by Congress to authorize a particular project and giving the Corps the immediate right to enter into or acquire or preserve those lands so someone in the process did not go in and cut down all of the hardwoods. We mitigated and saved all of the hardwoods, but there was not a mechanism to go ahead and move those areas, then private enterprises come in and cut down the trees, so finally when the mitigation plan could be implemented, when Congress could move with the funds, the whole thing would be lost in the battle.

With that recognition, what is puzzling me, we are talking about allowing intrusions under the section 404 permit situation. We evaluate that but we are allowing intrusions.

I am saying what about trying to establish a mechanism that says if it is a sensitive wetlands area, that it ought to be preserved in the public good. We have provided for that in the clean water bill. There were 1,700 acres of wetlands in the Mobile Harbor project, and at the point of dredging the material, were you either to dump that dredge material on those 1,700 acres, or at a cost of about $30 to $35 million more, take that material out, which appeared to be a better environmental decision, and dump it into the Gulf of Mexico? Is that a reasonable disposition for someone to make on the basis of protecting those 1,700 acres?

Happens to be from all of the reports we have received, the 1,700 acres was the only 1,700 acres left in that area.

We have recommended that to Congress. Albeit it is a very expensive decision to make. We assumed on the basis of the facts it is the right decision to make, but we are hoping Congress will sustain that.

Have you thought further beyond the point of view of the regulations and all of the things we are talking about?

Should we be saying to the American people that the whole purpose of the section 404 is to make a balanced judgment, but where there are sensitive wetlands that should not in any circumstances be allowed to be degradated or destroyed, should there be some process where they should be protected in the public good in perpetuity?

Then it comes down to do we have the right under the Constitution to in effect come back and say we are taking—extinguishing private ownership without due process under the law.

Are you with me so far?

Mr. DAVISON. Yes.

Mr. ROE. I think it would be helpful to the committee, we are talking about a process in an adversary situation, as to whose judgment prevails versus the point of view of what is the right thing to do. I would like you to review part of your thought process and go beyond this amendment and that amendment to the next 5,000 years, if we live long enough, and come back and say should we be taking a gutsy approach and say if these wetlands are that critical to the environment and that critical to the receiving waters, that they should not be defiled at all.

Would you like to comment on that? It is a long statement but it has to be put in for continuity.

Mr. DAVISON. I guess I would just briefly.

I think that it is difficult to set aside ahead of time some x number of acres of wetlands that ought to be protected. For one thing, we do not have an adequate inventory of the Nation's wetlands and we do not have adequate knowledge about the contributions provided by those wetlands.

What I am saying is I do not think we have the adequate knowledge base to say that—in some cases, we do. But I do not think overall we have adequate knowledge to write into law that these wetlands ought to be protected and these wetlands should not. The destruction of wetlands in this country results from a tyranny of small decisions. If, for example, you look at 404 permits, most are for small acreages.

Mr. ROE. That is precisely on target, the point I am making. It has been a series of small decisions that have created the purpose—your concern, your organization's concern on the millions of acres being destroyed on a national basis. So we are caught in the middle of small decisions that are creating the problem, but we have not looked at a solution where the big decision is.

But, go ahead.

Mr. DAVISON. I would suggest strengthening EPA's role in section 404—the EPA already has the authority to interpret 404(c) to say, no, this wetland should not be developed at all, we should not be talking about reasonable development in this wetland, we should put it aside.

Mr. ROE. I know that is in the law. But that is not what has happened and that is what the concern is.

Mr. DAVISON. I agree, and that is what attracts me to what Mr. Mrazek may be introducing, which would put an affirmative burden on EPA to exercise the authority that they have under 404(c), which they have only exercised one since 1972. I think one avenue to take would be to try to increase EPA's involvement in the oversight of wetlands permitting. Certainly in some wetlands, with some kind of development, development can occur in a manner that is compatible with preservation of the wetlands.

In other types of wetlands, or other kinds of development, that is not going to be the case, and I think we ought to set those areas aside. But the only way I see to do that at the present time, although I would be happy to think about this a lot more, is to deal with that on a case-by-case basis. I do not see any way with our present knowledge of the inventory of wetlands in this country or the relative importance of those wetlands to make that judgment ahead of time.

Mr. ROE. Then how can we decide about a rational sound program? For example, in the Delaware Bay, Dr. Haskins is doing some of the most advanced work in the area on oysters. I happened to be down there the other day. The level of salinity and flow in the Delaware River has a bearing on the environment for those oysters to propagate and whether they are going to survive or not The situation was an almost untraceable toxic coming out of a particular plant. That plant had met every standard but nobody had asked the oysters. They literally destroyed parts of that bay because that whole ecosystem and man's intrusion was not being monitored properly.

The question I am trying to get at it seems some place down the line, if we are going to nail down this wetlands situation, what should we be doing, do we need more inventories, more studies, more blanket authority—I am not sure I want to entrust all of that to EPA, to be perfectly blunt about it.

Mr. DAVISON. I will yield to Dr. Brown because I think he has some comments that would be useful on this. But I would say, yes, we do need to complete an inventory. The present Fish and Wildlife Service inventory of wetlands in the coterminus States is about 26 percent complete. That is, that amount of the 48 has been flown and mapped and inventoried. We do need to complete that. I think there are a lot of other improvements that could be made in Army's implementation of the program; to accept EPA's definition of fill to recognize the need to protect the full range of wetlands, and to get them to exercise their authority as well as to give greater attention to the views of the resource agencies on permit decisions. And perhaps we should be seeing more permit denials.

Mr. ROE. Mr. Brown?

Mr. BROWN. Mr. Chairman, it seems to me there are several things to observe in response to, I think, your very astute question.

In the first place, we have to acquire wetlands, the ones that are the most important, and there are programs to do that but they are not as strong as they should be. There is legislation which has been approved by the Environment and Public Works Committee in the Senate and in a somewhat different form by the Merchant

Marine Committee in the House—the Emergency Wetlands Protection Act of 1983. I am sure it will be 1984 before it becomes law.

The basic purpose of those bills is to raise money for the acquisition of wetlands and the bills are crafted so they would not just apply to wetlands that are habitats for migratory waterfowl, which long has been an important focus, but to protect water land ecosystems more broadly. Support for that is one way to address your question.

I have perceived the 404 program as the other way to address wetlands protection. We do not have enough money to buy everything, but we can still help protect wetlands by regulating their use. I think there probably should be more permit denials, but I think probably the heart of the 404 program is in conditioning, in mitigation of actions, which often relate to the way that an activity is conducted.

The corps' RIA that I referred to evaluated the effect of the section 404 permit process on the amount of wetland acreage that would be destroyed by permitted activities. The RIA estimated the wetlands acreage that would be destroyed assuming that the activities would be conducted as the applicant proposed, and then compared this with the amount of wetland acreage that was in fact destroyed through the activities after permits were issued, and the permits themselves had been conditioned. The RIA found that the amount of acreage lost was cut about in half. So that is an important positive thing.

Mr. ROE. Did they then speak to mitigation?

Mr. BROWN. It depends on what one means by mitigation. I think most of the wetlands savings was not related to acquisition, including offsetting of destruction by acquisition of other acreage away from the site, but related instead to modification in the way that the activity was conducted. The Army's commitment to mitigation, including acquisition such as up-front buying wetlands or requiring the applicant to buy wetlands, however, is problematic. Your support for Mr. Howard's 404(b) amendment would help on this because the EPA 404(b)(i) guidelines now contain a provision for mitigation. They require the adoption of any reasonable measures to mitigate, although no money is necessarily available. I think that part of what you were asking is whether the Congress should provide some sort of fund that the corps could tap to lead it to mitigate more. But, number one, the codification of the (b)(1) amendments would help. The corps has been resistant to mitigation, and I think the EPA guidelines, if the Congress endorsed them, would push the corps toward more mitigation.

One thought that came to my mind when you were talking is whether it might be advantageous to have a fund which could be readily tapped, set up by the Congress, which would be available for the corps in mitigating the impacts of activities that it permits under 404.

Mr. ROE. We have done that. We have a $35 million revolving account in the omnibus bill. I am wondering if we should have something in this bill.

Mr. BROWN. I am not sure what funds the corps can tap.

Mr. ROE. We set up a special fund that would be set up as a revolving fund that they can tap on any environmental issue that

they felt was necessary to move at any one point, and the fund would be replaced from money allocated to the project.

Mr. BROWN. As you define that fund, it is available to the Corps for section 404 activities?

Mr. ROE. For those projects. But you have thousands of permits being requested in the 404.

Mr. BROWN. It seemed to me it probably would be useful under section 404 to be able to tap funds for mitigation on piecemeal little projects. It seems to me that probably would be a good idea. Money is tight however.

Mr. ROE. I do not want to take everybody's time.

If you take a little piece here or there, that does not put the whole thing in focus. I do not think you can write a perfect piece of legislation. But we know the problem exists, and we are nipping away at the fringes because we have not come to grips. If we are talking about priorities, and forgive me for making a speech, if we are talking about priorities in the environment, then we have to identify the priorities and say to the Congress of the United States we are going to spend our life in court and not achieve it, because you could not go that many cases amicus curae. There are that many permits. It is a policy decision you are trying to get in a better fashion. Is that unreasonable?

Mr. BROWN. No, it is not unreasonable, and I share the desire of many to be a hero.

As we see it, we have got to raise all of the money we can for wetlands. We need to identify priorities obviously, the money should be spent on the greatest priority wetlands. We have been pushing for every device conceivable.

Mr. ROE. We both agree that what we have suggested is not perfect. All I want to do is stimulate your thought processes.

We have not finished writing this bill and I have listened intensively to the particular amendments you refer to. You referred to Mr. Howard's bill and Mr. Mrazek's amendments. I am trying to get you to think big. What do we do next? Then we have to go through the corps, how it is going to be interpreted, and who is the Administrator, and whatever happened from May 15 to November 15, I do not mean it irresponsibly or irreverently. I do not mean it that way. All I am saying is do you think you have attacked the problem big enough in the magnitude of the problem we are facing? I would like you to think about it.

Are there any other questions?

I would like to thank you very much for your thought-provoking testimony. It has been excellent and we would like to hear from you further and particularly look into that environmental fund because I think that is one of the key issues we have to start dealing with.

Thank you very much.

[Subsequent to the hearing, the following was received from Mr. Brown:]

ENVIRONMENTAL DEFENSE FUND,
November 29, 1983.

Hon. ROBERT A. ROE,
Chairman, Subcommittee on Water Resources, Committee on Public Works and Transportation, Rayburn House Office Building, Washington, D.C.

DEAR MR. ROE: I am writing to address the two questions asked of me by Members of the Subcommittee on Water Resources when I had the pleasure of appearing before the Subcommittee on November 9, 1983.

QUESTION 1

The first question, posed by Mr. Hammerschmidt, asked for clarification of the meaning of "unacceptable adverse effect" as used in Section 3 of H.R. 4393, a bill introduced by Mr. Mrazek.

The "unacceptable adverse effect" standard is already contained in Section 404(c) of the Clean Water Act; the amendment set forth in Section 3 of H.R. 4393 would not change that standard in any way. H.R. 4393 would change Section 404(c) by making use of that authority non-discretionary when the Administrator of EPA had determined that an unacceptable adverse effect would result from any discharge. H.R. 4393 also would establish a mechanism pursuant to which the Administrator of EPA could be petitioned to exercise the Section 404(c) authority.

The meaning of "unacceptable adverse effect" under Section 404(c) is defined as follows in current EPA regulations found at 40 C.F.R. § 231.2(e):

> "unacceptable adverse effect" means impact on an aquatic or wetland ecosystem which is likely to result in significant degradation of municipal water supplies (including surface or groundwater) or significant loss or damage to fisheries, shellfishing, or wildlife habitat or recreation areas. In evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the Section 404(b)(1) guidelines (40 CFR part 230).

The preamble of the EPA regulations (44 Fed. Reg. 58078, October 9, 1979) briefly discusses this definition. The preamble states: "The term 'unacceptable' in EPA's view refers to the significance of the adverse effect—e.g. is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford." The preamble also states:

> [O]ne of the basic functions of 404(c) is to police the application of the 404(b)(1) guidelines. Therefore, those portions of the guidelines relating to alternative sites may be considered in evaluating the unacceptability of the environmental impacts. . . . . Of course, even when there is no alternative available, and "vetoing" the site means stopping a project entirely, the loss of the 404(c) resources may still be so great as to be "unacceptable."

The "relevant portions of the Section 404(b)(1) guidelines" referred to in 40 C.F.R. § 231.2(e) are thus those that address whether alternative discharge sites are available and whether a discharge will result in significant degradation of aquatic resources or otherwise will have an impact that an ecoystem cannot afford. These provisions are contained in Subpart B, entitled "Compliance with the Guidelines," and in the other portions of the guidelines referenced therein. In addition to setting forth standards for restrictions on discharge, these provisions describe in detail the factual determinations, evaluations, and tests that are to be followed in making a judgment on whether discharges comply with the guidelines. The meaning of "unacceptable adverse effect" has not, and probably cannot, be defined in a way that removes all uncertainty from determinations under Section 404(c). The detailed procedures of the EPA 404(b)(1) guidelines, however, ensure that all relevant factors will be considered in detail before the EPA Administrator may prohibit or restrict discharge under Section 404(c).

QUESTION 2

The second question, posed by yourself, asked whether creative thought might produce a new legislative mechanism that would arrest the piecemeal destruction of wetlands now occurring. You suggested that such a mechanism might be designed to enhance our capability to protect certain priority wetlands completely. Your question is as difficult as it is important, but I will summarize a few thoughts on the matter for consideration by the Subcommittee.

The Congress can protect wetlands from conversion to other status by providing for direct regulation of activities that are destructive to wetlands or by adjusting factors that serve as incentives for destruction or for protection.

Destructive activities may be regulated with varying degrees of comprehensiveness. Outright government purchase of property interests has provided the most substantial and enduring protection, and the Congress should enhance our national capability to acquire such interests. Legislation for this purpose, entitled the Emergency Wetlands Resources Act (H.R. 3082; S. 1329), has been approved by the committees with principal jurisdiction in the House and Senate and now awaits further action by the Congress. These bills, particularly the Senate version, would significantly augment revenues available for acquistion of property interests in wetlands. Even under the most optimistic scenarios, however, with ten-year funding approaching one billion dollars, such legislation would only provide for acquisition of enduring property interests in one or two percent of the remaining wetlands in the United States.

Well into the 21st century, effective governmental protection of the wetlands will depend primarily on regulation and other initiatives that do not entail the cost of compensating owners for acquisition of governmental property interests. Although generally less intensive than acquisition in degree of protection provided for a given area, such initiatives potentially can have immediate, beneficial effects for a large portion our nation's wetlands.

The Section 404 program of the Clean Water Act is most important federal regulatory program for protection of wetlands. A 1981 Corps regulatory impact analysis on its permit program estimated that Section 404 has reduced wetland loss by half in the 48 contermious states, amounting to over three hundred thousand acres saved each year. More recent estimates of wetlands loss suggest that this figure may underestimate the value of Section 404. The Section 404 program accomplishes that reduction almost entirely through modification—rather than prohibition—of discharge activities.

The most needed amendments to Section 404, as the program is now conceived, are those that would better ensure that potential discharge activities are carefully weighed against the criteria of the current EPA Section 404 (b)(1) guidelines and are not allowed if inconsistent with those criteria. The amendments to Section 404(b) and 404(c) in H.R. 3282 and H.R. 4393 would accomplish this purpose. The Section 404(b) amendments would prohibit discharges for which there exist practicable alternatives with less adverse environmental impact. This standard, which incorporates the "water dependency" test in the case of discharges into wetlands, is the heart of the issuance criteria for Section 404 permits.

Enactment of the Section 404(c) amendment of H.R. 4393 would prompt use of the authority of the Administrator under this subsection and could significantly improve our national ability to limit piecemeal destruction of wetlands. Section 404(c) authorizes the Administrator not only to "veto" the issuance of any particular Section 404 permit but also to prohibit in advance the issuance of such permits within any "defined area." In other words, the Administrator is in a position to systematically identify wetlands of particular significance and of special sensitivity to the effects of discharge activities and to place those wetlands off limits to such activities.

The Clean Water Act does not regulate all activities that are destructive to wetlands. Some draining and clearing, for example, may not entail discharge of dredged or fill material yet can be very destructive. It would be good for wetlands if such destructive activities were brought within the scope of federal regulation. EDF has not pressed for this expanded authority for pragmatic reasons. We do not believe that amendments of this kind would be passed by this session of Congress, although we would enjoy being proven wrong. The Section 404(b) and 404(c) amendments would bring into operation the broadest restrictions on destructive activities that I believe are currently feasible and that are possible without acquisition of property interests and the associated cost of compensation. Coupled with the pending Emergency Wetlands Resources Act (S. 1329; H.R. 3082), these are the "big ideas" that you are seeking in this session of Congress.

In addition to new authority for acquisition and for regulation of destructive activities, our nation would profit from legislation that would create incentives for protecting wetlands and would remove subsidies for destruction. The Emergency Wetlands Resources Act would direct a study of the degree to which federal subsidies contribute to loss of wetlands and would require the Secretary of the Interior to provide the Congress with recommendations on whether such subsidies should be modified. The chairmen of the House and Senate committees that developed that wetlands legislation also have expressed an interest in review of tax legislation to determine whether amendments can be developed that would enhance wetlands protection. These amendments could create incentives for protection (e.g. through allowance of deductions for gains on the sale of wetlands subject to conservation easements) or could remove provisions that contribute to destruction (e.g. deductions

from business income of the expenses incurred in draining wetlands). All of these initiatives are extremely important and we look forward to assisting their sponsors in developing the legislation. However, passage of such legislation probably will not come in this session of Congress and the package would be separate from Section 404 and the Clean Water Act.

Thank you for the opporunity to provide these views and those presented in my testimony of November 9, 1983. I would be grateful if you would include this letter in the hearing record as a supplement to my testimony.

Sincerely,

WILLIAM Y. BROWN,
Senior Scientist and Attorney.

Mr. ROE. Next we have Mr. James Banks and Ms. Frances Dubrowski from the Natural Resources Defense Council.

We want to welcome both of our distinguished representatives representing the Natural Resources Defense Council. We have your statements which will appear, if there is no objection, in full in the record at this point.

[Statements referred to follow:]

NRDC
Clean Water

Statement of

James Taylor Banks
Senior Attorney

on

Reauthorization of the Clean Water Act

before the

Subcommittee on Water Resources

of the

House Committee on Public Works and Transportation

November 9, 1983

Introduction

We welcome the opportunity to share our views of various Clean Water Act amendments with this Subcommittee, and particularly appreciate the expeditious pace with which the Chairman is conducting these hearings. As always, we look to this committee's leadership in maintaining and improving the policies and provisions of this vital statute.

There are a number of sound, important amendments under consideration here and in the Senate. It is time to do something with those ideas, and we urge you to move toward a mark up as soon as possible.

In our view, the best collection of proposals put before this body thus far is HR 3282, offered by Committee Chairman Howard. We strongly endorse Mr. Howard's bill because it addresses a number of important concerns about recent administration of this Act, and because it says "no" to damaging proposals floated by EPA and others, such as the so-called pretreatment "opt out."

At the same time, it is apparent that HR 3282 can be improved. The bill does not cover anti-backsliding and non-point source controls, for example, and we believe both of these issues must be addressed by the House.

This statement focuses on two broad areas of concern that have arisen within the reauthorization process: the BAT program

for toxics, and the related subjects of water quality standards and post-BAT toxics control. These matters deserve your close attention and careful consideration in the days ahead.

Other questions and proposals should be noted at least in general terms, however, and the most important of these is construction grants funding. In July 1981, we came before this Subcommittee during its consideration of major reforms to the grants program. In the wake of Mr. Stockman's budget cutting fervor, I must admit to having felt lonely as a representative of a minority that urged Congress to stick by its commitment to a sizeable and meaningful federal financial commitment to municipal sewage treatment.

We argued then, and re-emphasize today, that the program should not be viewed as a failure, despite the GAO's repeated attempts to demonstrate otherwise. The program was (and is) simply not finished, and can never be expected to produce the results Congress envisioned for it without continued federal support. Under the 1980 needs survey, backlog needs for secondary treatment, advanced secondary, and new interceptors were estimated at over $55 billion. Subtracting reserve capacity left in excess of $30 billion, of which $24 billion would be the federal share at a 75 percent matching rate. Our anlaysis demonstrated that, because of inflation, meeting these needs ultimately would cost approximately $53 billion and take over 20

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years. We objected to cutting the program's appropriation because it made no sense to take longer and pay more than necessary to curb municipal pollution.

Accordingly, we are encouraged that HR 3282 proposes to restore the Construction Grants appropriation for fiscal years 1984 and beyond. We are not encouraging the Committee to revisit all of the 1981 reforms, even though we disagreed with some of them at the time, because disruptive changes would only stand in the way of continuing progress. But we emphatically urge you to support an increase in the funding level because it is smart for pollution control and, in the long run, smart for the federal budget.

This and other issues could occupy many pages of written testimony and more hearing time than this Committee can afford. In the discussion below, we turn instead to two of the most important areas you must consider.

Best Available Technology

As this Committee thoroughly understands, "best available technology" (BAT) is the centerpiece of the Act's toxics control strategy. BAT is the principal regulatory tool for addressing toxic industrial discharges, and has been used successfully by EPA to control dozens of industrial categories. It is a flexible tool that demands only those treatment strategies that are

available and affordable. It asks industry to do what is reasonable, and therein lies the secret to its effectiveness.

From the hearings conducted last summer, it is apparent to me that this Committee continues to support the BAT-toxics strategy, and intends to maintain the integrity of EPA's program while making only such adjustments in the compliance timetable as are shown to be necessary. EPA's program has made great progress toward completing the strategy; now is not the time to chart a new course or to restructure EPA's approach. We hope and trust that the Committee will see this program through to a successful conclusion several years from now.

The Committee is being asked to consider three changes to the BAT-toxics strategy: a deadline extension and two different kinds of variances. I will address each of these proposals in turn.

1. Compliance Deadline Extensions

No one disagrees that the July 1, 1984 BAT compliance deadline must be extended. Because EPA is long overdue in promulgating effluent guidelines, sources in many industrial categories will not be given the minimum time necessary to construct treatment facilities and achieve compliance. Indeed, in some industries, EPA will issue final guidelines well after the July 1, 1984 deadline.

We think the Act should contain a rolling compliance period,

triggered by issuance of the regulations, rather than a single date. EPA is promulgating the regulations according to a phased schedule, with over four years between the first and the last. Any single date will give some industries far more time than necessary, or give others far too little, or perhaps both. Each industrial category should be treated approximately the same, and only a standard compliance period can accomplish that result.

Of equal importance, however, is the manner in which the Act addresses situations in which compliance can be achieved before expiration of the standard period. Presently, the Act requires compliance "not later than" the applicable deadlines, and this implies that each source should meet its obligations as soon as possible, as determined by the permit writer. We think this implication should be made explicit in the Act by requiring compliance "as expeditiously as possible, but not later than" the end of the period. With this language, the permit writer would be required to make an affirmative (and reviewable) judgment about the pace of compliance that is possible in each case -- enhancing the progress of toxics control and treating all sources equally under the law. In this regard, both HR 3282 and HR 2305 can and should be improved.

The principal question, of course, is the appropriate length of the standard compliance period. We believe Section 4 of HR 3282 provides the right amount -- three years for BAT limitations

on toxic and non-conventional pollutants.

Three years seems to be the period accepted by most of those who have addressed this issue. In last year's Senate hearings, both Dr. Hernandez and Mr. Eidsness stressed that industry could comply in 36 months or less. In the 1982 House hearings, the Edison Electric Institute said that "compliance should be required within 3 years following adoption of implementing regulations," and added that "this would allow EPA time to issue the necessary regulations and permits, and industry time to design and install treatment systems efficiently and economically." Similarly, the American Petroleum Institute and the American Consulting Engineer's Council have endorsed a three-year compliance period. CMA and NAM have suggested a 1987 deadline, which translates into three years for their industries.

In short, a three-year compliance period would be the responsible, outside deadline for BAT. For this reason, we support HR 3282, but urge you to reject the unnecessarily long compliance period furnished by HR 2305, which appears designed to provide the Steel Industry up to four and one-half years for compliance. Likewise, the Administration proposal of July 1, 1988, from which Mr. Ruckelshaus has yet to disassociate himself, is far too long and should be rejected.

Finally, the Committee should concern itself with the compliance period for permittees whose requirements are based on

"best professional judgment" rather than on effluent guidelines issued by EPA. This can be addressed in either of two ways. First, the Act could provide an absolute outside compliance deadline for BAT so that such sources will have an incentive to press EPA and the states for permit requirements. If this approach is taken, the Act should make clear that the ultimate deadline does not give EPA license to delay effluent guidelines until three years preceeding that date. Second, the approach we would prefer is to set a deadline for issuance of all BPJ permits and then provide up to thirty months beyond the permit issuance date for compliance by each source. (We recommend 30 months rather than 36 because no time would be required to issue the permit.) Such a provision would treat BPJ permittees the same as sources regulated by effluent guidelines, and would furnish a strong incentive for EPA and state agencies to get these permits issued.

2. BAT Variances

We understand that the Committee is being approached by representatives of the chemical industry for a water quality-based variance from BAT. You have heard a great deal about this issue over the last year or two, and you no doubt understand that the environmental community stands firmly against such a variance. I have written to each Committee member explaining why the chemical-industry approach is an unsound idea, and have

attached a copy of that communication to my statement for the record. Moreover, in the Committee's hearings of July 1982, we analyzed this issue and attached copies of an EPA document explaining why then-Administrator Anne Burford recommended against an Administration proposal on the subject (copy attached to this statement). And you have no doubt heard that Administrator Ruckelshaus has concluded that a similar variance for the pretreatment program is not feasible because the prerequisites of any successful national variance provision are missing.

Rather than catalogue and analyze the numerous problems presented by the chemical industry proposal, we present them here in summary form:

- The BAT-variance proposal presumes that BAT is an inflexible, economically perilous program that requires treatment of toxics beyond the needs of water quality. In fact, the opposite is true. BAT is an extremely flexible requirement which, in many cases, demands nothing of a source beyond existing permit limits, and which in all cases must be economically achievable for the industrial category. In defining BAT, EPA addresses only those sources and toxic pollutants of national concern, exempting all others for case-by-case treatment. And contrary to the myth spread by industry, BAT does not mandate a certain technology; EPA leaves each source free to meet BAT in

the most efficient means possible. In short, BAT is the best regulatory method that can be devised to address toxics problems without the delays and uncertainties inherent in a case-by-case, ambient approach.

* The BAT-variance proposal presumes that regulators can promptly define acceptable ambient water quality for dozens of toxic pollutants and then translate those levels into permit limits in hydrologically complex settings. As Mr. Ruckelshaus has pointed out in connection with the proposed pretreatment variance, this simply is not possible in the near term. Most states do not have standards for more than a few toxics, and EPA has predicted that nationwide we are at least a decade away from having the scientific benchmarks and analytical tools to process such a variance. Without this capability, a variance means long delays to debate and litigate the science of ambient water quality while chemical discharges continue uncontrolled by BAT. Existing experience under Sections 316 and 301(h) of the Act amply demonstrate the counterproductive delays of ambient variances.

* Given the flexibility and effectiveness of BAT, together with the difficulty of regulating on an ambient basis, the high resource costs of a variance provision would be completely out of proportion to any benefits of targeting pollution controls. EPA has estimated that at least 1200 work years would be required

over a two-year period to process variance requests, and has concluded that since so few plants would qualify, the net societal gain in developing such a system may be negative.

In sum, it makes no sense from either the standpoint of cost-effectiveness or the goals of the Act to adopt a BAT-variance provision. We urge the Committee to let the BAT program do its job in controlling toxics without the costs, delays, and inevitable water quality degradation caused by a new variance.

3. Fundamentally Different Fctors (FDF) Variances

We understand that EPA intends to seek an amendment that would provide new statutory variances from BAT effluent limitations -- even for toxic pollutants. As my colleague Ms. Dubrowski explained in her statement regarding the pretreatment program, this so-called "fundamentally different factors" (FDF) variance was created by EPA, without Congressional approval, in order to avoid the necessity of dealing with all relevant information during the ruelmaking process. Because the Third Circuit, relying on Section 301(l) of the Act, recently prohibited EPA from granting FDF variances from pretreatment standards for toxics, the Agency intends to seek your rubber stamp of approval for its misguided policy.

EPA's position represents the first and only breach of a longstanding policy of uniformity in regulating toxics under the Act. The Agency's request amounts to an admission that it is not

willing to do its job thoroughly and with the precision Congress expected -- preferring instead to defer the more complicated questions involved in setting BAT until the permit stage, and deferring in the process industry's compliance with important toxics controls. We urge you to keep EPA's feet to the fire, to make this Agency promulgate sound, comprehensive BAT limitations without its ill-conceived escape valve for toxic dischargers.

What's at stake here is the Act's system of regulating industrial sources through uniform rules that apply to classes and categories of dischargers. This system is a sensible, technology forcing approach that requires EPA to identify the "best" sources in a given category, and then to bring all other sources up to that level of control. The poorer performers obviously will have to make the most progress and expend the largest amount of rescurces in order to comply, and this often is because they have not upgraded their plant and treatment equipment over the years as other sources in their industry have done. In a nutshell, these poorer performers often are different from the rest of the industry in terms of many of the BAT "factors" specified in Section 304 -- raw waste loads, discharge volume, energy requirements, age and configuration of equipment and, of course, their cost of compliance -- but nevertheless can afford to comply with BAT without undue economic consequences.

In the 1977 amendments, Congress in effect upheld the Act's uniform system for toxics when it made the economic hardship variance of Section 301(c) unavailable for toxics pollutants. Section 301(c) essentially amounts to a re-examination of the BAT factors for an individual source that claims to be different -- in terms of economic capability -- from the rest of its category. Obviously, what makes a source less able to comply is the impact on its economic status of the factors that are relevant to determining BAT (the FDF variance factors). Having decided that, at least for toxics, industrial sources cannot escape from uniform BAT requirements because they find it economically difficult to comply, it would be ironic indeed for Congress to now permit the same result through examination of the underlying factors that contribute to that difficulty.

Under EPA's FDF procedure, the Act's technology forcing scheme, built on the concept of categorization, is severely undercut because the poorer performers can get special treatment. In practical and legal effect, such sources get the permit writers to conduct a mini-rulemaking procedure to define BAT for them on a case-by-case basis, and to issue a so-called "best professional judgment" (BPJ) permit. Their requirements are not pegged to the "best" performers in the industry because EPA's system makes the rest of industry irrelevant.

What's more, since the FDF variance is granted on the basis

of information "not considered" by EPA in the rulemaking, there is a strong incentive for these sources to withhold relevant information and set the stage for subsequent variance requests. Not only are poorer performers rewarded by this procedure, but EPA's ability to gather sound data on the industry is hampered and the resulting BAT regulations are less thorough, less timely and less defensible.

EPA contends that its BAT regulations are vulnerable to legal challenge without the FDF variance. We disagree. New Source Performance Standards are issued under Section 306 without any such variance, as the Supreme Court has required, and the Agency's ability to defend those categorical rules is unquestioned. Likewise, new-source pretreatment standards under Section 307(c) do not rely on this escape valve. Moreover, if EPA's existing regulations are challenged through petitions for reconsideration of the rules, the Agency can (and should) consider the need to adjust its categorization scheme to account for new and different situations (provided, of course, that the petitioning sources did not sleep on their rights during the first rulemaking). Indeed, EPA even has the option of creating subcategories containing one or a few sources, as it has done in several regulations (e.g., steel, ore mining, inorganic chemicals). Even this procedure is by far preferable to the FDF variance because the regulatory decisions are made by EPA

professionals at headquarters rather than permit writers in the field. In sum, the existing BAT regulations are not vulnerable so long as EPA does a thorough and responsive job.

One of the worst features of EPA's FDF procedure is the delay and resource burdens it can produce. As Ms. Dubrowski demonstrated in her statement, the time required to process a variance is extremely long and the exercise is very resource intensive. EPA itself, in a fairly recent memorandum, has estimated that processing a single variance will require 65 workdays, and "triple the resource requirements for each permit" even without considering the resources needed to defend the Agency's action in evidentiary hearings or court challenges. A significant number of variance requests, the memorandum concluded, "would serve to upset permitting priorities and [EPA's] ability to reduce the backlog of expired industrial permits." (Memo, dtd. Feb. 3, 1982 from the Acting Director, Office of Water Enforcement and Permits to the Acting Assistant Administrator for Water).

Hand in hand with these burdens go inordinate delays before dischargers achieve compliance. One of the best examples is the current controversy over FDF applications filed by two pulp and paper mills in Alaska. These mills should have achieved BPT in 1977, and yet here EPA is over six years later still considering their variance requests. It has taken nearly two years to

produce a tentative denial of the requests since EPA's Regional Administrator forwarded his recommendation to headquarters. This is the kind of process the Agency now asks Congress to approve.

Finally, EPA contends that the FDF provision is environmentally neutral because variances could be granted that require treatment more stringent than BAT. For two reasons, this simply is not the case. First, if EPA has evidence that it is possible for plants in a category to do better than BAT, the Agency has not chosen the proper BAT treatment system. EPA must peg BAT to the best level of performance that is economically achievable for plants in the category. Accordingly, when information is submitted indicating that plants can achieve more effluent reduction than the options under consideration in the rulemaking, it is EPA's responsibility to choose a better option. Second, if EPA does not receive such information in the rulemaking, it never will. Why should a facility come to EPA and point out that it is fundamentally different and ask for more stringent requirements? How are understaffed and overworked permit writers supposed to find these situations? And if EPA thinks environmental organizations or interested citizens have the resources, expertise and access to plant information necessary to uncover grounds for more stringent FDF variances, then the Agency has been deluding itself.

In short, the FDF variance proposal is a bad idea that flies

in the face of established Congressional policy. It should be rejected absolutely. Furthermore, if and when EPA puts forward recommended statutory language to implement its concepts, we would appreciate the opportunity to submit an analysis of the Agency's proposal for the record of these hearings.

Water Quality Standards and Second-Generation Toxics Controls

HR 3282 addresses two sets of issues of vital importance to the future of this Act: (1) the ground rules for setting state water quality standards; and (2) the need to move beyond BAT in targeting toxic "hot spots" of pollution that warrant more stringent controls. We regard each of these provisions as essential to the integrity of the Act and central to this Committee's agenda of amendments. Accordingly, we urge the Committee to support Chairman Howard's initiatives totally.

1. Water Quality Standards

EPA's regulations governing water quality standards have been an issue ever since the Agency proposed far reaching revisions in October 1982. This Committee and the Senate Committee have heard testimony from numerous witnesses regarding the impact of those changes. Chairman Roe has joined with the Senate leaders in seeking withdrawal of the proposal. Both the Senate Committee and Mr. Howard have proposed amendments that would prevent EPA from departing from the Act's policies and requirements, as carried out in previous EPA regulations.

This debate reached a climax of sorts last week when Administrator Ruckelshaus notified Chairman Roe and several Senators, by letter, that he intended to issue final regulations that responded to their earlier concerns and restored major portions of the EPA rules. The Administrator has set many things right in his recent regulations, and to his credit has overcome disasterous policy initiatives from elsewhere in the Administration. We have reviewed the Administrator's new rule and we applaud it because, for the most part, Mr. Ruckelshaus has been faithful to the Act and responsive to the public's concerns.

For their important oversight roles, Chairmen Roe and Howard deserve enormous credit and the public's appreciation. They have, in a very concrete and expeditious fashion, helped to produce an excellent result without resorting to actual legislation.

Where should Congress go from here? The Senate Committee leadership has said it will withdraw most of the proposed amendments that helped to precipitate EPA's recent action. But the agreement reached between Mr. Ruckelshaus and the Senate Committee leadership obviously applies only on the other side of the Capitol. Chairman Howard's proposals are pending here, and they merit your thorough consideration.

We believe there are two good reasons for this Committee to endorse the water quality provisions of HR 3282 and insist on

legislation in a conference with the Senate. With all due respect to Mr. Ruckelshaus, his regulations suffer from two serious flaws: (1) they do not offer the permanence and invulnerability to judicial interpretation that a statutory amendment would entail; and (2) substantively, they fall short of the mark in several important particulars.

Most important, if the EPA regulation reflects sound policy, as we agree it does in most respects, then its principal features should be clarified and made explicit in the Act itself. Nine national environmental organizations expressed their unified position on this point in a July 13, 1983 letter to Senate Committee members, copies of which were forwarded to Chairman Roe and Administrator Ruckelshaus (attached for the record). As we said then, these issues are questions of national policy for Congress to decide. They should not be left vulnerable to the whims of future regulators or the uncertainties of judicial reinterpretation, particularly in the context of possible negative implications created by Congressional consideration and inaction.

We find totally unpersuasive the Administrator's repeated assertion that legislation on these issues would hamper the ability of EPA and the states to deal with site-specific problems. If EPA intends that these regulations not be changed, we see no potential damage to their "flexibility" from codifying

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the main features of the Agency's rules.

In addition, EPA's regulation does not include several important features found in HR 3282. First, unlike the EPA regulation, HR 3282 permits no degradation of high quality waters which constitute an outstanding national resource, such as the waters of national and state parks. EPA's rule would permit some degradation of these valuable resources.

Second, for other waters, HR 3282 would prevent degradation unless there is no feasible alternative and unless the state takes all practicable steps to minimize adverse effects on water quality. The Agency's regulation omits these important protections.

Third, HR 3282 would require that, where necessary, states must adopt numerical criteria for toxic pollutants of concern. A similar provision will be retained in the Senate Committee bill despite the withdrawal of most provisions on water quality standards. EPA's regulations, however, would permit states to utilize narrative toxics criteria (e.g., waters shall be "free from toxics in toxic amounts") instead of numerical standards. We believe this flexibility is unwarranted because narrative criteria must be implemented, if at all, through new biomonitoring techniques that are: useless to protect against human health hazards; virtually untried except in a handful of EPA experiments with extremely cooperative dischargers; and very

difficult to translate into needed treatment systems, process changes or other alterations that can promptly reduce toxicity. EPA's emphasis on biomonitoring and whole-effluent studies is a valuable and, we hope, promising technique for supplementing the traditional numerical approach, but we think it is an unacceptable substitute at this stage of its development.

2. Second-Generation Toxics Controls

As we near completion of the BAT strategy, it is time to begin preparations for the next generation of toxics control. BAT is a comprehensive, yet necessarily near-sighted toxics strategy; it addresses a wide spectrum of sources and pollutants, but because of scientific uncertainty never asks the tough question: how much of a toxic chemical can be permitted in the water without endangering human health or harming aquatic life? Once BAT is on the books, we must address this question in a carefully targeted and scientifically rigorous fashion. The answers might not be easy, but they must be sound for at least the most contaminated of our water resources: the toxic hotspots.

Where these hot spots are, and how badly they are polluted, have yet to be determined because no one has systemmatically conducted the necessary research and surveys. But EPA's half-hearted attempts, under authority of the NRDC v. Train toxics Consent Decree, have at least demonstrated that such areas almost

surely will exist even after BAT controls are in place. The Agency identified rivers and streams in or near 34 metropolitan areas where dilution studies showed a strong likelihood of problems. Some of these represented concentrations of industrial sources; others had a single, large source on a very small water body. Because of limitations in EPA's anlaytical methodology, we think the Agency only scratched the surface. Due to its inability to model hydrologically complex situations, for example, EPA ignored estuaries, where one might expect to encounter serious problems.

The Agency has continued some limited follow-up studies in a few of these areas, but to date has produced no regulatory or administrative strategy to address these problems. EPA's attitude seems to be governed by total deference to the states -- both to identify problem areas and control the responsible sources. That attitude represents business as usual, and business as it has been for over 10 years. We think it is time to make post-BAT toxics control a national priority, and to place the responsiblity in Mr. Ruckelshaus' hands to see that the job gets done.

For these reasons, we support the provisions of HR 3282 that would require actions to control toxics beyond BAT in those limited areas where it is shown to be necessary. HR 3282 does not provide new regulatory authorities; none are needed.

Instead, it requires EPA and the states to use the authority they have had for over 10 years, and to furnish the public some confidence that their waters are safe from toxic chemicals.

These provisions of HR 3282 essentially require four things. First, within one year, EPA (in cooperation with the states) must publish a list of all waters that will not have acceptable water quality (in terms of toxics) after implementation of BAT, and identify the sources and amounts of pollutants causing the problem in each area. Second, after one additional year, EPA must propose a control strategy for each problem area, using the authority of Section 302 or Section 303, that will reduce toxic discharges to acceptable levels. These strategies must be promulgated within 6 months thereafter. Third, all affected sources must comply with these strategies as soon as possible, but no later than three years after issuance of the final versions. Finally, EPA and the states must issue or modify all applicable permits under Section 402 to carry out the control strategies.

We think these are sensible and necessary steps. HR 3282 leaves the nature of each control strategy to be determined by the needs that arise in each instance. And it leaves the States an important partnership role with EPA in seeing that results are achieved. What HR 3282 does not do is leave the ultimate question of adequate toxics controls (and the timing of those

controls) to the competing budget and policy priorities of EPA and the States. The amendment elevates post-BAT controls to a very high priority, and concentrates the responsibility and accountability in the Administrator's hands. We urge the Committee to follow Chairman Howard's lead and make these important provisions a leading component of the House amendments.

EPA undoubtedly will emphasize that they have a "policy" (a draft policy at this point) of moving beyond BAT where someone determines it is necessary to issue more stringent permits. But a policy does not ensure results, especially among the states, and this policy does not ensure that anyone will do the anlaysis necessary to make such determinations. Moreover, where the necessary information is not available, EPA's policy calls for long-term monitoring and possible improvements the next time a permit is revised -- 5 or 10 years hence.

This policy direction by EPA is laudable, but it is not enough. EPA has the authority to move beyond BAT, and it has (or has recently begun to acquire) the motivation to take several important preliminary steps. What EPA does not have, but must have, is a Congressional mandate -- a set of requirements such as those contained in HR 3282 -- to get on with the job. We urge the Committee to accept nothing less than a firm, national program of post-BAT controls on toxics.

predicted last year that the scientific tools to decide BAT variances (water quality criteria and similar benchmarks for toxics) will take a decade to develop.[9]

E. BAT Variances Would Be Inordinately Expensive and Time Consuming.

Because any "environmental modification" requires detailed scientific scrutiny and extensive administrative processes, they tend to be very expensive and take a long time to complete. EPA estimates the government's personnel costs at 1200 work years per year just to process these variances, and predicts compliance for some industries in the 1990's. Similar experiences have been demonstrated under the existing S301(h) waiver for ocean outfalls.[10] EPA concludes that "the net societal gain ... may be negative."

Why should Congress start down such a lengthy, complex and costly road when the relief being afforded really is not necessary? We can't think of a single reason -- unless you intend to write legislative loopholes for the chemical industry.

---

[9] Our "Analysis of EPA Proposals To Amend the Clean Water Act" discusses the details of these problems.

[10] Fewer than 20 waivers decision have been made in over five years because the process is complex and because regulations and litigation took a very long time.

BAT

BACKGROUND

- The emphasis on toxic pollutants in the 1977 Clean Water Act reflected widespread concern that there were a large number of toxic chemicals being discharged to the water environment causing significant effects on human health and aquatic life. To some extent these concerns were based on a lack of information, and, to be on the safe side, Congress directed EPA to develop BAT guidelines for controlling the 65 chemicals and classes of chemicals in 21 major industrial categories.

TARGETING BAT

- The Agency has shifted its BAT strategy so that BAT guidelines that are more stringent than BPT are being developed for only a relatively small number of industries which discharge significant amounts of toxic pollutants. For example, the Iron and Steel industry will discharge 2,560,000 pounds of toxic pollutants per year if BAT controls are not implemented and at least twice that much will be discharged from the organics and plastics industry without BAT controls.

- For those industries and pollutants which are being targeted by the Agency for BAT guidelines more stringent than BPT, the Agency will ensure that the BAT limitations will be (1) economically achievable, (2) cost effective, and (3) necessary to reduce significant discharges of one or more toxic pollutants to remain if only BPT is implemented.

  Environmental impact assessments conducted by the Agency of proposed effluent guidelines indicated that this approach will result in significant water quality benefits. For instance, returning to the Iron and Steel example, our analysis of the major dischargers in this industry shows that about 75 percent of them will, by themselves, cause violations of applicable State water quality standards in the absence of BAT.

- The Agency now projects that eight industries will receive BAT guidelines more stringent than BPT. They are:

  The Agency is still in the preliminary stages of analysis for another three industries for which BAT may be required:

  The regulations' annual cost for the first set of industries is $80.6 million. Preliminary estimates of annual costs for the second set of industries and between $400-$700 million and that number is dominated by the costs to the organics and plastics industry ($325-$650 million).

Natural Resources Defense Council, Inc.

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July 20, 1983

Congressman James J. Howard
2245 Rayburn House Office Bldg.
Washington, D.C. 20515

Dear Congressman Howard:

We understand that you will be receiving letters or mailgrams from business interests in your district complaining about allegedly ineffective, inflexible and unnecessary federal regulations under the Clean Water Act to control pollution from industrial sources. These regulations, known as "BAT" because they require industries to use the "best available technology," are the very cornerstone of the national effort to curtail toxic water pollution. Stripped of the rhetoric, industry is asking you to support variances from these national toxics controls.

Environmental organizations strongly support the BAT program, and we want you to understand the other side of this variance issue. To begin with, a lot of responsible people have examined industry's position and rejected it as unsound and unnecessary:

* In a December 1982 Harris Survey, overwhelming majorities of the American Public supported BAT and opposed these variances: Over 80 percent believed sources of toxic pollutants that are dangerous to human health should not be granted any exception from BAT. And seventy-four percent said all factories discharging toxics should have to use the best technology they can afford.

* The Senate Committee on Environment and Public Works has heard industry's case for a BAT variance and rejected the notion in a bill marked up last month. Senator Chafee, Chairman of the Subcommittee on Environmental Pollution, said:

> [It] seems to me that a BAT waiver turns the Clean Water Act into an aquatic guessing game. To acknowledge that a waiver is an acceptable regulatory tool is to take a major step backward in the goals of the Act. A water quality-based approach to pollution control failed before 1972 and will fail again.

* * *

At a time when the agency's resources are diminishing, I expect that EPA would try to marshal these resources to get on with the job at hand rather than resurrect a policy that Congress judged to be a failure a decade ago.

* After considering industry's plea for toxics variances, EPA recently rejected the notion -- recommending against an Administration amendment in a memorandum to the President's Cabinet Council on Natural Resources and Environment. EPA's bottom line is that variances simply are not necessary:

BAT guidelines that are more stringent than [existing controls] are being developed for only a relatively small number of industries .... The Agency will ensure that the BAT limitations will be (1) economically achievable, (2) cost effective, and (3) necessary to reduce significant discharges of ... toxic pollutants .... Given the careful targeting of controls, few industries will qualify [for a variance] .... The net societal gain in developing a modification/exemption system may be negative.

We think the case against a BAT variance is very clear. We are concerned, however, because the catalyst for communications you will be receiving appears to be a misleading and factually incorrect package of information distributed by an organization calling itself Citizens for Effective Environmental Action Now (CEEAN). This is an industry group, based in Washington, that opposes the national strategy for toxics controls.

The CEEAN information is attached for your review, together with our analysis of its major flaws. The central problem with CEEAN's position is that it mischaracterizes the BAT-toxics program in several fundamental respects.

You will require reliable, responsible information on this issue in the months ahead. If you or your staff need a briefing on variances or other Clean Water Act questions, please call on us.

We look forward to working with you to reauthorize a strong, effective Clean Water Act.

Sincerely,

J. Taylor Banks

J. Taylor Banks
Senior Staff Attorney

Encls.
JTB:mrt

cc: Full House Committee on Public Works

Analysis of CEEAN Position on BAT

1. CEEAN claims that BAT regulations are "ineffective and unnecessary."

According to EPA's estimates, BAT regulations will require the removal of over 100 million pounds of toxic materials, including carcinogens, from our waterways every year -- a reduction of over 65 percent of the toxics presently discharged by industries. The chemical industry desputes EPA's calculations, but still agrees that BAT will remove as much as 20 million pounds of toxics per year -- a significant improvement in industrial discharges. When one considers that many of these chemicals are dangerous at parts per million in the water, removing millions of pounds from wastestreams is an important accomplishment.

2. CEEAN claims that BAT will require "costly" new pollution control equipment.

By definition, BAT must be "economically achievable" for an industry. EPA must specifically consider the economic effects of each BAT rule -- plant closures, employment lost, price increase, market share, etc. -- and decide that industry can afford the costs. If industry cannot afford stringent controls, EPA cannot and does not impose them.

For example, the BAT rule for the following industries will impose no costs and have no economic impacts beyond existing requirements: Coal Mines, Leather Tanneries, Petroleum Refineries, Textile Mills and Timber Products Processors. Why? Because EPA found that the costs of more stringent controls either were too high or not worth it environmentally.

In some industries, where BAT is somewhat more stringent than existing controls, the economic impacts have been quite minor. For example, in the steel industry, EPA found that "the incremental costs associated with the regulation result in incremental short-run changes in price, market share, employment and production of about 0.6% or less ...." Similar small-scale impacts will result from other industry regulations.

3. CEEAN claims that BAT "in most cases will do little to improve the level of water quality."

This is absurd. You cannot remove millions of pounds of

toxic chemicals from industrial effluents each year without improving the quality of America's water resources. For example, EPA has said that without BAT, 75% of all steel mills in the country would violate state water quality standards.

4. CEEAN says that business will have to install BAT "by mid-1984".

CEEAN may be out of touch with current developments. The Clean Water Act presently has a July 1, 1984 deadline, but at least 4 bills are pending in Congress to extend that date into the 1986-88 time period. All sides -- environmentalists, EPA and industry -- have testified repeatedly that these extensions are needed. There is no doubt that the 1984 date will be delayed substantially, and even if these amendments are not enacted promptly, EPA is preparing to allow extensions administratively.

5. CEEAN claims that "many businesses" are "currently meeting national clean water standards."

The only national standards in effect now are so-called BPT regulations, "best practicable technology," the predecessor of BAT. These regulations were issued in the early 1970's and met by most of industry by 1977. By and large, BPT does not address toxic pollutants.

The only ambient standards under the Act are state water quality standards. To say that industry is meeting these also says almost nothing about toxics. Only about half the states have any numerical standards for toxics. Those that do usually cover only a handful of heavy metals -- nowhere near the 40+ chemicals covered by BAT -- and they almost never consider chronic toxic effects or human exposure through the food chain.

In short, BAT is the first comprehensive set of requirements for toxics. It is largely irrelevant to say that old federal and state standards are being met.

6. CEEAN claims that BAT will force businesses "to take out and replace their equipment".

BAT is an "add-on." These regulations require that sources take a reasonable step beyond the old BPT requirements -- usually by adding another process in the treatment system, reducing their water usage, or adopting in-plant changes and housekeeping measures to improve on existing equipment. If a company uses antiquated or obsolete treatment equipment that cannot meet BAT limits through add-ons, it might have to redesign its

facilities. But these instances would be rare if, indeed, they ever occur.

7. CEEAN insists that "business must have flexibility in determining which type of techniques will meet the standards and still be cost effective."

Under BAT, business has total flexibility in this regard. EPA does not prescribe technology; it sets numerical limits based on the performance of a known treatment system, but then allows each source to meet the numbers in any fashion. As the Deputy Administrator of EPA said in recent testimony, "technology-based" does not mean that the Agency prescribes the technology that must be used. Rather, EPA reviews the various treatment techniques presently in use or available in each industrial sector to determine what limitations are achievable using available methods. Once EPA adopts [BAT], each company or plant is free to use any method it chooses to achieve [BAT]."

8. CEEAN's bottom line: BAT should be applied case-by-case only where there is a problem.

The fatal flaw in this industry approach is that it cannot be carried out promptly and accurately. Because the states have almost no toxics standards, there currently is no uniform, reliable basis on which to determine whether an existing discharger protects health and the environment -- i.e., whether there is a "problem" in a particular waterway. The head of EPA's Office of Research and Development has predicted it may take at least 10 years to develop these benchmarks. That is why we have BAT -- to do something about the millions of pounds of toxics being discharged each year while scientists continue to struggle with the ultimate scientific benchmarks.

CEEAN Citizens for Effective Environmental Action Now

Toll Free Number (800) 322-CEAN

May 24, 1983

Dear California Manufacturer:

Once again, the federal government is attempting to force ineffective and unnecessary regulations onto the backs of California businesses like yours.

Unless Congress acts now, thousands of California businesses will be forced to purchase and install costly new pollution control equipment that in most cases will do little to improve the level of water quality achieved with current facilities.

By mid-1984, many businesses will be forced to upgrade their pollution control facilities to the "best available technology" (BAT), even though they are currently meeting national clean water standards with existing equipment.

We feel that those businesses which are meeting standards should not be forced to tear out and replace their equipment with new facilities that do not further enhance water purity.

Citizens for Effective Environmental Action Now (CEEAN) is a national industry group, asking individual businessmen to urge their Congressmen to revise the Clean Water Act's BAT regulations.

We have enclosed letters from the California Manufacturers Association and the San Jose Chamber of Commerce endorsing our position.

The California Manufacturers Association is exactly right in supporting an "appropriate and necessary level of control" but also recognizing that "if inflexible requirements are mandated, significant capital expenditures will result."

We're certain you can agree with the San Jose Chamber's statement that "businesses must have flexibility in determining which type of technology will meet the standards and still be cost effective."

Your own Congressman serves on the Congressional committee that will handle the Clean Water Act revisions this year. We will be sending the enclosed mailgram to Congressman urging him to consider our position on BAT.

We encourage you to join with the California Manufacturers Association and the San Jose Chamber of Commerce in supporting this effort and lend your name to the CEEAN mailgram.

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20-955 O—84——137

July 13, 1983

Senator Robert T. Stafford
133 Senate Hart Office Building
Washington, D.C. 20510

Senator Jennings Randolph
302 Senate Dirksen Office Building
Washington, D.C. 20510

Senator John H. Chafee
523 Senate Dirksen Office Building
Washington, D.C. 20510

Senator George J. Mitchell
364 Senate Russell Office Building
Washington, D.C. 20510

Gentlemen:

We strongly endorse the Committee's proposal for amending the Clean Water Act regarding water quality standards, and see no reason for retreating a single step. Through your March 14, 1983 letter to Dr. Hernandez urging the withdrawal of EPA's proposed regulations, you established a strong position of Congressional leadership on this important issue. Now, the Committee's amendments place the Senate in a position to guarantee that EPA steers the proper course for its water quality standards program.

Administrator Ruckelshaus intends to issue a final regulation that he hopes you will accept in lieu of legislation, and has cited the need for administrative flexibility as his principal concern. With all due respect to the Administrator, we doubt that the Committee proposal undercuts any need for flexibility, and have seen no evidence of how the bill could inhibit EPA's efforts to achieve clean water. As you know, the existing rules have proved flexible enough to allow needed adjustments in state water quality standards.

The provisions of your bill are sound, as EPA's silence thus far surely concedes, and they should become the law of the land, not merely regulations. The bill addresses itself to matters of

national policy on which it is important for Congress to clarify its intentions. These issues are Congress's to decide; their resolution should not be left to inter-agency negotiations.

As Senator Chafee and others have observed, the critical difference between laws and rules is that where the law is specific and clear, it cannot be changed or reinterpreted by a future Administrator or OMB. This concern about regulatory "reform" has a sobering basis in recent experience, as the EPA regulations of the 1970's have been eroded over the past two years. In the water area alone, we have seen actual or attempted retreats in at least five key areas: pretreatment removal credits, anti-backsliding, NEPA implementation, new-source controls, and the toxic hot-spots program. We have no doubt that Mr. Ruckelshaus is a man of his word, but he will not be at EPA indefinitely, and we cannot assume that the important policies in the Committee bill would be preserved in his absence.

We are equally concerned, however, about the Administrator's ability to defend a regulation in the face of any ambiguity as to Congressional intent. Each of you appreciates that when Mr. Ruckelshaus' regulation is reviewed by a U.S. Court of Appeals, it must be sustained and properly interpreted by the judiciary on the basis of provisions in the Clean Water Act and Congress's expressions of legislative intent -- both direct and by implication. We think it is essential to bear in mind the potential effects on the legislative history of withdrawing the Committee's proposal so as to accommodate regulations that may differ in any important respect from the policies on which you have taken a stand. Such a negative implication would be an extremely high price to pay for administrative flexibility.

With this concern in mind, we set forth below a list of what we believe are the most important issues. Each of these principles is rooted firmly in the Committee bill.

1. Mandatory Numerical Toxics Criteria

The Committee bill directs each state to develop numerical criteria for those toxic pollutants that could harm human health and aquatic life, or otherwise interfere with attaining water quality goals for a given water body. This approach is the very cornerstone of the Committee's toxic hot-spots initiative.

EPA would prefer to allow the states a choice between numerical criteria and narrative statements (e.g., "free from toxics in toxic amounts") that would be implemented, if at all, through biomonitoring techniques. EPA staff have admitted to the

Committee staff that such techniques: never have been used to issue and enforce a single permit; are useless for human health protection; and have not been demonstrated in the field to the point where regulatory reliability and costs are well established. As we understand it, these are the reasons why the Committee bill merely authorizes biomonitoring as a supplemental tool in the water quality standards program.

2. Mandatory Upgrading of Standards

The Committee bill codifies existing EPA regulatory provisions for upgrading a use designation whenever it is less protective or beneficial than those uses presently attained in a particular water body. The bill also requires the state to adopt new or additional criteria for the protection of existing uses. These essential provisions were not included in EPA's proposal.

3. Restrictions on Downgrading Standards.

The Committee bill allows downgrading (adoption of less beneficial uses) only in the narrow circumstances provided by existing EPA regulations (natural background, irretrievable levels of pollution, or severe economic hardship). As you emphasized in your March 14, 1983 letter to Dr. Hernandez, EPA and OMB prefer to depart from at least three of the Committee's policies.

First, attainment costs must be considered in terms of economic impacts, not cost-benefit comparisons as OMB would prefer. The Committee bill (as well as existing EPA regulations) would allow downgrading where attaining the existing standard would require controls beyond BAT and "result in substantial and widespread adverse social and economic impact." As we read the Act, this is what Congress always intended; clean water shall be achieved unless severe economic harm would result. EPA's proposal -- to which your letter objected -- would substitute a cost-benefit comparison for this economic test. The EPA regulation would eliminate the Congress's judgment that clean water is our national goal. It would allow states to re-examine whether clean water is desirable, and to base these decisions on crude, expensive, politically vulnerable assessments. This is a bad idea, and one which you should continue to reject.

Second, downgrading must not be allowed where physical characteristics, rather than water quality, affect people's ability to use America's waters. As you noted in your letter, a river's swift currents or congested traffic should not furnish an excuse to give up on maintaining or improving the quality of its

water. Similarly, shallow conditions, rapids, channelization, temperature or other characteristics may reduce a waterway's suitability or accessibilitiy for canoeing or swimmming, but prudence dictates maintaining good water quality. The Committee bill is satisfactory on this point. EPA's proposed regulation is not.

Third, the Committee bill makes clear that states may not designate any waters for use as "waste transport" -- i.e., open sewers. Astonishing as it may seem, some states are considering just such a move. EPA's regulation does not prohibit these practices.

4. Anti-Degradation.

The Committee's provision on anti-degradation closely follows EPA's existing regulation, but adds several important provisions to protect high quality waters. First, when a state decides to allow degradation, it must find that there are no feasible and prudent alternatives to the pollution impacts, and must require all practicable measures to reduce or offset the damaging water quality effects. We think these are common-sense, minimum requirements when deciding to degrade the finest waters in the country. Second, the bill requires that States provide an adequate margin of safety to ensure that their standards are satisfied even if water quality degradation is allowed. This provision properly places the responsiblity on the state to permit only such degradation as can be justified in view of the ever-present scientific uncertainty associated with such decisions.

5. Miscellaneous Provisions.

EPA's proposal contains many other problems that must be examined in detail if Administrator Ruckelshaus issues a new regulation. For example, the EPA proposal affects public participation, low-flow exemptions, periodic state reviews of all waters, state-issued variances from treatment requirements, and the EPA review and approval process. Some of these could have major detrimental impacts on water quality and on the administration of state programs.

* * *

Your March 14 letter and the Committee bill are desparately needed initiatives on these important policies. Nearly 800 individuals and 230 environmental organizations around the country commented on EPA's proposal; many expressed the same

alarm and concern we feel about the prospects of retreating on water quality in the name of flexibility. And at least 17 states, whose flexibility EPA purports to be enhancing, have raised serious objections to the proposal.

The importance of these issues requires your close attention and collective wisdom in the days ahead. We urge you to stand firm in your resolve to take the lead in deciding the national policy for clean water, and in eliminating the possibility of any weakening "reforms" in the future. We would be pleased to meet with you to discuss your plans and answer any questions you might have.

Sincerely,

Merilyn Reeves, League of Women Voters of the United States
Hope Babcock, National Audubon Society
Sharon Newsome, National Wildlife Federation
Daniel Weiss, Izaak Walton League of America
Ed Hopkins, Clean Water Action Project
Pam McClelland, Trout Unlimited
Jim Elder, Sierra Club
Brent Blackwelder, Environmental Policy Center

J. Taylor Banks

by: J. Taylor Banks
Natural Resources Defense Council

cc: Congressman Robert A. Roe
Administrator William D. Ruckelshaus

NRDC
Clean Water

TESTIMONY OF

FRANCES DUBROWSKI

SENIOR ATTORNEY

NATURAL RESOURCES DEFENSE COUNCIL, INC.

BEFORE THE HOUSE SUBCOMMITTEE

ON WATER RESOURCES

ON

"THE CLEAN WATER ACT'S PRETREATMENT PROGRAM"

NOVEMBER 9, 1983

Mr. Chairman and members of the Subcommittee, it is a pleasure to be invited to testify here today. When we testified before this Subcommittee last year, we emphasized that the national pretreatment program is one of the Clean Water Act's most important programs for controlling toxic pollutants. More than half, or 60,000 of the nation's industrial polluters, dump their wastewaters in municipal sewage treatment plants.

At least 93 chemicals, including such well-known toxics as lead, mercury, cyanide, and arsenic have been found in these wastewaters. (Table I of these comments describes the adverse health effects of some of the more well-known toxics detected in POTW effluent samples.)

Toxic wastes cause three alarming problems in municipal plants. First, community plants are designed to treat conventional pollutants, not toxics. Toxics often pass through the plant, causing the same health and environmental damage as if they were dumped directly into a waterway.

Second, toxic wastes can destroy a community's huge investment in a sewage treatment plant. They can interfere with a plant's sensitive biological processes, impairing treatment of industrial wastes as well as the much greater volume of community wastewaters. They can affect the structural integrity of the plant, corroding pipes and other equipment. They can expose municipal workers to highly toxic fumes, producing nausea; dizziness; and eye, nose and throat, and skin irritation. In extreme cases, they have exploded the treatment works and its sewer system.

Finally, toxic chemicals concentrate in the sludge wastes produced by a treatment facility. Contaminated sludge is more expensive to dispose of, especially the large volumes generated by municipal plants. If improperly disposed of, the chemicals in the sludge will seep out into groundwater and drinking water supplies, permeate the soil where they can be taken up into the plants we eat, or become air pollutants when the sludge is incinerated.

For these reasons, Congress enacted a national program requiring pretreatment of industrial wastes before they enter municipal plants.

Last year, we pointed out that the pretreatment program had reached a critical turning point. After a decade of data-gathering and bureaucratic foot-dragging, the program was about to accomplish its goals. Developments since that time have proved that statement to be true. EPA has now proposed or promulgated twenty national categorical pretreatment standards. Together, these standards will eliminate over 200 million pounds of toxic pollutants from POTW influent each year.

The general pretreatment regulations, which establish the basic structure of the program, are also finally in place. They were issued by EPA in January 1981 after an NRDC lawsuit spurring EPA into motion and four years of subsequent internal agency review. In September of this year, the U.S. Court of Appeals for the Third Circuit upheld the rules in all major respects but one -- the Court agreed with NRDC that the "FDF" or "fundamentally

different factors" variance violated Congress' intent that toxic pollutants be strictly controlled.* National Association of Metal Finishers, et al. v. EPA, No. 79-2256, September 20, 1983.

With the federal regulations in place, modest progress is being made at the local level. Over 100 POTWs have obtained EPA's approval for local programs which comply with federal regulations; many more are on the way to doing so. Over 64% of the POTWs have now performed an industrial waste survey to identify the sources, amount, and characteristics of their industrial influent, a necessary first step to effective pollution control.

In spite of this progress, much remains to be done. We urge Congress to maintain the pressure for fuller pretreatment of toxic pollutants.

Our testimony today will address three proposals for changes to the pretreatment program which have been, or will likely be, put before this Committee. Each proposal would seriously undercut the toxic pollution protection afforded by the pretreatment program; each should be rejected by the Committee.

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* The Court also remanded three definitions -- those of "interference," "pass through," and "new sources" -- to EPA.

1. "FDF" or "Fundamentally Different Factors" Variances for Toxics.

When Congress reauthorized the Clean Water Act in 1977, it placed special emphasis on the control of toxic pollutants. Consistent with this overall direction, Congress specified in Section 301(l) of the Act that EPA could not grant modifications (i.e., "variances" or "waivers") from pretreatment standards set for certain listed toxic pollutants.*

This provision made sense: it placed a premium on speed and uniformity. Those with information about the economics or technology of pollution control who wanted to influence the development of a standard had an obligation to place the information promptly before EPA. To facilitate standard-setting, EPA would consider all relevant information at once, thereby minimizing the expenditure of administrative resources and the need for re-review of the standards. Once the standards were in place, EPA, the affected industries and the public could turn their attention and resources toward ensuring compliance; they would not be distracted by attempts to relitigate questions of economic or technological feasibility, by applications for waivers based on grounds irrelevant to the Congressional scheme, or by other dilatory tactics.

Uniformity, too, would be enhanced. A single group of experts at EPA would set the standards, rather than scattered

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* 1977 Leg. Hist. at 328-31 (statement of Rep. Roberts); id. at 458 (statement of Sen. Muskie).

regional, state and local officials acting on variance applications for individual plants. A single Circuit Court of Appeals would decide a judicial challenge, avoiding the potentially inconsistent results that could emerge from plant-by-plant and court-by-court review. Thus, industries embarking on a compliance program could rest assured that competitors would not achieve a more favorable result by extending appeals to different decision-makers.

This scheme offered industry certainty, while still preserving flexibility to respond to a developing data base. If new information bearing upon the standards later came to light, an affected industry could petition EPA to consider the new facts, or it could seek judicial review of the standards under Section 509(b) of the Clean Water Act -- but only if the industry could not have brought the information to EPA's attention during the original standard-setting proceeding.

This scheme, of course, put pressure on EPA to do the job intended by Congress. EPA could not avoid the hard questions; it could not neglect to consider critical information, postponing its decisions on some sources or types of facilities until another day.

Not content with Congress' scheme, EPA invented one of its own. It asserted that the Administrator "in his discretion" could permit variances from the pretreatment standards whenever "fundamentally difference factors" from those considered by the Administrator were present (the "FDF" variance).

EPA identified six factors which might be considered fundamentally different:

1) the nature or quality of pollutants in the raw waste load;
2) the volume of the discharge;
3) non-water quality environmental impact of control and treatment;
4) energy requirements of control and treatment;
5) age, size, land availability and configuration, processes employed, process changes, and engineering aspects of the application of control technology; and
6) cost of compliance.

These factors were virtually identical to those which EPA had to consider in setting the BPT or BAT-level pretreatment standards themselves.* In other words, the variance provision allowed EPA to postpone the BPT or BAT decision-making process (while still enabling EPA to claim that it had complied with its standard-setting deadlines).

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* Section 304(b) of the Clean Water Act told EPA to consider "the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate" in setting BAT-level standards. In addition, the Administrator had to consider "the total cost of application of technology in relation to the effluent reduction benefits to be achieved" when setting BPT-level standards.

EPA claimed that the variance would come into play where either information affecting the pretreatment standards "will not be available", or where this information "will not be considered" by EPA in setting the national standards.* In neither case is a variance needed; indeed, in both cases the existence of a variance poses a danger to the integrity of the rulemaking. If information on the applicability of the pretreatment standards to specific plants is "not available," it is most likely because individual plants failed to supply critical information to EPA during the standard-setting process.** If so, there is no sound reason for rewarding these plants with a "second bite at the apple" in a separate variance proceeding. Likewise, if information is not "considered," it can only be because EPA failed to respond adequately to the comments or data it received during the rulemaking. In this case, however, EPA would be extremely vulnerable to a lawsuit challenging the standards as "arbitrary and capricious" under the Administrative Procedure Act.

In addition, the existence of a variance thwarts key elements of Congress' scheme for strict control of toxic pollutants -- because it has the potential to delay the standard-

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* EPA's general pretreatment regulations, 46 Fed. Reg. 9455 (January 28, 1981).

** Information may also not be "available" because it does not exist and can only be developed at a later date. If so, however, Section 509(b) of the Clean Water Act, as noted earlier, already gives individual plants all the relief they would need to seek a new pretreatment standard.

setting process for individual plants and because it destroys the uniformity of the standards.

A delay of almost a year in the best of cases -- considerably more on the average -- is entailed in undertaking the steps needed to process and approve or deny variance applications. EPA's general pretreatment regulations outlined the following minimal steps:

- 180 days from the effective date of the standard (longer if a "category determination request" is made) to submit a variance application
- an indeterminate amount of time from receipt of the application until the public is notified of a pending request
- 30 days or more for public comment on the application
- an indeterminate amount of time for the State or the Regional enforcement division director to make a decision on the variance request
- 30 days from the decision of the Regional enforcement division director to request a hearing by the Regional Administrator

- an indeterminate amount of time for the Regional Administrator to decide whether to hold a hearing
- 30 days to appeal to the Administrator if the Regional Administrator fails to hold a hearing
- an indeterminate amount of time to conduct a hearing and decide the variance request.

While sources would still be under an obligation to comply with the pretreatment standards while their variance applications were being decided, many might choose not to do so, gambling on a favorable outcome. Thus, the variance will impair the voluntary compliance needed to make the pretreatment program a success.

Each variance application will also consume considerable administrative resources. Now EPA headquarters personnel (or consultants working under their direct supervision) collect and analyze the comprehensive data base for each pretreatment standard. If variances were allowed, state and regional EPA personnel would have to duplicate the analytical task. Their decisions might well differ from one area of the country to another, creating inequities never anticipated by Congress. For these reasons, Congress clearly prohibited variances for toxics in the 1977 Clean Water Act, and the courts upheld the choice.

A variety of arguments are now being offered to persuade Congress to reverse its policy for toxics control. None withstands analysis.

EPA claims, for example, that a variance will reduce the time and cost of setting pretreatment standards. The reverse is true. The standards are "set" when each regulated facility, including the controversial ones, knows the limits which will apply to it. When this process is splintered into several piecemeal rulemaking proceedings, delay and duplication of effort are inevitable. Thus, over the long run, the cost and time of standard-setting increases.

A variance does not even simplify the first phase, standard-setting for the bulk of an industrial category. Individual plant and process differences inevitably crop up, precipitating the creation of separate subcategories. EPA, for example, is considering a separate subcategory for new platinum ore mines and mills, even though only one plant would fit the subcategory; EPA created a separate subcategory for iron blast furnaces even though only two plants fit the subcategory.

Individual plant and process differences account, at least in part, for the weak standards EPA issues for entire industrial categories. For example, EPA recently issued pretreatment standards for the metal finishing category. It found that individual metal finishers differed considerably in the total toxic organic control they could achieve; those which performed both solvent degreasing and painting had a higher raw waste load than any other process group. EPA nevertheless based its limits for the entire metal finishing category on the processes with the highest raw waste load, giving plants which did not perform both

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operations a windfall in terms of their pollution control obligations.

Likewise, EPA determined that metal finishers, all of whom are covered by the earlier electroplating standards, could meet the total toxic organic limits for metal finishing with the end-of-pipe electroplating treatment due by June 1984. Nevertheless, EPA gave metal finishers a February 1986 compliance deadline "in case additional process streams present special compliance problems." Since EPA already builds a contingency factor into its standards for individualized compliance problems, it does not need a variance to give industry further regulatory relief.

EPA also claims that a variance is not a "loophole" in the statutory scheme. That statement, too, lacks credibility. It is true, as EPA asserts, that citizens could use the variance procedure constructed by EPA to obtain stricter toxic pollution controls. But that possibility is more theoretical than real. Ordinary citizens could only substantiate a call for a stricter individual plant standard by reference to the specific engineering or economic advantages of a particular facility; they, unlike plant managers, are unlikely to have this information.

More often, a variance will be used to relax standards. All pending variance applications were filed by industries seeking waivers from their compliance obligations. Many reargue the merits of either EPA regulations or Clean Water Act provisions. For example, General Motors filed 27 variance

applications for electroplating facilities. All 27 applications challenge the application of the pretreatment regulations' combined wastestream formula, recently upheld by the Third Circuit Court of Appeals.

Eighteen of the applications seek extensions of the Clean Water Act's three-year compliance deadline. Some of these do not schedule the commencement of prelimary design or engineering until at least two and one half years after the regulations were promulgated. For example, the Fisher Body Division, Detroit Fort Plant states it will "begin Engineering Evaluation to develop solutions for achieving compliance" by September 1983. The Worldwide Truck and Bus Division, Indianapolis Plant states it will submit an "Appropriation Request for Engineering Study" by August 1983.

These applications do not explain why the plants in question could not commence preliminary design or engineering any earlier. We can think of no reason why this should be so. We do know, however, that General Motors has been actively involved in litigation contesting EPA's regulations. We conclude that General Motors waited until it had exhausted all litigation opportunities, and is now using the variance procedure to try to get EPA to ratify its decision to postpone compliance.

If Congress creates a variance procedure, it will open the way for backdoor challenges to EPA's regulations and the statutory scheme. We urge the Subcommittee to refrain from adding an FDF variance procedure to the law.

2. Local program "waivers."

Some have also suggested that the pretreatment program could be improved by adding a "local waiver" provision. Under a local waiver, qualifying POTWs could obtain exemptions from the national pretreatment program. Industrial users, in turn, would no longer have to comply with national categorical pretreatment standards; they would be bound only by locally developed limits on their discharges.

A variety of provisions have been drafted to accomplish this goal, some more carefully than others. Under the more thoroughly considered proposals, a qualifying POTW could only obtain a local waiver if it:

1. had completed an industrial waste survey and obtained EPA approval of its pretreatment program;

2. met secondary treatment requirements;

3. enforced numerical limits for toxic pollutants entering the POTW;

4. met water quality standards for each of the toxic pollutants exiting the POTW; and

5. safely disposed of its sludge.

Initially, EPA would determine the pollutants to be covered and the monitoring requirements for their detection. A qualifying POTW could then apply for, and obtain from EPA, a two year stay of enforcement of the national categorical pretreatment standards. At the end of the two years, the POTW would submit a complete application for approval of its waiver. EPA would have

60 days to approve or deny the application.

The Senate Environment and Public Works Committee foresaw serious problems implementing a waiver, even under the more carefully drafted proposals, and ultimately deleted such a provision from the bill reported out of Committee. We urge this Subcommittee to reject the proposal as well. The waiver is premised on the notion that questions about eligibility can be resolved quickly, freeing qualifying POTWs to proceed with their local programs and keeping disruption of the remainder of the program to a minimum. But any number of events could disrupt this carefully constructed scenario. For example, if EPA failed to promulgate the initial guidelines on time, POTWs would not be able to develop their applications and the entire program would be thrown into confusion. This concern is not unfounded since EPA's track record of adhering to statutory deadlines leaves much to be desired.

Even if EPA met its initial deadlines, an aggrieved party could still challenge EPA's guidelines in court, creating uncertainty about program requirements. If a court subsequently agreed with the litigant, the program could be significantly disrupted years after enactment of the Clean Water Act Amendments of 1983 or 1984.

The problems do not end there. What if EPA and the POTW disagree on whether a local program qualifies for a stay of enforcement? During the years it takes for litigation to unfold, what obligations does the industrial user meet -- the federal or

local standard? The two standards may have different but nonetheless significant financial implications for the industrial user. If local numbers are less stringent, many industrial users may decide to cast their lot with the POTW, taking their chances on the outcome of any lawsuit. The job of enforcing the federal standards would then be considerably complicated.

The same problems arise if EPA decides to deny the final application for program approval or to establish conditions on a grant of approval which may be unacceptable to the POTW. Indeed, the short time allowed for review and approval of a POTW's application leaves EPA and local government with little room to resolve their differences.

In short, we question whether a waiver provision is workable. Enactment of a waiver may only postpone the day when adequate pretreatment standards are in place in the majority of POTWs with significant industrial influent.

A second and related concern is whether waivers will provide the same level of protection against toxics as the national program. The waiver will be of little use to POTWs with numbers more stringent than the national categorical pretreatment standards. Section 510 of the Clean Water Act already protects those numbers from changes merely because EPA promulgates less stringent pretreatment standards. Instead, it is the POTWs with the more relaxed standards which will be pressured by industrial users to obtain a waiver from the federal program.

A POTW facing this pressure need only show that it complies with secondary treatment requirements and that it has an approved local pretreatment program in order to qualify for the two year stay of enforcement. No one knows precisely how many POTWs can meet this test, but the number is potentially large. Over 1,400 POTWs have installed secondary treatment -- more than half of the plants that are required to develop a pretreatment program.* A much smaller number have received EPA program approval. But many have either completed their applications or taken at least some of the steps needed to obtain EPA approval. In fact, an EPA consultant concluded over one year ago that 79% of the POTWs with a flow greater than 5 mgd have made "substantial progress" toward obtaining program approval, and another 45% of the smaller POTWs required to develop a local program have made similar progress. If EPA continues to work with local municipalities, many POTWs will be in a position to obtain program approval by enactment of the Clean Water Act Amendments of 1983 or 1984.

These POTWs will then face a considerable task developing the local program requirements necessary to obtain a waiver from the federal program. They will have to develop water quality standards, often from scratch, to assure that toxics are not

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* Many of these POTWs may not qualify for a waiver because they are still not meeting their NPDES permit limits. Seventy percent of POTWs violate their permits, half more than 10% of the time. Many of these plants have become obsolete or overloaded. Others experience recurring operation and maintenance problems; over seventy percent of the plants in this category attribute at least some part of the problem to industrial influent. Thus, the task of sorting out which POTWs actually comply with §301 of the law will not be an easy one.

simply passing through the POTW in dangerous amounts. The states have done little to assist them in this effort in the decade since the Clean Water Act was passed. For example, lead, cyanide, and cadmium are the most heavily regulated pollutants in waterways, but only 16 states have issued water quality standards for them. Other pollutants are less frequently addressed; only six states have water quality standards for silver. Thus, eligible POTWs will generally have to rely upon site-specific numbers developed especially for the waiver application

The task of determing what constitutes a "safe" method of sludge disposal will not be easier. The cities most likely to be interested in an "opt-out", those with many industrial users, are also those most likely to have a sludge contamination problem. The exact magnitude of this problem is difficult to estimate since as many as 30% of the POTWs may not have even sampled their sludge. But in one EPA study of 40 well-operated POTWs, 24 priority pollutants were detected in more than 50% of the sludge samples. Some -- such as copper, lead, silver, and zinc, -- appeared in all sludge samples. The concentration range of these pollutants was considerable; toxics reached concentrations as high as nine million ug/l.

Federal benchmarks to guide the disposal of contaminated sludge are virtually nonexistent. EPA has developed regulations for cadmium and PCBs applied to land, especially on food-producing crops. An EPA study concedes that at least seven other metals as well as toxic organics can be considered "contaminants

of concern" in land application of sludge. But the guideline-setting process for these pollutants has not yet been initiated. Nor is EPA any further along in developing guidelines for distribution and marketing of sludge, even though such practices go on uncontrolled in almost all states. So POTWs will have to sample their sludge, identify the toxics of concern, determine what adverse effects to anticipate from these pollutants, establish concentration limits which protect against these effects, and determine whether different methods of disposal alter their concentration limits.

As you can see, much of the information necessary to determine the adequacy of a local program will have to be developed on a case-by-case basis for the waiver application. We doubt that POTWs have the resources to generate adequate data within the short time frame contemplated by the waiver bills. And, even more important, EPA lacks the ability to review and approve these applications within 60 days.

Lengthening the review process will only extend the period of uncertainty and program disruption generated by the existence of a waiver. But pressing local governments, states, and EPA to do the job within an unrealistic time frame means that the review process is likely to degenerate into a paper-pushing exercise, offering only the illusion of control.

Finally, the resources needed to administer a waiver program would be substantial. An internal EPA analysis concluded that $13.5 million would be needed in FY 84 and another $13.5 million

in FY 85 to process waivers if 600 POTWs applied. If the initial screening test is relaxed, then even more POTWs could apply for waivers, and the cost of processing applications would increase accordingly.

This is a high price to pay for flexibility, particularly when EPA has yet to develop long overdue categorical pretreatment standards and sludge disposal regulations. We urge the Committee to direct EPA to put its resources into programs which will protect public health and the environment, rather than into a waiver program which may well undermine the adequacy of pretreatment efforts nationwide.

3. Special provisions for "integrated facilities."

Since 1978, EPA's pretreatment regulations have contained a "combined waste stream formula" designed to fit "integrated facilities" (i.e., those which choose to combine waste streams from several industrial categories) into the category-by-category regulatory approach of the pretreatment program. The formula enables a facility to adjust the discharge limit set by a categorical pretreatment standard whenever the waste stream regulated by that standard is combined with wastes which are either regulated by another categorical standard or not regulated at all.

The formula recognizes that diversified industrial facilities may have many reasons for combining waste streams (e.g., cost-efficiency, space-saving, or engineering reasons).Not all combined waste streams represent sound engineering or

economics, however. Some avoid treatment of toxic pollutants through dilution. For example, if a waste stream with a high concentration of a pollutant is mixed with another waste stream which does not contain that pollutant, or which contains it only at low concentrations, the addition of the second waste stream would dilute the pollutant but would not remove or treat it. In other cases, components of one waste stream may inhibit treatment of toxic pollutants in another.

EPA's formula gives integrated facilities flexibility to keep separate but compatible waste streams together. The formula does not, however, permit <u>any</u> combination of waste streams. Combinations which would prove to be incompatible for treatment purposes or which would dilute waste streams without treatment are disallowed.

The U.S. Court of Appeals for the Third Circuit recently completed an exhaustive examination of the formula and concluded that the Administrator, charged with the complicated task of regulating a vast array of indirect dischargers within specified time limits, made a rational choice in selecting the formula. Now, some industrial facilities propose that the Clean Water Act be amended to give special treatment to integrated facilities. They suggest that integrated facilities have some extension of the law's compliance deadline. (Some would go so far as to suggest that integrated facilities face no compliance obligations until <u>all</u> of the categorical pretreatment standards are in place).

This proposal should be resisted because:

- The combined waste stream formula makes sense.

It allows integrated facilities to keep waste streams from several processes together as long as the waste streams are compatible for treatment purposes. The original formula was substantially revised, at industry's request, to provide flexibility while preventing sources from avoiding toxic pollution controls through dilution or through combinations of waste streams which reduce the efficiency of the best pollution control technology for toxics.

- Repeal of the formula would delay important toxic pollutant controls.

Electroplating facilities -- sources of such well-known toxics as lead, cadmium, cyanide, copper, nickel, chromium, and zinc -- must meet categorical pretreatment standards by June 1984. Repeal of the formula would allow integrated electroplaters to postpone compliance until three years after the last categorical pretreatment standards are in place (1987 or later).

- Repeal of the formula would create economic disparity between facilities in the same industrial category.

Nonintegrated electroplating facilities must meet categorical pretreatment standards in 1984. As EPA told the Third Circuit Court of Appeals: "Allowing integrated facilities an additional year and one-half to come into compliance might place the smaller and more financially vulnerable nonintegrated facilities at an unjustifiable competitive disadvantage."

- Repeal of the formula could have far-reaching consequences for EPA's entire pretreatment program, delaying categorical standards that have taken a decade to develop.

The combined waste stream formula, by its very nature, applies not only to electroplaters, but also to other industries which combine wastes from several processes. Categorical pretreatment standards have recently been issued or proposed for eighteen other industries besides electroplaters. Repeal of the formula may require EPA to subdivide these industrial categories or otherwise redo portions of the rulemakings.

- Repeal of the formula would reward polluters who litigated instead of installing pollution controls and lost.

Several industry parties unsuccessfully petitioned the U.S. Court of Appeals for the Third Circuit to extend the compliance deadline for electroplating facilities. These parties now face a 1984 compliance deadline. Since they may not have begun to install the necessary pollution controls, they may now ask Congress to give them relief. Granting their request would reverse the well-established precedent that a polluter who

litigates under the Clean Water Act litigates "on his own time." It would make it more difficult for EPA to obtain voluntary compliance when future standards are set.

- The combined waste stream formula does not, as some have alleged, unfairly subject industry to a "moving target."

The formula assumes that technology can treat a toxic pollutant from several waste streams with the same efficiency unless one of the waste streams significantly dilutes the combined waste stream or contains other substances which impair treatment. Industries whose combined waste streams prove "incompatible" can: segregate the streams, raise any unforeseen problems in the rulemaking proceedings on future standards, (EPA must consider costs in setting each standard), or act prudently when selecting the technology they will install to meet the first standard. All Phase I standards have been issued in at least proposed form.* They do not get more stringent as a rulemaking proceeds, so an industry will not be surprised by more extensive control requirements if it plans ahead now.

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* Phase II standards for the plastics molding and forming category have not been proposed yet. However, most of these processes are "dry"; those that are wet are generally dilute streams which are inappropriate for combination with more polluted waste streams.

In short, there is no need for a special amendment for integrated facilities. Substantial delay, disruption, and inequity would result if one were enacted. We therefore urge the Subcommittee to reject such proposals.

In closing, we would urge one amendment to the pretreatment-related provisions of the law: Congress should pressure EPA to issue regulations for the safe disposal of contaminated sludge.

EPA's Regulatory Impact Analysis of the pretreatment program concluded that "virtually all of the metal priority pollutants removed by the POTW collect in the resulting sludge stream." In fact, the high rate of dilution in POTW influent often masks potential sludge contamination problems. EPA's Regulatory Impact Analysis found:

> Several priority pollutants which were reported below their detection limits in most POTW influents regularly were quantified in sludge streams. Pollutants exhibiting this tendency include antimony, arsenic, silver, selonium, phenanthracene/anthracene and pyrene. For example, arsenic was measured above its detection limit in 15 percent of all influent samples, but in 94 percent of all sludge streams.

Section 405 of the Clean Water Act required EPA to develop comprehensive guidelines for sludge use and disposal by 1978, but EPA has yet to do so. We urge Congress to:

- set a new, realistic date for issuing the regulations,
- require EPA to identify and address all toxics in sludge, not just the most common heavy metals, and

- direct EPA to issue regulations which protect public health and the environment from any adverse effects from these pollutants.

The Senate Environment and Public Works Committee addressed the question of sludge disposal in its bill, giving EPA a new date for setting guidelines. We urge this Subcommittee to address the question as well.

TABLE I

SUMMARY OF ADVERSE EFFECTS OF SELECTED TOXIC POLLUTANTS IN POTW EFFLUENT

Chemical	Carcino-genicity	Muta-genicity	Terato-genicity	Other Reproductive Toxicity	Neuro-toxicity	Toxicity to Other Organ Systems
Arsenic	+	+	+	+	+	+ skin
Benzene	+	+	+	+	+	+ blood
DEHP		+	+	+		
Cadmium	+	+	+	+		+ lung, kidney, (liver)
Carbon Tetrachloride	+	+		+	+	+ liver, kidney, eye
Chloroform	+		+	+	+	+ liver, kidney, skin, heart, blood
2-Chloro-phenol	+					
Chromium	+	+	+			+ skin, kidney, liver, respir-atory tract
Dibutyl Phthalate			+	+		+ blood
2,4-Dichloro-phenol	+	+				+ liver
Lead	+	+	+	+	+	+ kidney, blood
Mercury	+	+	+	+	+	+ kidney
Methylene Chloride			+		+	+ liver, kidney cardiovascular system
Nickel	+	+		+		+ liver, skin
Phenol	+			+	+	+ liver, kidney
Tetra-chloroethylene	+	+	+	+	+	+ liver, kidney

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Chemical	Carcino-genicity	Muta-genicity	Terato-genicity	Other Reproductive Toxicity	Neuro-toxicity	Toxicity to Other Organ Systems
1,1,1-Trichloro-ethane		+				+ liver, kidney, cardiovascular system
1,1,2-Trichloro-ethane	+				+	+ liver, kidney, lung
Trichloro-ethylene	+	+			+	+ liver, skin, kidney
2,4,6-Trichloro-phenol	+	+				
Vinyl Chloride	+	+	+		+	+ liver, kidney

Mr. ROE. Please proceed.

TESTIMONY OF JAMES TAYLOR BANKS, SENIOR ATTORNEY, AND FRANCES DUBROWSKI, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL

Mr. BANKS. Thank you, Mr. Chairman, good morning.

As always, it is a pleasure to join the committee to discuss the Clean Water Act.

As you may realize NRDC has been following every detail of this statute for some 10 years, and while we realize that 10 years pales in comparison to the experience we see across this table, it is a considerable background against which to assess the various amendments that are before the committee this morning.

From that perspective, it is our view that the committee has never been in a better position to take up these questions—principally because you have in H.R. 3282 possibly the best collection of initiatives for which one could ask. We support that bill as much for what is not in it as for what is in it. And two of the most important things that are not in it are the so-called opt out from the national pretreatment program and the BAT variance, which we think is a very bad idea, and about which I will have more to say in a moment.

H.R. 3282 can be improved, obviously, and two of the issues to which we hope you would pay the most attention are provisions to control nonpoint sources of pollution, along the lines of Mr. Oberstar's initiative, and a provision to prevent pollution backsliding from current permit levels to weaker standards that may be issued in the future.

In the brief time we have this morning, Mr. Chairman, I would like to concentrate on three issues. The first is construction grants funding. H.R. 3282 restores the authorization of funding to meaningful levels for fiscal year 1984 and beyond, and we support that wholeheartedly.

You may recall that in the 1981 hearings before this subcommittee, we testified that, in our view, cutting back the Federal support for this program and cutting the matching share for the Federal Government was a big mistake, and we still think it was a big mistake. According to the 1980 needs survey, the Federal share of the backlog secondary treatment and advanced secondary treatment needs in this country is something on the order of $24 billion. That is the nut. That is the amount that the Federal Government ought to be taking very seriously. At present funding levels, we have calculated that because of the effects of inflation, it will require approximately $53 billion and 22 years to eliminate that backlog, because if you spend a little bit along over the years, the remaining amount to be spent goes up and goes up, and it ultimately will take over 20 years to meet those needs. We think it makes no sense to take longer to do the job and virtually double the price tag. It makes no sense from the standpoint of water quality and no sense for the Federal budget.

We either have a real Federal commitment to cleaning up this backlog or we do not. We think that H.R. 3282 stands for the proposition that the Federal Government intends to be a genuine part-

ner in this program, and we urge you to support and adopt the restoration of that reauthorization level.

Second, there are a whole set of questions surrounding what is known as the BAT-toxic program. This is the centerpiece of the clean water strategy for dealing with toxic industrial discharges. One of those issues is a request we expect you will get from the administration for a new variance called the fundamentally different factors variance. I will not spend any time on it because Ms. Dubrowski is really the expert and will go into it fully, but I would like to deal with two other fairly related questions. The first is the need to extend deadlines for compliance with BAT, and the second is a water quality based variance being proposed by a variety of industrial interests.

Briefly, we think H.R. 3282 takes the right approach to the deadline extension question. There is no dispute that the current 1984 compliance deadline for BAT must be extended. It has to be extended because EPA has taken far longer than expected, and than required, to issue the EPA effluent standards with which industry must comply. In a few important cases, those guidelines will be issued after 1984, leaving absolutely no time for compliance. The questions are how best to extend the deadline and how far.

Our view is that there should not be a single deadline because EPA is issuing the relevant regulations over a span of 4 years. Some were out as early as 1981. Others will not be out until 1985. A single deadline gives some sources far longer to comply, and others far too little time to comply, or indeed both.

In our view, the compliance question ought to be governed by a rolling compliance period that is triggered by EPA's promulgation of the regulations. Each industry category ought to be given the same amount of time to comply, and that time should be triggered by issuance of the regulations. If a source can comply sooner, it should be required to do so, and the statute should state that very clearly.

Three years from promulgation of the regulation is the appropriate amount of time. The EPA Deputy Administrator testified on the Senate side that 3 years, or in many cases less, was the appropriate amount. Many witnesses have said before this committee that 3 years is probably enough time to issue the permits and allow sources to construct the facilities and achieve compliance. We have not been persuaded that there is a need for more than 3 years, and in this respect we disagree with Mr. Oberstar's initiative which would provide more than 3 years for some industries, notably the steel industry. If there is such a need, we think the witnesses should come before this committee and present it. And over the last 2 years, we have not seen it.

As to the variance from BAT, the principal proponents are members of the chemical industry. We think it is a very bad idea to provide a toxic variance in this statute. Congress considered that question in 1972, and said no. It was brought up in 1977, and Congress not only said it would not create new variances from toxic requirements, but it went back and made sure that existing variances from toxic requirements no longer were available. We think Congress should say no again—principally for three reasons.

First of all, we do not see where variances are needed. The best available technology regulations are flexible, and they are, by definition, economically achievable for the sources that must comply with them. Moreover, the regulations are carefully targeted by EPA. The agency does not regulate every source. It first looks to see if there are serious amounts of toxic pollutants being discharged by those sources, and whether regulations make sense, and they then drop a large number of sources because they are not of national priority. As a result, we have regulations that are targeted at the principal causes of pollution in the country. This is not overkill.

Second, a water quality based variance from BAT cannot be carried out at the present time. Mr. Ruckelshaus has said, in connection with the pretreatment program, that the tools, the scientific benchmarks and the analytical techniques are not available to make such a variance work. The same holds true for BAT. States, by and large, do not have toxics criteria in their State water quality standards, and those are the scientific benchmarks one would need in order to decide how much of a variance from BAT is appropriate. EPA has said that it may take 10 years or more to develop the kinds of scientific tools and benchmarks that would be needed to process these variance requests.

Third, a variance of any kind, but particularly one as complicated as this, would be a tremendous resource burden on EPA. The Agency has estimated that it would take about 600 people per year to process what it believes will be a substantial number of BAT variances, if there is to be such a provision.

Given the lack of need for such a variance, given the scientific difficulty of implementing it, and given the delays that go with addressing those tough scientific questions, we think 600 people a year is a terrible waste of EPA resources when they are spent to detract from the stringency of toxic controls.

Turning then to the third point—that is a series of issues related to water quality standards and post-BAT toxics permitting.

There is no secret that the Administrator of EPA has struck a bargain with the Senate Committee on the question of water quality standards. As you well know, EPA has issued new regulations on this subject. The Senate has indicated that it probably will withdraw the amendments that are now in the Senate Committee bill which would have forced that result, and the ball game is pretty much over on the Senate side.

That bargain, of course, does not apply on this side of the Capitol. We think you should stand back from that bargain and you should very carefully consider the need to go forward with the kinds of initiatives you find in H.R. 3282 on this subject.

First of all, as the events of October 1982 indicate, regulations can be changed. The past Administrator of EPA and her staff decided that longstanding policies under the statute ought to be drastically changed, and they issued a proposal that ultimately precipitated the events of last week. That can happen again as long as cean water policies are placed in regulations and not in the act itself.

Second, rules can be reinterpreted by the courts. It is much more difficult for a court to find hidden meaning in statutory language

where Congress has been clear in setting forth the policies it finds important in this statute.

Finally, the regulations that Mr. Ruckelshaus has submitted for your consideration, and in connection with the bargain on the Senate side, fall short of the protections provided by H.R. 3282.

First of all, while the pending amendment would require numerical criteria in State standards for toxic pollutants, the EPA regulations would permit States to either use numerical or narrative standards. A narrative standard is a statement in a regulation that says, for example, "these waters shall remain free of toxic pollutants." It is very difficult to enforce a narrative statement, and EPA's plan is to enforce it through fairly radical biomonitoring techniques. These techniques have real promise, and it is one area of research and development we are encouraging EPA to go forward with. But they are virtually untried. They have no provisions for protecting human health, and no one knows how long it will take to use them or how much it will cost. We think, for that reason, affording the States a choice is an unwise policy. Accordingly, we urge you to continue considering H.R. 3282 and its stress on numerical toxic standards.

Second, in two respects H.R. 3282 is much stronger than the EPA regulations in protecting the cleanest waters we have. There is in this statute a concept we tend to call antidegradation, and it says that for the cleanest waters, and particularly those that are considered outstanding national resources, there shall be no degradation except in very extreme circumstances. The EPA regulations are not as strong as the pending amendment. In particular, the bill would require that there be consideration of alternatives and of the water quality impacts any time a State proposes to allow degradation in the waters of a State park or a national park or other equally important ecological areas. The regulations would permit more degradation and not require States to justify degradation of those clean waters in the same fashion.

In sum, we think that H.R. 3282 ought to be, with respect to these subjects, the principal vehicle for this committee's consideration. We think Congress ought to speak on these national policy issues, rather than leave them to the whims of administrative negotiation and judicial interpretation. And we think these issues are important enough for you to assign them a very high priority in designing amendments in this committee.

Finally, as to the post-BAT toxics-control question, H.R. 3282 has what we think is a fine approach. The question is, Once BAT is in place, do we still have water quality problems out there? If we have them, what should we do about them, where are they, how bad are they? What H.R. 3282 says to Bill Ruckelshaus is: First, go find the worst locations, and find out what toxic pollution is still preventing people from using the water as we say they should be able to. It says, second: Figure out who is causing that problem, which pollutants are involved, how much of them are being discharged. And third, it says: Use your existing authority under this statute, in cooperation with the States, to figure out how much of a reduction in those remaining toxic discharges ought to take place so that the waters truly are safe for fishing and swimming.

H.R. 3282 leaves the Administrator and the States a great deal of flexibility as to the kinds of remedies they will require. What it does not leave them is the flexibility to decide either to do nothing about these remaining problems or to take another decade to figure out where they are. It requires Bill Ruckelshaus to stand up and give the public some confidence that, when we say a stream is safe for fishing and swimming, they can really count on that, and particularly in terms of toxic pollution.

That summarizes the high points of the written statement. I will be pleased to answer any questions at the appropriate time, but now I would like to yield to my colleague, Ms. Dubrowski.

Ms. DUBROWSKI. Thank you, Mr. Chairman, and members of the subcommittee. It is a pleasure to be back testifying.

As Mr. Banks said, my testimony will address the pretreatment program which is one of the Clean Water Act's——

Mr. ROE. Let me interrupt the witness. We have a vote on for the members. It is a quorum call followed by a 5 minute vote on the Harkin amendment. Rather than have you start and then break the continuity, suppose we go over and take care of this matter of state.

We will be back in 15 to 20 minutes.

[Short recess.]

Mr. ROE. The committee will reconvene.

We were just about to hear from Ms. Frances Dubrowski from the Natural Resources Defense Council.

Ms. DUBROWSKI. I was saying that the pretreatment program is, in our view, one of the Clean Water Act's most important programs for controlling toxic pollutants. It is now at a critical turning point. The national categorical standards are being issued; local POTWs are obtaining program approval from EPA; and the general regulations that establish the basic structure of the program were, as recently as this September, upheld by the U.S. Court of Appeals for the Third Circuit in all major respects but one. The one respect in which the regulations were not upheld had to do with the fundamentally different factors variance and I will talk about that in a minute.

In short, we are making progress under this program. It is important that Congress keep the pressure on for fuller pretreatment of toxics.

Our testimony today will address three proposals which either have been, or are likely to be, put before this committee. Each would seriously undercut the toxic pollution protection afforded by the program and should be rejected by the committee.

First, the fundamentally different factors variance. The Clean Water Act places a special emphasis on control of toxics. In 1977, Congress told EPA it could not grant variances from the toxic pollution protections of the statute. This provision makes sense. It places a premium on speed and uniformity. Speed, because the standards are set in one proceeding. Once they are in place, everyone can turn their attention to compliance, rather than dealing with attempts to relitigate the merits of the standards. Uniformity, because the standards are set by a single group of experts at EPA and reviewed by a single court of appeals.

This scheme offers industry certainty. Those who embark upon a pollution compliance program know their competitors will have similar guidelines and will not get different results by appealing to different decisionmakers. It still maintains flexibility. If new information comes to light, an industry could petition EPA or the courts for a change in the standards.

This was Congress' scheme. EPA invented one of its own, one which was, as I mentioned, recently held to be illegal by the Third Circuit Court of Appeals. Under EPA's scheme, if EPA failed to consider information in a rulemaking, or if the information was not presented to EPA, EPA could later consider that information as a reason for adjusting the pretreatment standards applicable to an industrial facility if the information was fundamentally different from that which was considered by the EPA. Because the third circuit held this was inconsistent with Congress' scheme for strict control of toxics, proposals may be made to you suggesting that the subcommittee add a variance provision to the law. We urge you to resist such proposals.

A variance would delay standard-setting for industrial facilities. It would take a year, under the best of circumstances, probably much more on the average, to go through the simple steps of processing a variance application as they have been laid out in EPA's regulations.

The processing of variances would consume considerable administrative resources because the task of analyzing the data base behind the standards would not only be done by EPA headquarters personnel, it would be duplicated by State, regional and local officials.

A variance would not simplify the task of setting standards for the bulk of sources. That is because individual plant differences will crop up. They do now and have been used to justify separate subcategories even where only one or two plants were involved.

A variance is not necessary. EPA's rules already contain contingency factors—extra time, margins of error—in case individual plants have process differences.

What a variance will do is create a loophole in the program, a way for EPA to postpone decisionmaking with respect to controversial sources, a way for industry to get a second bite at the apple in challenging its pollution control obligations.

One very telling example, General Motors recently filed 27 variance applications for electroplating facilities. Many seek extensions of the 3-year compliance deadline for controlling toxics. In some of those variance applications, dates for commencing engineering studies or preliminary design or dates for submitting appropriation requests for engineering studies begin 2½ years after the standards were promulgated.

We conclude from reading those various applications and from the litigation we have been involved in with GM and other parties, that GM waited until it had exhausted all litigation opportunities before it began its compliance program, and is now using the variance procedure to try to get EPA to ratify its decision to postpone compliance. If Congress puts a variance provision in the law, it will open the door to such challenges.

A second proposal, one we discussed in detail when we testified before you last year, was the notion of creating local program waivers. Some have suggested that qualifying POTW's be able to gain exceptions from the national program requirements. Then their industrial uses would only have to meet the local pretreatment numbers. This proposal was considered and rejected by the Senate Environment and Public Works Committee. They foresaw serious problems implementing a waiver.

It will raise difficult questions which will take years to resolve through the courts. It will consume substantial administrative resources. An EPA estimate suggests that as much as $13.5 million in a fiscal year will be necessary to process the local program waiver applications.

But, most important, it will not provide the same level of protection as the current program. That is because the benchmarks needed to judge the adequacy of local programs, the water quality standards, the sludge disposal guidelines, are simply not in place. Developing them will take sometime. We fear that what will happen in the interim with an attempt to process these waivers quickly so as to not disrupt the program is that the processing will degenerate into paper pushing and health and the environment will suffer in the process.

A third proposal which you may hear about is the proposal for special treatment for integrated facilities. Integrated facilities are those that combine waste from unregulated industrial categories with wastes from either another regulated industrial category or a process that is not regulated under the categorical standards at all. Since 1978 EPA has dealt with integrated facilities through a combined waste stream formula. The formula allows the discharge limit in a categorical standard to be adjusted, taking into account the other waste streams. This formula was recently exhaustively examined by the Third Circuit Court of Appeals which upheld the formula. The formula gives plants flexibility to keep different waste streams together, provided they are compatible for treatment purposes. It does not allow facilities to avoid pretreatment through dilution or through combining incompatible waste streams.

Some have proposed that there be a special provision in the Clean Water Act for integrated facilities, a provision which would allow these facilities some deadline extension—some would go so far as to say no deadline until all the pretreatment guidelines are in place.

We believe these proposals should be rejected. Repealing the formula would delay controls on toxics for facilities, such as electroplating facilities, that have had ample time to come into compliance. Repealing the formula would create economic disparity between plants located within the same industrial category simply on the basis of whether a facility chose to combine waste streams or not to combine waste streams. Repealing the formula might require EPA to go back and redo part of the rulemakings on the categorical standards which have taken a decade to put on the books. It would also reward those integrated facilities which have not come into compliance, which have instead tried to litigate, and which now, having exhausted their litigation opportunities, may be coming to the Congress asking for an extension of time. It would

reverse the long-standing principle in this statute that you litigate on your own time.

Finally, in closing, I would like to mention one change we would like to see to the pretreatment-related provisions of the statute. That is, the Clean Water Act in section 405 requires EPA to set sludge disposal guidelines by 1978. EPA has not done so. The Senate Environment and Public Works Committee considered this question and set a new deadline for EPA to propose those standards. We would urge this subcommittee to explore that question as well, to set a new and realistic date for the standards, and to require EPA's standards to protect health and the environment.

Thank you, and I will be happy to answer any questions you might have.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you.

Considering the issue of extending the BAT compliance deadlines, some have argued that focusing on the date the final regulations are promulgated for any given discharger is not the most appropriate point from which to measure the amount of time that will be necessary for a discharger to design and construct necessary treatment facilities. Instead, it is argued that the point of focus should be to the date on which the discharger's NPDES permit terms have been finalized.

What is your reaction to this latter proposal in terms of how much time the committee should consider would be necessary to negotiate the terms of compliance?

Mr. BANKS. We have given that a good deal of thought, and we hope you would oppose any notion that the compliance period should be triggered by issuance of the final permit. Here is why.

It takes a certain amount of time to issue these permits. EPA's estimate in the past was that it takes 6 to 9 months on the average where you have a regulation that furnishes most of the basis for the permit. But time is elastic, and what determines whether it is a short time or a long time, in most cases, is whether the industrial source applying for that permit wants the permit or does not want it. There are administrative hearings that could be conducted. There are appeals to U.S. courts of appeal which may take years to resolve. And if a source wants to stretch out the time to process a permit, it can do that. We think that the compliance period ought to start from issuance of the regulations, so that there will be a strong incentive on the part of those sources to get the permit expeditiously, rather than to exhaust all opportunities to extend the amount of time for processing the permit.

EPA has been asked this question in testimony before the Senate committee, and my recollection is that in their judgment, the period of 2 to 3 years from issuance of regulations is sufficient both for processing the permit and for constructing and installing the treatment facilities. I trust EPA would agree that this incentive to get permits issued expeditiously should be foremost in the Congress mind, and for that reason, that the compliance period should be triggered by the regulations, not by issuance of the permit.

Mr. PACKARD. Could that possibly lead to a delay then in issuing of the permits?

Mr. BANKS. Our view is that the permits will be issued more promptly if the sources want those permits to be issued.

Mr. PACKARD. By compliance——

Mr. BANKS. In other words, if I have 3 years to comply, I want to find out just as soon as I possibly can what my permit limits are. I do not want my construction period taken up in arguments with the State about what those final limits will be. I want them soon so I will have that 3 years to meet the requirements. I will be pushing strongly to get EPA or the State to give me that permit. On the other hand, if my construction and installation period begins when they finish writing the permit, then I will want to stretch that period out to delay those expenditures.

Mr. PACKARD. The testimony presented earlier made the point that implementing Federal categorical pretreatment standards in lieu of the city of Chicago's existing pretreatment program could result in a net reduction of control requirements for industrial facilities at a substantially greater program cost for operations.

If this situation is true with respect to Chicago and other publicly owned treatment works, would not the most environmentally responsible and fiscally sound public policy be to allow the stricter and more cost effective locally established programs to be implemented?

Ms. DUBROWSKI. I do not see how the premise can be true. Implementing Federal categorical standards is not going to reduce control requirements. The Clean Water Act already specifies that if there are more stringent State or local provisions out there, than those provisions would govern, so that the categorical standards will simply bring less stringent local numbers up to these uniform national numbers. It is not a good idea to depart from this scheme. Those Federal numbers make sense. They provide a level of uniformity to the program. Trying to depart from the Federal numbers and to substitute numbers will lead to all sorts of problems.

For example, in terms of how adequate those local programs are, if you go by something other than the numbers themselves, but look at water quality or sludge, the benchmarks to make those decisions are not in place.

Also, one other point to make is that you can look at different numbers and the two numbers themselves may not tell you all you need to know about what is or is not more stringent. You have to look beyond to the enforcement that goes with the numbers and whether there are adequate resources to carry out an enforcement program.

Mr. PACKARD. Do you feel there could be conflict between the Federal regulations and standards and those of local jurisdictions, like in the Illinois case?

Ms. DUBROWSKI. Local jurisdictions, many of them have their own numbers. Some appear on paper to be more stringent. Some appear to be less stringent. So when the Federal categorical standards are implemented, those that have more stringent numbers need not change them. Those that have less stringent numbers need to implement the Federal standards.

Mr. PACKARD. Thank you.

Mr. ROE. I want to thank you very much for your substantive testimony. You have been excellent witnesses and we appreciate what you are going to do.

The subcommittee is going to recess until 2 o'clock. The main reason we have to do that is many members have things to do on the floor. That is the best we can work out.

When we return, our first panel will be the Sierra Club, at 2 o'clock.

[Whereupon, at 12:35 p.m., the subcommittee recessed, to reconvene at 2 p.m., the same day.]

AFTERNOON SESSION

Mr. ROE. The subcommittee will resume. We will hear now from Mr. Michael Garabedian, Sierra Club Northeast Regional Office, and Mr. John Saxton, member, Interstate Conference on Water Problems.

The full text of your prepared statements will appear in the record at this point.

[Statements referred to follow:]

STATEMENT OF THE SIERRA CLUB BY MICHAEL GARABEDIAN

Chairman Roe and Water Resources Subcommittee members. My name is Michael Garabedian. I work in the Northeast Regional Office of the Sierra Club.

I will address three main topics using examples from the interconnected New Jersey, New York, Connecticut estuary: first, Section 404, second, ocean outfall discharge or 301(h) waivers, and, third, industrial pretreatment.

WESTWAY FREEWAY PROJECT/SECTION 404

Because Mr. Addabbo and Mr. Green began last week to seek Congressional authorization of a Section 404 loophole for the Westway freeway and real estate project on the lower westside of Manhattan, it is essential that I bring this issue to your attention, even though I had not planned to do so when requesting to testify.

The Addabbo-Green amendment (which amends, at this moment, the Second Supplemental Appropriations Bill) seeks in its language to do two things. First, it requires, as part of the project, that approximately 240 acres of new commercial fish habitat be created in place of the 200 acres that would be filled, along with a two year study to "enhance the likely effectiveness" of the mitigation. Second, it authorizes immediate engineering, planning, design, property acquisition, demolition and removal of man-made structures in the habitat area, tunnel protection construction, and a 39 acre "prototype" fill (17% of the total fill).

The language is precisely worded to revoke the rulings by the United States District Court Judge Greisa and the U.S. Court of Appeals that void the dredge and fill permit and require new environmental impact studies pursuant to the National Environmental Policy Act and the Clean Water Act. I do not wish to dwell on this issue here, since it should be the subject of its own hearing, but I will cover the main issues in a summary manner.

The amendment

The Westway amendment is the wrong way for Congress to intervene in the judicial process.

The Westway amendment is the wrong way for an appropriations committee to substitute a quick, short-cut procedure in place of authorizing committee deliberation.

The Westway amendment is the wrong way to undermine the National Environmental Policy Act, the Rivers and Harbors Act of 1899, and the Clean Water Act through the creation of loopholes in them.

The Westway amendment is the wrong way to administer Section 404, the Army Corps of Engineers, and the Federal Highway Administration. The Clean Water Act permits foiling a special acquatic habitat only where there are no practical alternatives, which is not the case here. Congress should formally receive information on

the alternatives before considering any amendments if it is going to act on this matter at all.

The Westway amendment is the wrong way to ask Congress for help with New York transportation and infrastructure problems.

The Westway amendment is the wrong way to prevent harm to the striped bass fishery. The Army Corps own expert panel and many others agree that a two season study of the area is necessary to determine how fish use the area and what the possibilities are for mitigation—if any. The Westway amendment is the wrong way to improve fish habitat, particularly that of striped bass up and down the Atlantic Coast that use the area in question.

The Westway amendment is the wrong way to force a vote on one of the most important New York Congressional environmental issues.

The Westway amendment is the wrong way for Congress to steamroll over community opposition and to not allow it to be heard.

The project

The $4 billion, 4.2 mile long Westway project is the wrong way to provide for surface transportation on the west side of Manhattan. A $100 million project could be developed on the existing on-land 260 foot right-of-way. Trucks would not be able to continue up the west side drive since commercial vehicles are prohibited. A grade-level alternative would only mean a longer trip of five to ten minutes.

Westway is the wrong way to revitalize the area or to encourage new development and for filling 90 new acres for parks and 100 new acres for development. The area is revitalizing itself, new development is taking place already that does not require a new fill and does not block access to the river, the state indicates that the park may not be built as planned, and there are existing areas, including fills, that could be developed into parkland.

Westway is the wrong way to improve the city's air pollution and truck traffic problems, which would both be worsened during the long construction period. Truck traffic on local streets would be minimally affected compared to a grade-level arterial. The most important way to reduce air pollution is to discourage automobile traffic and to encourage transit use.

Westway is the wrong way to, as the National Marine Fisheries Service says, "threaten the survival of the Hudson River population of Striped Bass." The region's Striped Bass fishery is valued at $100 million annually.

Westway is the wrong way to spend $4 billion. The project should be traded in to the tune of $1.5 billion for transit rehabilitation and bridge, road, and related infrastructure repairs. This would avoid up to $1 billion of borrowed capital and save 10 to 20 cents in terms of fare. New York is 49th in cars per capita—only Alaska is lower.

Westway is the wrong way to create jobs. Authorities agree that a trade in would create as many jobs as Westway, and a Sierra Club study shows that it would create more jobs than Westway.

Westway is the wrong project because Governor Cuomo's own Westway investigator concluded that Westway "has now become a luxury that the City and State probably cannot afford." (April 25, 1983 report by Thomas P. Puccio)

In anything, Congress should react to this issue by having joint Water Resources and Transportation Subcommittee hearings on the 404 issue that the transportation and trade-in issues. The National Environmental Policy Act implications should also be investigated. In this manner, Congress will have a chance to determine for itself whether we are correct in our belief that this is a project that can not survive informed public scrutiny.

OCEAN DISCHARGE/301(h) WAIVERS

I have always enjoyed opportunities to testify before this committee. This time I am glad to address you on the Clean Water Act because it gives us an opportunity to point out that though we disagree with the Building Trades on Westway, we join hands with them in support of the goal of secondary treatment and in opposition to liberal 301(h) waiver provisions.

When sewer service agencies on the Hudson-Raritan-Long Island Sound estuary began to apply for these waivers, the Sierra Club approached it with an open mind. We did this even though we felt that it was not the intent of Congress to allow secondary treatment waivers in estuaries such as New York's.

Now it is clear that waiver applications on these estuaries are not appropriate. Congress should act to prevent further delays and expenditures on 301(h) waivers in these and similar waters since this is an unjustified waste of local, state, and nation-

al taxpayers funds that can only lead to a retreat from the improvements in water quality that have been achieved.

The goal of reaching secondary treatment in these waters must be retained for the same reasons that the waivers must be eliminated here:

We should not take a step backward from the improvements in water quality that we already have achieved. There are signs that water quality in parts of the harbor complex is improving.

We should act only to decrease pollutant loads into these estuaries because they are too delicate and important to receive these kinds of discharges. The estuaries are a sink—they retain and react to toxics and other kinds of loads. The tri-state estuaries have a great number of water quality problems including raw and treated sewage plant effluent, combined sewer overflows (CSOs), urban non-point runoff, industrial point-sources, and so forth. All must be improved if we wish to meet the goals of the Clean Water Act.

If we find that some problems such as CSO's are in need of increased legislative attention and support, new and improved programs to regulate and fund them could be included in the law. New York City's proposal to sacrifice secondary treatment goals and plans with liberal waivers in an unpromising effort to make money available for other improvements such as CSO's may be well-intentioned, but is in error. HR 3282's excellent 301(h) provisions are necessary to protect our estuaries.

It should be noted that the Sierra Club does not support large-scale secondary treatment in the region as an end itself.

We support the use of alternative waste treatment technologies and waste water uses when it is appropriate. In the case of New York City we are not aware of any appropriate alternative technologies, however;

One of the biggest potential problems with the use of 301(h) waivers in estuaries that are stressed and that have a variety of dischargers is that of the "barn door." If EPA granted some, but not all of the 20 to 30 waiver applications in our area, the one denied would soon have their representatives sitting where I am now asking you why they did not get theirs instead of someone else. There are about 130 municipalities in the area who would be asking themselves the same question, as would the industries on individual permits. HR 3282 would prevent this situation.

The public cost of the waiver application process itself is excessive. Municipalities have to spend great amounts of money on these applications. It has been suggested that New York City spent $2 to $3 million on its 301(h) applications, and is spending more now. The city responds by saying it has not spent that much, will not say how much, and says that in any event the data being developed are used for other purposes besides the waivers. In addition to the application cost, state, regional, and federal agencies then have great review costs. This is money that would be better spent on the problems, not on avoiding taking action.

The Hudson-Raritan estuary is an example of escalating public costs resulting from applications and the ensuing battle of the experts. The Interstate Sanitation Commission (ISC) has developed a report that says there is not enough assimilative capacity in the New York Harbor complex for year-round reduced treatment. New York State has also used the same model with similar results. New York City's consultants have now published a report that disagrees with the ISC and the state.

Recently the National Wildlife Federation evaluated all three reports and found that "the City's analysis is not useful for predicting future dissolved oxygen conditions in the Harbor area."

It should be noted that, if anything, the ISC model itself is too liberal. For example, the water samples on which the studies are based are generally taken during daylight hours when the micro plants are producing oxygen. At night there is probably a dramatically increased oxygen demand. Fish, of course, need to survive in our waterways at night;

A major weakness in our area's 301(h) waivers is that the applicants are using a much too limited definition of "receiving waters" affected by their reduced treatment levels. For example, New York City's applications for Red Hook, Newtown Creek, Wards Island, Bowery Bay, and Hunts Point simply would fail to meet their objectives from the outset if they did not include adequate evaluation of the impact of reduced treatment on Long Island Sound since much of the surface flow of the waters into which they discharge enters the sound. All applications in the tri-state estuary are inadequate from the outset, since they do not consider the New York Bight Apex, the Hudson River plume, and the waters along the New Jersey coast as part of the receiving waters for which the impacts of reduced treatment is to be considered.

An historic trend worth noting is that some upper estuary improvements in water quality seem to have been made at the expense of or without helping to improve

lower parts of the estuary. Earliest reports referred to waste problems in the streets and then the canals into which wastes were channeled. At the turn of the century there were serious problems in the Hudson and the other waters around Manhattan. Now the Hudson has improved somewhat, but there are serious problems lower in the estuary. It appears that the historic process has been one of "pushing" pollution impacts further and further down stream from the sources. Given this trend, we need to sample, monitor, and model impacts 301(h) waivers will have as far downstream as the sound and its race area, the lower bays, the New York Bight Apex and the Bight itself including the Jersey shore.

A Well-documented problem with 301(h) waivers is that reduced secondary treatment will lead to increased toxic discharges. Secondary treatment removal of many kinds of toxics could be lost in the waiver process. This leads to my final topic, industrial pretreatment.

Before leaving the issue of estuaries, the Sierra Club would like to note that the ISC plays a key role in tri-state region water quality issues. Their involvement in past, present and future efforts to clean up the estuary is essential. For this reason, the ISC should be named and its role specified in any portions of the legislation that set up interstate estuarine management programs. When we have information that may help to clarify this issue, we will forward it to the committee.

INDUSTRIAL PRETREATMENT

The concept behind industrial pretreatment is sound: that by keeping toxics and other excessive loads out of the sewer system in the first place, we keep then out of the sewer plants, effluent and sewage sludge. Pretreatment is the current frontier of the Clean Water Act. Proposals such as local "opt-outs" would undermine the Act. Based on our evaluation of case studies, if any amendments are appropriate for pretreatment, it is only to strengthen the law.

In New York State there may be only a couple of relatively small municipalities, at most, that have the potential of developing acceptable programs independent of the national categorical standards. These communities have a potentially manageable problem and, unlike most, have the resources to do the scientific investigation, program, and enforceable limitations development that might justify an alternative.

However, it is not justified to have a national program based on this kind of minimal potential.

In most cases, the cost to the community, and the state and national agencies review would be excessive, and not justifiable. An even more critical problem would be the delay such applications would precipitate.

Research program development and denial could take 18 months to two years, and at the end of the period the process of developing a program pursuant to national standards would have to start all over again.

Most pernicious, though, would be the effect of enacting and opt-out program at this time. It could be seen as a boon to the communities that have not submitted programs, and would undercut program development already underway when they were postponed in order to develop and opt-out application.

The problem an opt-out system would have once established are vast to contemplate. The potential problem of forum-shopping alone should discourage lawmaking efforts of this kind.

The first pretreatment questions we should be addressing now are not opt-outs, but are what the status of the present program is and how it is working. The Sierra Club has undertaken a major participation in and study of New York City's proposed industrial pretreatment program as a case study of Clean Water Act implementation. We will be circulating a draft report for comment, and will send one to the committee when we do so.

We hope that the New York City study will serve as a framework for our members to evaluate other programs around the country. If New York is indicative, the EPA has a very large task ahead of itself in order to obtain compliance with the law and program that is only now being implemented not for the first time after years of debate.

Our study's expected findings are:

Great volumes of toxic heavy metals collect in New York City's sludge (3000 or more pounds per day) and pass through New York City's presently operating sewage treatment plants into receiving waters (5000 or more pounds per day—New York has two plants under construction which service areas now account for in the neighborhood of 350 million gallons per day of raw sewage discharge). Thus the city has both "interference" and "pass-through" problems.

The city is enbarking on a program of federally mandated categorical pretreatment regulations that cannot alone solve its sewer system toxic problems.

The city's pretreatment program, as planned, will not meet minimum federal requirements, including general prohibitions, procedural requirements, and legal authority requirements.

The city's program is inadequate and does not meet federal requirements for the following reasons:

1. The city has not adequately investigated potential industrial sources of toxicants, especially sources of mercury, zine, copper, nickel and lead.
2. The city has failed to establish or plan for a system of permits and records that would effectively monitor and control toxic discharges.
3. The city does not have a range of penalties that will effectively deter violations or punish violators.
4. The city's enforcement mechanisms may allow unnecessary delay.
5. The city has not established procedures for future public participation.

Up to this point we have made a number of recommendations to the city for its consideration in developing its pretreatment legislation/ordinance and regulations. While expressing an interest in our recommendations, the city adopted its legislation and program without committing itself to any of our suggestions. The following are examples of our recommendations:

1. Create a duty to continue to identify and regulate all important sources of toxic substances in New York City's wastewater and New York harbor, regardless of source or federal and state standards.
2. Require discharge permits for users (as opposed to "violative permits" which are issued only if a violation is discovered).
3. Increase civil and criminal penalties and the range of available penalties.
4. Create a right of legal action for any citizen wishing to enforce the provisions of this law.
5. Create a public participation program. The program would consist of access to permits and records, publication of significant violations and enforcement actions, and notice of, and opportunity to speak at, hearings regarding the contents or violation of the contents of any permit. This must include participation in the setting of permit limits, including compliance schedules. New York City should be required also to hold an adequate public comment period on their entire program before it is submitted to EPA.
6. Require effluent testing from more sewer users.
7. Expand plans to randomly sample and inspect all sewer users with greater frequency.
8. Eliminate enforcement delay with immediate cease and desist orders and quick notice to the Environmental Control Board of all violations not imminently dangerous and broaden the definition of "imminent danger" to include danger to the environment, receiving waters or animal or plant life.
9. Establish a toxicity surcharge. This could be implemented in a way similar to the present sewer surcharge. Discharges of toxic substances would be charged proportionately to the toxicity of their discharge. A higher schedule of rates could be imposed on dischargers whose toxic pollutants are removed in POTWs. Currently, New York City is paying for the disposal of privately generated toxic sewage. A toxicity surcharge would serve two important functions: it would encourage small industrial and commercial dischargers, untouched by categorical regulations, to change their practices to eliminate the use of toxic substances, and it would be a source of revenue for the pretreatment program. While we do not have full details necessary to justify such a program, it should be considered.

One of the weakest areas of the City's program has been its citizen involvement efforts. Citizens wanting to participate were not well enough informed to be able to participate in a meaningful manner. Reports released for comment were released in far too short a period of time to allow adequate review. We conclude that the City has not taken its charge to involve the public seriously. Whenever there has been a choice between increasing public involvement or expediting the program, public involvement has suffered. The state has not acted in a visible role indicating dissatisfaction with the City public involvement policies. However, we look forward to EPA fulfilling its responsibility in this area, and we have found some receptivity on the City Council to our presenting our position.

Our tentative recommendations to the EPA would be, if the agency certified the city program as it was submitted in May, that the City not be granted control authority status until the following tasks have been completed or included in the city's program:

1. A thorough investigation of sources of toxicants;

2. A plan to effectively control toxicants;
3. An expanded and organized system of permits and records;
4. A wider range of penalties for violators;
5. A plan for quick enforcement and coordination of government enforcement groups;
6. A plan for public participation in the permit process and public access to effluent data.

Judging from our involvement to date, strengthened and/or more finely tuned pretreatment provisions may turn out to be necessary to cure some of the problems. This depends in part on the EPA's commitment to establishing effective programs. We will report to the Committee about the progress of the report in the future.

In closing, Mr. Chairman, I would like to point out the great importance of the pretreatment program to this subcommittee and related areas of jurisdiction. The industrial pretreatment program has the potential of greatly helping to clean up:

The harbor water column for animals, plants, and human food and recreation;

Normal harbor sediments for marine life, shellfish, and human food;

Shipping channel sediments so that the options for dredge spoil disposal from new and maintained channels are increased and so that mud dump site degradation and off-site impact are reduced;

Sewage sludge so that options for its disposal are increased and the degredation of its dump and disposal sites is reduced;

Combined sewage overflows that will contain a much lower load of toxics when the storm surges wash out accumulated settled material;

Problems that result when sewage treatment plants break down or operate improperly;

Raw sewage outflows and inadequate levels of treatment that persist because of funding, scheduling, and other problems;

The New York Bight and its Apex, including the New Jersey coastal waters and the Hudson River and its plume front;

Long Island Sound.

Testimony of the Interstate Conference on Water Problems Concerning H.R. 3282, Amendments to the Clean Water Act

The Interstate Conference on Water Problems is the national association of State, interstate, and local water administrators who are responsible for the conservation, development, and management of water resources. we embrace State and Federal programs which will restore or maintain water quality in order to enhance indigenous aquatic life and water supply uses where such water quality is attainable. Water quality should also support such additional instream or withdrawal water uses as are adaptable to each body of water and consistent with State water use plans. The water quality objective should be to protect water resources and aid water use.

Consistent with this objective, ICWP believes that a balanced water quality and quantity management program will provide environmentally sound protection of the nation's water quality, but in doing so, will not restrict legitimate water use, discourage conservation and reuse of waters, conflict with State water use plans, or prevent authorized water use development.

Practically any water use can affect water quality. Examples range from the obvious discharge of municipal and industrial wastewater; through storm runoff from urban, agricultural, and stripmined lands; to maintenance dredging of waterways and the effects of commercial and recreational vessel traffic; and to the less obvious effects of diversion, impoundments, groundwater pumping, and groundwater recharge. These effects mean water quality planning cannot be done apart from water use planning. Each must support the other. Water quality standards should be formulated to recognize the quality changes inherent in water development and utilization.

Coordinated planning of water use and water quality is unavoidably difficult. There are complex relationships between quality and use that must be understood. There are trade-offs that must be identified and decisions that have to be made. The results will precisely define water uses that are necessary and achievable, along with water quality standards that will support those uses.

Most of this planning and standard setting remains to be accomplished; however, the legal framework is in place. The Clean Water Act stresses sound planning, sets national goals, and provides workable and enforceable tools to implement plans. That is as much as law can do. Federal statutory law should not dictate the outcome

of planning, set standards that must be achieved, designate uses which must be maintained, or prohibit certain uses unless such standards or uses are unquestionably applicable nationwide. These views are particularly pertinent to three sections in HR 3282:

Section 6 concerning water quality standards; section 10 concerning the 404 permit program; and section 11 concerning water quality effects of dams.

WATER QUALITY STANDARDS

A new subsection (B) is proposed to § 303(c)(2) that requires designated uses in effect on January 1, 1983 to be maintained unless a State demonstrates that three attainability requirements cannot be met. ICWP has serious problems with this proposal.

It should be recognized that uses and standards can, and should, change over time. We are a dynamic nation, and our water quality standards and planning program must be dynamic to meet changing needs. Freezing designated uses at any point in time would be a bad policy, and likely counter-productive.

Further, there is nothing sacred about the uses designated as of January 1, 1983. In some cases, the uses in place reflected a great deal of prior State consideration and planning. But in other States, water quality planning was not as far along, and the uses as of early 1983, were only preliminary and interim designations. In some cases, the designated uses may not exist, or have any potential to be achievable. Further planning in most States will confirm or revise these use designations to reflect real facts. Where States are undertaking this process, they should be allowed to proceed without interference. ICWP agrees that the three attainability criteria are valid, but economics alone is an insufficient test of attainability. This is not a complete list. Absent is any consideration of the physical nature of a water body and water quantities which can restrict or even preclude most water uses, regardless of water quality. This proposal will essentially prevent the type of planning and standards revision provided for in the Clean Water Act. The proposal should be dropped.

A new subsection (C) is proposed to maintain water quality in excess of that needed for designated uses. This is a nondegradation policy that again prevents standard setting through a sound planning process. But blanket adoption of nondegradation can have worse consequences than being purposeless. It can prevent designated uses from taking place because a simple water use, in itself, may be the direct cause of the change in water quality. Examples are a temperature change caused by a water supply reservoir, an increase in chlorides from the treated wastewater of a municipal system, and an increase in total dissolved solids resulting from conjunctive use of groundwater. None of these changes significantly affect designated uses if kept within the limits of properly formulated water quality standards. It can be seen that a non-degradation policy of this type is the antithesis of planning for water quality and water use. It overrides planning to dictate an outcome that prevents needed water use and may result in waste of scarce resources.

A new subsection (i) is proposed to § 303. It is a slightly different non-degradation policy than discussed above. It demands that existing uses be maintained no matter what happens. Why should existing uses always be preferred to planned future uses? As water administrators involved in the continuing process of allocating and re-allocating water use, we know that conditions affecting water use and needs change. water use can change dramatically, for example, when an agricultural region urbanizes or industrializes. Thus, ICWP must strongly oppose freezing water use to any particular pattern or point in time.

This same subsection proposes non-degradation of "waters of exceptional recreational or ecological significance". Such a statement is unnecessary. Exception waters will be recognized as such in most States' planning processes and the uses will be protected by appropriate standards. But those standards will recognize the need to protect recreational use, and also the impact of water quality on such recreation uses. Unfortunately, the proposal, again, tries to dictate a particular outcome, and would work contrary to public interest.

SECTION 404 PERMIT PROGRAM

A new subsection (B) is proposed to § 404(b). It specifies decision rules for the Secretary of the Army. He shall prohibit specification of a disposal site if there is an unacceptable adverse effect on the aquatic environment and/or a practical alternative to the proposed discharge. These rules are part of the current 404(b)(1) guidelines and are very difficult to apply.

The proposed legislation is worse still because it lifts decision rules out of the context of the body of the guidelines. The decision rules become totally unrelated to water quality, water quality standards, and designated water uses. Moreover, the "aquatic environment" and "unacceptable adverse effect" have no frame of reference. How can the rules be applied?

Every body of water contains a broad variety of aquatic environments. Some of these environments are very important to indigenous aquatic life, but others are not. Aquatic life, therefore, is a frame of reference. But this is not enough for a workable and understandable regulatory program. The aquatic life to be protected ought to be embodied in designated uses and supported by appropriate water quality standards. Then permit evaluation becomes a relatively simple and rapid process. This section should be dropped.

Six new subsections are proposed for § 404(q). These deal with time limits, interagency coordination, and internal relations of the Corps of Engineers and Department of the Army. ICWP recognizes there are problems with time limits and interagency cooordination. If the agencies are unable to work this out, Congress certainly should impose reasonable requirements.

While recognizing the authority of Congress to organize and oversee the Federal agencies, ICWP would offer some caution regarding the possible over-specification of internal delegation and reporting relationships. The Executive Branch should be left with sufficient flexibility to meet and address changing conditions and future needs, if the program is to prove efficient in the long run. In the processing of permits, ICWP supports increased flexibility for the District Engineer in negotiating with the individual States on matters such as time frames, processing schedules, joint application and notice, and cooperative field investigation and enforcement.

Congress should decide whether responsibilities under the Clean Water Act are delegable or not. If delegation is allowed, it should apply to all agencies. The public needs to know what delegations are made. This can be easily satisfied by agency rulemaking.

ICWP urges the Congress to review the provisions in the Act for State assumption of the § 404 program. We are pleased to work with the Committee in determining what must be done to encourage States to assume this program.

In 1979, ICWP, through the Water Resources Council, conducted an extensive survey of the capabilities of the States to conduct programs equivalent to those mandated by § 404. The States raised many questions regarding the scope of the regulations, the conflicts with existing State programs, the overall practicability of the regulations, and the efficiency of these regulations in effecting improvements in the quality of the waters they were designed to regulate. The issues raised in 1979 remain valid today.

Fully thirty-four of the fifty States indicated a preliminary interst in seeking delegation. This interest was tempered by several considerations:

The need for a temporary program of Federal grants to aid the development, start-up, and expansion of State permit programs for assumption;

That any legislation to permit delegation also provide the necessary flexibility to permit recognition of the unique physical and hydrological characteristics of the respective States;

That delegation to States be complete, providing for general oversight by the Federal agencies rather than an over-the-shoulder permit-by-permit review;

That where possible, existing State administrative and permitting procedures be honored, with Federal evaluation of these procedures being directed to the desired objective, not the precise process;

That any delegation be preceded by a written understanding for resolving intergovernmental disagreements prior to the public hearing process; and

That any delegation plan provide for a recognition of the variety of State programs which may be used to achieve the objectives of this area of water quality.

ICWP is pleased to submit for the record excerpts of significant findings of this report.

WATER QUALITY EFFECTS OF DAMS

The water quality effects of dams is an issue that was recently litigated in Federal courts. The legal issue was whether discharges from dams should be regulated by NPDES permits under § 402 of the Clean Water Act. This argument was rejected. Dams and reservoirs can cause a variety of water quality changes depending on the design and operation of discharge works, the likelihood of thermal stratification, and the quality of reservoir inflow. Design and operation techniques to avoid the rare problems are known and widely employed.

On July 28, 1982, ICWP was privileged to testify before this Subcommittee on this issue. At that time we presented the results of ICWP's survey of the States regarding existing State mechanisms for regulating and taking into account the water quality impact of dams. We are pleased to submit for the record a summary of the survey results.

The survey indicated that the water quality problems of dams can be and are addressed by programs operated under State law. For example, it is already a widespread practice among States to coordinate the review of permit applications or project proposals for dams or reservoirs with State water quality activities, State fish and game agencies, and the U.S. Fish and Wildlife Service. Also, many States reported that, should an existing dam or reservoir contribute to or cause pollution, it is subject to regulation and corrective action.

It is ICWP's view that dams are and should continue to be evaluated on a case-by-case or site-specific basis, and subjected to water quality management control when it is determined that water pollution results from a project. Under existing State law and mechanisms, water quality protection can be achieved where needed and feasible.

Should Congress choose to request a further study of this issue, it is urged to include in its request for a study the requirements that EPA, in cooperation with State water resource officials, report on the existing procedure (both formal and informal) within States to take account of the water quality impacts of dams, the interrelationship between achieving water quantity (resource) objectives at a dam and water quality objectives, and the potential impacts on the achievability of the primary purposes for which a dam or reservoir was constructed if water quality objectives are given priority.

In addition to the involvement of State water resources officials, ICWP recommends that important water quantity agencies such as the Corps of Engineers, the Bureau of Reclamation, and the Soil Conservation Service, be full and equal partners with EPA in the design and implementation of any such study.

The Committee on Public Works and Transportation is already familiar with the essential role of dams in the development and utilization of water resources. There are many regions of the nation where ample water supplies cannot be obtained by any other means. Thousands of miles of navigable waterways also depend on dams. The proposed study could improve an understanding of the relations between water use and water quality and the need for coordinated planning.

SUMMARY

Throughout this testimony we have shown that water use and water quality are not independent matters. Water uses have quality needs and water use itself can affect quality. Planning for both must be coordinated. This is a continuing process, because new water use needs will emerge and prior water uses must be changed.

ICWP supports the principle of non-degradation. However, we have shown the difficulty of drafting a workable non-degradation policy. Rather, the principle should be a primary objective of water quality planning.

The Clean Water Act provides the legal framework for this planning, but the work has only begun. Nevertheless, sound planning is the best assurance that the nation's water use needs will be met and that water quality will be restored and maintained to support water use. On the other hand, any action to freeze water quality standards or uses is the antithesis of planning to meet water use needs. What could be more intolerable than to waste water and financial resources and not meet water needs?

ICWP appreciates the opportunity to testify on this matter. We will continue to support and assist water quality programs in any way we can.

ICWP maintains an office at 21 DuPont Circle, N.W., Suite 600, Washington, D.C. 20036 headed by Joan M. Kovalic, Executive Director and General Counsel.

Mr. ROE. Please proceed.

TESTIMONY OF MICHAEL GARABEDIAN, NORTHEAST REGIONAL OFFICE, SIERRA CLUB; AND JOHN SAXTON, INTERSTATE CONFERENCE ON WATER PROBLEMS (ICWP)

Mr. GARABEDIAN. Thank you, Mr. Chairman. I work in the Northeast Regional Office of the Sierra Club.

Carolyn Carr came down with an illness on her way here from Alabama, and I understand she was able to make arrangements with you to testify tomorrow.

I will address three main topics, using examples from the interconnected New Jersey, New York, Connecticut estuary: first, on section 404; second, ocean outfall waivers; and, third, industrial pretreatment.

First, on section 404 and the Westway Freeway. Because Mr. Addabbo and Mr. Green began last week to seek congressional authorization of the section 404 loophole for the Westway Freeway and real estate project in the lower west side of Manhattan, it is important that I bring this issue to your attention, even though I had not planned to do so when requesting to testify.

The amendment is in H.R. 4293 at this moment, the Second Supplemental Appropriations Bill, and seeks in its language to do two things:

First, it would require, as part of the project, that approximately 240 acres of new commercial fish habitat be created in place of the 200 acres that would be filled; along with this, a 2-year study to "enhance the effectiveness" of the mitigation, as required.

Second, the amendment authorizes immediate engineering, planning, demolition of certain structures over and in the critical habitat area, and the 39-acre "prototype" fill.

The language is precisely worded to revoke the rulings by the U.S. District Court, Judge Greisa, and the U.S. Court of Appeals, that voided the dredge and fill permit and required new environmental impact studies pursuant to NEPA and the Clean Water Act.

I do not wish to dwell on this issue here, but I will go over the subject in a summary manner.

The amendment, itself, has several problems: The Sierra Club feels it is the wrong way for Congress to intervene in the judicial process.

We feel it is the wrong way for an appropriations committee to substitute a quick, short-cut procedure in place of authorizing committee deliberations.

The Westway amendment is also the wrong way to undermine the National Environmental Policy Act, the Rivers and Harbors Act of 1899, and the Clean Water Act through the creation of this loophole.

The amendment is the wrong way to administer section 404, the Army Corps of Engineers, and the Federal Highway Administration.

The Clean Water Act permits the destruction of special aquatic habitat only where there are no practical alternatives, which is not the case here.

The amendment is the wrong way to prevent harm to the striped bass fishery. The Army Corps expert panel and many others agree that a two-season study of the area is necessary to determine how fish use the area and what the possibilities are for mitigation, if any Striped bass from up and down the Atlantic coast use the area in question.

This is the wrong way to force a vote on one of the most important New York congressional environmental issues; and it is the

wrong way to not allow the substantial community opposition to be heard.

A couple of notes on the project, itself:

It is a $4 billion, 4.2-mile-long project that would be the wrong way to provide for surface transportation on the west side of Manhattan.

A $100 million project—essentially a street level arterial—could be developed on the existing on-land 260-foot right-of-way.

The original purpose of this project was partly to revitalize the area in question by providing 90 new acres for parks and 100 acres for development of the area. The area has since, in the last 10 years, begun to revitalize itself quite handily.

The project is also the wrong way to improve the city's air pollution and truck traffic problems. Truck traffic on local streets would be minimally affected compared to a grade-level arterial. And the most important way to reduce air pollution is to discourage automobile traffic and to encourage transit use.

Westway is the wrong way to, as the National Marine Fisheries Service says, "threaten the survival of the Hudson River population of striped bass." This has been a $100 million annual fishery.

The Environmental Protection Agency, the National Marine Fisheries Service, and another Federal agency, I believe the Fish and Wildlife Service told the corps, no, don't fill this wetland. The corps ignored this, and, in fact, withheld the information, as the judge found—and that's part of the reason he threw out the fill permit.

Of course, it's also the wrong way to spend this much money. The project should be traded in to the tune of over $1.5 billion for transit rehabilitation, and bridge, road, and related infrastructure repairs.

And it is also not the right way to create jobs, because the trade-in would create just as many jobs; the Sierra Club study shows, in fact, the trade-in would create more jobs.

Finally, it's the wrong project because Governor Cuomo's own Westway investigator concluded that Westway "has now become a luxury that the city and State probably cannot afford."—which is the April 1983 report.

If anything, Congress should react to this issue by having joint Water Resources and Transportation Subcommittee hearings on the 404 issue and the transportation and trade-in issues, and the NEPA impacts.

In this manner, Congress will have a choice to determine for itself whether we are correct in our belief that this is a project that cannot survive informed public scrutiny.

But, by far the best congressional action would be to let the lawsuit play out its course; that is, to let the laws remain intact.

My second subject is on the 301(h) pollution discharge waivers:

I have always enjoyed opportunities to testify before this committee. This time I am glad to address you on the Clean Water Act because it gives us an opportunity to point out that though we disagree with our building-trades friends on Westway, we join hands with them in support of the goal of secondary treatment and in opposition to liberal 301(h) waiver provisions.

When sewer service agencies on the Hudson-Raritan-Long Island Sound estuary began to apply for these waivers, the Sierra Club approached it with an open mind.

Now, however, it is clear that waiver applications on these estuaries are not appropriate.

Congress should act to prevent further delays and expenditures on 301(h) waivers in these and similar waters since this is an unjustified waste of local, State and national taxpayer funds that can only lead to a retreat from the improvements in water quality that have been achieved.

The goal of achieving secondary treatment in these waters must be retained for the same reasons that the waivers must be eliminated:

First, we should not take a step backward from the improvements in water quality that have been achieved.

And we should act only to decrease pollutant loads into these estuaries because they are too delicate and too important environmentally and economically to receive these kinds of discharges.

The estuaries are a "sink"—they retain and react to toxics and other kinds of materials that enter them. The tri-State estuaries have a great number of water quality problems, including raw and treated sewage plant effluent, combined sewer overflows (COS's) urban nonpoint runoff, industrial point-sources, and so forth. All must be improved if we wish to meet the goals of the Clean Water Act.

If we find that some problems such as CSO's are in need of increased legislative attention and support, then new and improved programs to regulate and fund them could be included in the Act.

New York City's proposals to sacrifice secondary treatment goals and plans with liberal waivers in an unpromising effort to make more money available for other improvements, such as CSO's, may be well-intentioned, but are in error.

H.R. 3282's excellent 301(h) provisions are necessary to protect our estuaries.

It should be noted that the Sierra Club does not support large-scale secondary treatment in the region as an end in itself.

We support the use of alternative waste treatment technologies and waste water uses when it is appropriate. In the case of New York City we are not aware of any appropriate alternative technologies, however.

One of the biggest potential problems with the use of the 301(h) waiver is in estuaries that are stressed and that have a variety of dischargers, is that of "opening the barn door".

If EPA granted some, but not all, of the 20 to 30 applications in our area, the ones who were denied would soon be sitting before you, as would the 130 other municipalities and the industries on individual permits. H.R. 3282 would prevent this situation in that area.

The public cost of waiver applications, the process, itself, is excessive.

Municipalities have to spend great amounts of money on these applications. It has been suggested that New York City spent $2 million to $3 million on its 301(h) applications, and it is spending more now.

The city responds by saying it has not spent that much, but has not volunteered how much it has spent, and says that in any event the data being developed are used for other purposes besides the waivers.

In addition, of course, the application costs the State, regional and Federal agencies who have to review the application.

The Hudson-Raritan estuary is an example of escalating public costs resulting from applications and tbe ensuing battle of experts.

The Interstate Sanitation Commission (ISC) report, finds there is not enough assimilative capacity in the New York Harbor complex for year-round reduced treatment, as has been applied for in the 301(h) waivers. New York State has run the same model and found the same results.

The City's consultants, however, have now published a report that disagrees with the ISC and the State.

Recently experts with the National Wildlife Federation evaluated all three reports and found that the city's analysis, "is not useful for predicting future dissolved oxygen condition in the harbor area."

It should be noted that, if anything, the ISC model—the model that has been used by the different organizations to determine the oxygen content—is too liberal.

For example, the water samples on which the studies are based are generally taken during the daylight hours when the microplants are producing oxygen under the sunlight. At night there is probably a dramatically-increased oxygen demand. Fish, of course, don't go to sleep.

A major weakness of our area's 301(h) waivers is that the applicants are using a much too-limited definition of "receiving waters" affected by the reduced treatment levels.

For example, all applications in the tri-State estuary are inadequate from the outset since they do not consider the New York Bight Apex, the Hudson River plume, and the waters along the New Jersey coast as part of the receiving waters for which the impacts of reduced treatment should be considered. They simply do not adequately consider Long Island Sound, either.

An historic trend worth noting is that some upper estuary improvements in water quality seem to have been made at the expense of or at least without helping to improve lower parts of the estuary.

Earliest reports referred to—these are from back in the 1,600s and so forth—refer to waste problems in the streets and in the canals into which the wastes were channeled; then at the turn of the century there were serious problems in the Hudson River and other waters immediately around Manhattan.

Now the Hudson has improved somewhat, but there are serious problems lower in the estuary.

It appears that the historic process has been one in effect of pushing, or at least of the problem moving further and further downstream from the sources.

Given this trend, we need to sample, monitor and model the impacts of 301(h) waivers as far downstream as the Sound—Long Island Sound—its race area, the lower bays, the apex and the Jersey shore.

A well-documented problem with 301(h) waivers is that reduced secondary treatment will lead to an increase in the toxics leaving the sewage plants.

This leads to my final topic, industrial pretreatment. But a final note on the issue of estuaries, is that we would like to note that the Interstate Sanitation Commission plays a key role in the tristate region on water quality issues.

They are involved in past, present and future efforts to clean up the estuaries as essential. For this reason, the ISC should be named and its role specified in any portions of legislation that set up interstate estuarine management programs.

And we are looking at this same issue in relation to other similar sorts of bodies; and we will provide the committee with information on that.

Regarding industrial pretreatment—the concept behind it is sound; that by keeping toxics and other excessive loads out of the sewer system in the first place, we keep them out of the sewer plants, the effluent and the sewage sludge.

Pretreatment is the current frontier of the Clean Water Act. And it is no more true anywhere else in the country than in the Northeast. Proposals such as local waivers or opt-outs would undermine the act.

Based on our evaluation of the case studies in the Northeast region, if any amendments are appropriate for pretreatment, it is only to strengthen the law.

In New York State there may be only a couple of relatively small municipalities, at most, that have the potential of developing acceptable programs independent of the national categorical standards.

These communities have a potentially manageable problem and, unlike most, have the resources to do the scientific investigation, program, and enforceable limitations development that might justify an alternative.

However, this is not a justification to have a national program that has opt-outs based on this minimal potential.

In most cases the cost to the community, and the State and national agency review and preparation would be excessive; and an even more critical problem would be the delay such applications would precipitate.

Research program development and denial could take 18 months to 2 years, and at the end of the period the process of developing a program pursuant to national standards would have to start all over again.

Most pernicious, though, would be the effect of enacting an opt-out program at this time. This could be seen as a boon to the communities that have not submitted programs yet, and would undercut program development already underway that would be postponed in order to develop new opt-out applications.

The problems an opt-out system would have once established are vast to contemplate. I will only mention the potential problem of "forum-shopping" as one that should discourage lawmaking efforts of this kind.

The first pretreatment questions we should be addressing now are not opt-outs, but are what the status of the present program is

and how it is working. Then we can address the need for FWPCA amendments.

The Sierra Club has undertaken a major participation in a study of New York City's proposed industrial pretreatment program as a case study of the Clean Water Act implementation. We will be circulating a draft report for comment soon, and will send one to the committee when we do so.

We hope that the New York City study will serve as a framework for our members to evaluate other programs around the country. If New York is indicative, the EPA has an incredibly large task ahead of itself in order to obtain compliance with the law and program that is only now being implemented for the first time after all these years of debate.

Our study's expected findings are: 3,000 pounds per day of toxic heavy metals collect in New York City's sewage sludge, and 5,000 pounds of heavy metals per day pass through the New York City presently operating sewage treatment plants into receiving waters.

New York has two plants under construction, which service areas now account for in the neighborhood of 350 million gallons per day of raw sewage--that certainly add to the problems of heavy metals.

One finding is that the city is embarking on a program of Federally mandated categorical pretreatment regulations that cannot by itself, solve the sewer system toxic problems. But reductions in industrial wastes are a key part of the solution.

However, the city's pretreatment program, as planned, will not meet minimum Federal requirements, including general prohibitions, procedural requirements, and legal authority requirements for the following reasons:

First, the city has not adequately investigated the potential industrial sources of toxicants, especially in cases of mercury, zinc, copper, nickel, and lead;

The city has failed to establish a plan for a system of permits and records that would effectively monitor and control toxic discharges;

Third, the city does not have a range of penalties that will effectively deter violations or punish violators;

Fourth, the city's enforcement mechanisms may allow unnecessary delay;

And, fifth, the city has not established procedures for future public participation.

Up to this point in the process, we have made a number of recommendations to the city for its consideration in developing its pretreatment legislation, ordinance and regulations.

While expressing an interest in our recommendations, the city has adopted its legislation and programs without committing itself to any of our suggestions.

The following are examples of our recommendations:

Require discharge permits for users of the sewer system, as opposed to a violative permit situation, which are issued only if a violation is found;

Increase civil and criminal penalties and the range of available penalties;

Create a right of legal action for any citizen wishing to enforce the provisions of the law;

The public participation program should consist of access to permits and records, publications of significant violations and enforcement actions; and notice of and opportunity to speak at hearings regarding the contents or violations of the contents of any permit.

We have recommended they expand plans to randomly sample and inspect all sewer users with greater frequency.

And we recommended they eliminate enforcement delay with immediate cease-and-desist orders and broaden the definition of problems subject to stringent enforcement actions.

We have also recommended they establish a toxicity surcharge, so that discharges of toxic substances would be charged proportionately to the toxicity of their discharge. A higher schedule of rates could be imposed on dischargers whose toxic pollutants are removed with the POTW's. One of the weakest areas of the city's program has been in citizen involvement efforts. Citizens wanting to participate were not well enough informed by the city to be able to participate in a meaningful manner. Reports released for comment were released in far too short a period of time to allow adequate review. We conclude that the city has not taken its charge to involve the public seriously. The State of New York has not acted in a visible manner, indicating dissatisfaction with the city's public involvement policies. However, we do look forward to EPA fulfilling its responsibility for public involvement, and we have found some receptivity on the city council—of the city—for our presenting our position to them.

Our tentative recommendations to the EPA would be based on the program the city submitted to the agency in May, and we would recommend that the city not be granted control authority status until the tasks mentioned above have been completed or included.

Judging from our involvement to date, strengthened and/or more fine tuned Clean Water Act pretreatment provisions may turn out to be necessary to cure some of these problems. This depends, in part, on the EPA's commitment to establishing effective programs. We will report to the committee the progress of our work in this area.

In closing, Mr. Chairman, I would like to point out the great importance of the pretreatment program to this subcommittee and related areas of jurisdiction and interest. The industrial pretreatment program has the potential of greatly helping to clean up—the harbor water column for animals, plants, and human food and recreation;

Normal harbor sediments for marine life and human food;

Shipping channel sediments so that the options for dredge spoil disposal from new and maintained channels are increased; and so that mud dump degradation and offsite impact are reduced;

Sewage sludge so that options for its disposal are increased and degradation of its dump and disposal site is reduced;

Combined sewage overflows that will contain a much lower load of toxics when storm surges wash out accumulated settled material;

Problems that result when sewage treatment plants break down or operate improperly;

Raw sewage outflows and inadequate levels of treatment that persist because of funding, scheduling, or other problems.

In other words, pretreatment will help to clean up the New York Bight and its Apex, including the New Jersey coastal waters and the Hudson River and its plume front and the Long Island Sound.

We urge the committee to act aggressively to maintain and strengthen the Clean Water Act.

Thank you.

Mr. ROE. Mr. Saxton?

Mr. SAXTON. Thank you, Mr. Chairman.

I certainly appreciate the opportunity to come and talk to you today.

Today I will be representing the Interstate Conference on Water Problems, in giving their—a summary of their—statement.

Mr. ROE. Excuse me, Mr. Saxton.

Both statements will appear in the record in full.

Mr. SAXTON. Yes, sir, thank you.

In order to give you some background, in addition to being on the board of directors of the Interstate Conference on Water Problems, in my home State, I am the director of the soil and water conservation commission, and chairman of our State water quality board; the chairman of our interagency coordinating committee on natural resources; the chairman of our water well licensing committee; and so I do have some familiarity with these various activities that we are talking about today.

The Interstate Conference on Water Problems is an organization of State, interstate agency officials in the 50 States, in which we attempt to take positions on for the betterment of all the States concerned.

We have three sections that we would like to make comment on today, sections 6, 10 and 11; section 10 being the water quality standards.

We feel like that the section as is now proposed will completely obliterate the State planning process on water quality.

If you designate a time frame or a place in time and maintain a particular standard for that stream or that water body, forever and now on, you do not allow any future expansion in the State, you do not allow for any change in conditions that certainly occurs.

So we feel as though that this has to be flexible and dependent upon water use.

Water quality and water use and water quantity have to be interrelated and each dependent upon the other.

And if you make one of them static, you are destroying the ability to not only manage that one, but also the other related items.

Under section 205(j) our State planning process would be completely stopped.

So you have to leave this dynamic changeable situation there where we can reclassify as local conditions require.

Under section 404, under the 404 permit program, we have—we feel like there that some of the things in this proposed legislation are not really tied to any specific items.

For example, the terms "acquatic environment," and "unacceptable adverse effect," have no relation, really, to anything except to the person that wrote the language; because you certainly could not make a decision based on those two terms. Now, you have got to have some kind of reference on what is the situation as it is right now, and what do you want to maintain in that in terms of: What are the impacts of the permit? How does it impact upon current use and the intended use of your wetlands?

We certainly want to support the saving of wetlands, and the discontinuation of this destruction; but we think it has to be done in a manner which is practical, which is quick, which can be processed through various agencies in a reasonable time.

In my own State we have had section 404 permits that were requested by agricultural users and they had already lost two crops before they got a permit. And you can't—you've got to have something that moves faster than this.

But at the same time, we certainly have got to have time to weigh all the various factors involved.

On your water quality effects on dams, the ICWP position on this is that we feel as though this is a program that can be operated by the States.

It does not have to be regulated in a real definitive fashion by national legislation.

Most of the States under your dam safety program and also under State programs of a similar nature have this problem under control.

Now, certainly, when you construct a dam, there certainly is going to be changes in ecological systems that are present before the dam. And you are certainly going to have different qualities of water.

But, here again, you have to relate this to the intended water use and what qualities do you want to maintain in order to provide water that's acceptable for that use.

I think throughout our testimony here we want to emphasize the fact that you must consider water use and water quality as interdependent and any legislation that is developed must take this into account.

Mr. Chairman, as a sidelight here, I'd like to tell you that we appreciate your taking our recommendations on your water resource bill, from ICWP, and we certainly want to assure you we will work with you in the future.

Thank you.

Mr. ROE. Thank so much for your splendid testimony. We appreciate it and particularly the depth you've gone into in the areas of your interest and concern. We'll look into that in New York.

Mr. GARABEDIAN. Thank you, Mr. Roe. I appreciate your helping to accommodate our airline schedules.

Mr. ROE. Thank you very much.

Mr. SAXTON. Thank you, sir.

[Subsequent to the hearing, the following were received from the Interstate Conference on Water Problems:]

INTERSTATE CONFERENCE ON WATER PROBLEMS,
March 8, 1983.

Hon. ROBERT A. ROE,
Committee on Public Works and Transportation, Subcommittee on Water Resources, House of Representatives, Washington, D.C.
Attention: Charlotte Miles.

DEAR CONGRESSMAN ROE: I am writing on behalf of the Interstate Conference on Water Problems. We understand that the Subcommittee on Water Resources held a hearing on February 23 in regard to the Environmental Protection Agency's proposed water quality standards regulations. Enclosed please find ICWP's comments to EPA on these regulations.

ICWP is an independent national association of state, intrastate, and interstate water officials concerned with the full range of water issues—both quality and quantity related. ICWP was established in 1959. Its purpose is to facilitate cooperation within the water community as to water issues, legislation, and Federal-state relationships. ICWP also serves as the policy advisory group on water issues to the National Governors' Association.

On behalf of ICWP, I respectfully request that the enclosed comments be submitted for the record.

Sincerely,

JOAN M. KOVALIC,
Executive Director and General Counsel.

INTERSTATE CONFERENCE
ICWP
ON WATER PROBLEMS

COMMENTS ON EPA'S PROPOSED
WATER QUALITY STANDARDS REGULATIONS

The Interstate Conference on Water Problems (ICWP) is a national association of State, intrastate, and interstate officials concerned with the broad range of water management and related matters. The purpose of ICWP is to facilitate cooperation, consultation, and exchange of information among water resources administrators and governmental officials as to the conservation, use, development, and administration of water and related land resources, the law governing these matters, and Federal-State relationships in the field of water and related resources.

ICWP commends the EPA for its efforts in clarifying and simplifying the Federal water quality standards setting process (regulation 40 CFR 131) as found in the October 29, 1982, Federal Register. Attainment of a greater degree of "reasonableness" and "flexibility" on the part of EPA in the administration of this important provision of the Clean Water Act is welcomed by the States. Pursuit of a workable "partnership" in the program, as envisioned in the Clean Water Act, is also encouraged by ICWP; and is in recognition of the primary responsibility held by the States to develop, administer, and enforce water quality standards in their respective States, in keeping with the goals of the Clean Water Act. The October, 1982, draft "Water Quality Standards Handbook" by EPA can be of much assistance to the States in fulfilling this responsibility and in providing for a consistent approach to developing standards. With this Handbook, the States would follow the steps identified to document decisions on present and future uses, including only the steps necessary to fully justify the decision.

As a final general comment, the Handbook may more properly contain the "optional" processes identified in the proposed regulations. Such optional processes go beyond the mandatory minimum requirements and are intended to provide guidance to the States in the standards setting process. If the goal of EPA is to set forth a clear and straightforward set of minimum requirements, optional and guidance information should be included in the regulatory guidance information.

Comments by ICWP on each provision of the proposed regulations are as follows:

1. Focusing on Priority Water Bodies

Current regulations require States to review on a statewide basis all standards at least once every three years. The EPA proposed regulations would allow States to focus their standards review on priority water bodies rather than conduct a statewide review. Public review and hearings will be required for any proposed changes by the State.

ICWP supports the proposal of focusing on priority water bodies rather than pursuing a statewide review every three years. This change would allow a more in-depth review of the standards for priority concerns and would allow the States to focus their efforts on site-specific water quality standards. The complexity and cost of the technical analysis intended to support any changes could preclude a statewide effort due to limited State program resources.

In the determining of priority water bodies by the States, ICWP believes that EPA lacks the authority to disapprove the States' selections. States should have the prerogative of targeting priority pollutants in these decisions.

2. Determining the Attainability of Uses

Past EPA policy, as outlined in the Red Book, was based upon a presumed applicability (now rescinded) and attainment of the goals for the uses of water as set forth in the Clean Water Act. Attainment of "fishable and swimmable" uses as a national goal has been inflexible and has failed to recognize natural, physical, chemical, and biological differences in water bodies.

The EPA proposed change would recognize natural and regional conditions and would allow States to designate standards of use which can be reasonably obtained. States would follow a "scientific approach" in justifying standards which are attainable and which "weigh environmental and physical factors impairing the attainment of such uses."

The issue of use attainability has been the subject of much controversy among those with interests in water resources management. Many have questioned the commitment by EPA to the goals of the Clean Water Act and the intent of the Congress, which some assert cannot be changed by promulgation of regulations alone. Others, many of whom have first-hand experience in administration of State water quality programs, support the proposed changes as an alternative.

At the heart of these variant opinions, in many instances, are the individual perceptions of what is intended by EPA in the proposed changes. EPA must provide further clarification to assure that its position is not misinterpreted, through a reaffirming of its commitment

to the goals of the Clean Water Act. EPA should assist the States in maintaining strong water quality programs, consistent with the Clean Water Act, where pressure to "backslide" by economic or other interests may be present.

In reviewing the procedures outlined in the proposed regulations for determining appropriate uses for water bodies, ICWP supports, with some reservations, the concepts for selecting attainable uses. Survey of water bodies to determine natural and other conditions and consideration of reasonable costs are both favored as workable concepts. Striving toward uses that can be actually and reasonably achieved has merit when contrasted with the sometimes unsubstantiated use criteria that are presently required. This approach would enhance the water quality/water quantity interface through the setting of goals for uses which are currently being attained or are anticipated to be attained. This would benefit the States actively pursuing State water plans, which are primarily use oriented. ICWP wishes to be assured, however, that where States select to implement more stringent water quality standards than required under the minimum criteria EPA must support these standards.

The commitment to more realistic goals will also serve to ease the frictions which have been unnecessarily created between the States and EPA over the issue. A closer relationship should result, particularly at the regional level. Standards can be used as a much more effective water quality management tool, with State program resources being committed to more effective ends.

However, ICWP urges restraint and thoughtful consideration in implementing such a change. A program developed upon water quality based standards would place a burden upon many States that are not technically or financially able to accurately differentiate between background conditions and resulting impacts from discharges. The analysis, site-specific criteria development, and use-attainability analysis could strain limited state budgets in providing for a water quality management program, particularly in light of reductions in Federal support funding. EPA is urged to prioritize its considerable resources and expertise to assist States in those analyses where States are limited.

ICWP believes that benefit-cost assessments do have a legitimate function in the standards-setting process provided that any changes made by the States in setting standards be consistent with the national interim goals of the Clean Water Act. No uniform consensus exists among the ICWP membership as to the merits of this proposal, and strong opinions have been voiced both pro and con. However, it is recognized that changes in water quality standards must not be solely based on economic criteria.

3. Changing Designated Uses

Existing guidelines refer to the types of changes which can be made relative to designated standards, such as "downgrading" and "upgrading," and provide for standards removal; however, the existing regulations do not specifically provide for these definitions nor do they provide for a

clearly enunciated hierarchy of uses, as is implied. The proposed changes establish a new terminology to describe changes in uses, i.e., "adding," removing," and "modifying" designated uses. The regulations also allow States to consider steps where standards may be partially met due to situations such as intermittent streams or wetlands, or due to seasonal variations, without abandoning the standard altogether. Permanent physical changes, such as dams or diversions which interfere with attainment of certain uses, are also provided for. ICWP supports the proposed terminology for identifying changes in use designations by the States.

States should initiate changes in water quality standards when water quality goals are threatened or additional substances require standards. In making modifications, attained uses must be protected. The fundamental objective of the Clean Water Act to restore and enhance water quality through a continual striving for higher standards wherever possible should be adhered to by EPA and the States.

ICWP is in agreement with the conditions identified in the proposed regulations under which States can modify or reclassify a use, where the existing use cannot feasibly be attained, in keeping with the aforementioned statements.

ICWP supports the concept of seasonal use criteria which do not allow an unreasonable decrease in water quality, which would protect the most sensitive use. This concept is consistent with the mandate of the Clean Water Act for the protection of maintenance and propogation of the full life cycle of aquatic life. Seasonal and regional variations can be appropriate, provided water quality is not degraded as mandated in the Clean Water Act.

4. Levels of Aquatic Protection

Existing regulations do not define levels of protection within the aquatic protection use category, although subcategories have evolved in recognition of the variability of fisheries needs, etc. The proposed change would by regulation provide the states with an opportunity to define subcategories of aquatic protection uses which reflect different levels of protection.

ICWP recognizes that many States have taken such steps in promulgating State water quality standards, and other States will no doubt follow suit. Protection of waters of varying quality is an important concept not only to water quality management, but to fisheries management. EPA regulations should encourage States to protect all waters of the State. States that desire to do so can choose to go beyond technology-based controls where necessary to achieve desired water uses and to protect aquatic life and health.

ICWP supports the concept of allowing States to establish varying levels of criteria to protect desired aquatic life communities except where a given level of control may be insufficient to protect the full life cycle of aquatic life in a balanced and viable aquatic community.

5. Developing Segment-Specific Criteria

ICWP supports the proposal for allowing States to develop segment-specific criteria. Existing regulations do not identify acceptable methods by which States can develop segment-specific criteria, although States are required to develop defensible criteria for designated water uses. The policy of presumptive applicability (rescinded, November, 1980) in setting criteria failed to recognize segment-specific situations of which the States have first-hand knowledge. The proposed changes in the regulations provide flexibility to the States in setting and revising criteria applicable to specific situations and local conditions. States may by regulation tailor water quality criteria to specific water bodies or local aquatic communities rather than using national, laboratory derived criteria from EPA.

6. Antidegradation and Maintenance of Existing Uses

The existing policy on antidegradation requires that all States develop, adopt, and implement a policy to maintain and protect existing instream water uses and, where a State feels it is appropriate, future uses. Existing high quality waters may be subject to higher levels of pollutants if a State chooses, provided that the degradation of water quality not interfere with or be injurious to existing instream uses. Further, States shall attain the highest regulatory requirements for all new point sources and continue an effective management program for nonpoint sources. EPA places a very high priority on an alternative policy which would emphasize protection and maintenance of existing uses, thus limiting the existing mandatory antidegradation policy. Three options are presented for which comments are requested.

ICWP prefers option 2 because it appears to be most consistent with the mandatory requirements of the Clean Water Act and the intent of Congress to protect, restore, and maintain water quality, not merely the uses of water. ICWP believes that a strong antidegradation policy must be maintained.

7. Protection of Outstanding National Resource Waters

The existing provisions provide for special designations to protect outstanding national resource waters. The proposed change would eliminate this provision and retain Section 510 of the Clean Water Act which provides this flexibility. The outstanding national resource waters designation has provided assistance which has been particularly important where streams or water bodies are an interstate resource and individual State special designations may not be sufficient. Many States wish to see this provision retained.

8. General Policies

The existing regulations do not recognize general policies applicable to States' water quality standards. The proposed changes

would encourage States to adopt statewide policies applicable to a State's water quality standards.

ICWP believes that since these policies are optional, they may more appropriately be contained in the Handbook or other guidance documents, in order to provide for a clear and concise set of mandatory regulations.

9. Review and Approval

The existing provisions grant authority to the EPA Regional Administrators to approve or disapprove any proposed revisions of water quality standards by the States in accordance with the provisions of Section 303(c)(2) of the Clean Water Act.

The proposed changes in this provision attempt to define what information, analyses, and documentation, supportive of a change, must be submitted by the States in making these decisions and encourages prior consultation with EPA to expedite review and approval.

ICWP endorses the attempt to identify the steps in the review and approval process and the documentation necessary to support modifications of State water quality standards as an effective means of expediting decisions, of lessening any resulting tensions from delays and misunderstandings, and as a guiding process to the States in initiating changes and modifications. ICWP is in general agreement with the process outlined and favors the requirement placed upon EPA to follow the same requirements in promulgating standards as is required of the States. ICWP does, however, strongly recommend the following exceptions; previous comments may also be applicable:

1. Select Priority Water Quality Limited Stream Segments for Water Quality Standards Review--EPA cannot change the priority decisions of States in selecting water bodies for standards review.

2. Revise Use, Revise Criteria, and Adopt a New Water Quality Standard for the Stream Segment--Both States and EPA should share the burden of justification of less stringent standards. Disapproval of State standards by EPA should include specific technical and socioeconomic justification.

3. Develop Segment-Specific Criteria--The recommendations should be amended to allow for targeting of statewide and basinwide issues in the review process, as well as priority segment-specific issues. Also, in development of criteria, each State should be allowed to target priority pollutants for which limits will be a part of the standards.

4. Public Hearings--Participation by all interested and affected parties is a vital part in all phases of a State's water quality management program, including the development and implementation of water quality standards for designated uses. The State should have discretion over specific public involvement and review processes, but the requirement should remain mandatory.

5. State/Federal Roles--States should not have to justify to EPA through the required analysis the setting of water quality standards which exceed the minimum requirements of the Clean Water Act. EPA shall not be given the authority to discourage or disapprove State proposals for higher uses and criteria than required as being unrealistic or too costly for compliance in the view of EPA.

6. State Resource Impacts--The process for adopting State water quality standards proposed in the draft regulations will in many instances place a significant financial and technical burden upon some States. More responsibility should also be placed upon EPA to assure a reasonable level of consistency among the States, reflective of regional and other differences. Absent EPA funding, States may only try to attain a minimum level of achievement and not strive for restoration and enhancement of water quality.

   EPA should carefully consider the ability of each State to effectively administer the standards process, in light of the need for that State to address serious water quality problems with consideration to present and future funding levels for State assistance. EPA must make a financial commitment to the program if it is to be successful.

INTERSTATE CONFERENCE
ICWP
ON WATER PROBLEMS

September 16, 1983

The Honorable Robert A. Roe
Chairman
Subcommittee on Water Resources
Committee on Public Works
and Transportation
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Roe:

On behalf of the State and interstate water officials, the Interstate Conference on Water Problems appreciates the opportunity to provide comments on H.R. 3282, the bill to amend the Clean Water Act.

ICWP is the national association of State, interstate, and intrastate officials concerned with the full range of water issues relating to management, conservation, and development. ICWP was established in 1959 and has served for many years as a policy advisory group on water matters to the National Governors' Association. The purpose of ICWP is to facilitate cooperation, consultation, and exchange of information among State, interstate, and intrastate officials and agencies as to the conservation, use, development, and administration of water and related land resources, the law governing these matters, and Federal-State relationships.

While ICWP supports many of the principles of H.R. 3282, the enclosed statement expresses ICWP's concern regarding several specific provisions of the bill. Provisions of concern to ICWP include the bill's sections on water quality standards, the Section 404 dredge or fill permit program, and dams as point sources of pollution.

ICWP's Annual Meeting is being held in Oklahoma City September 19-22, and we regret that, for this reason, we are unable to testify in person on this important legislative proposal. The enclosed statement and attachments are hereby respectfully submitted for the record. If the Committee has questions regarding the statement, ICWP's Washington, D.C. office will be pleased to provide further information.

Thank you for your consideration of ICWP's views.

Sincerely,

Henry Silbermann

Henry Silbermann
Chairman

Enc.

cc: John Doyle
Errol Tyler
Michael Toohey
Craig DeRemer

TESTIMONY OF THE INTERSTATE CONFERENCE ON WATER PROBLEMS

BEFORE THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

SUBCOMMITTEE ON WATER RESOURCES

CONCERNING

HR 3282, AMENDMENTS TO THE CLEAN WATER ACT

The Interstate Conference on Water Problems is the national association of State, interstate, and local water administrators who are responsible for the conservation, development, and management of water resources. We embrace State and Federal programs which will restore or maintain water quality in order to enhance indigenous aquatic life and water supply uses where such water quality is attainable. Water quality should also support such additional instream or withdrawal water uses as are adaptable to each body of water and consistent with State water use plans. The water quality objective should be to protect water resources and aid water use.

Consistent with this objective, ICWP believes that a balanced water quality and quantity management program will provide environmentally sound protection of the nation's water quality, but in doing so, will not restrict legitimate water use, discourage conservation and reuse of waters, conflict with State water use plans, or prevent authorized water use development.

Practically any water use can affect water quality. Examples range from the obvious discharge of municipal and industrial wastewater; through storm runoff from urban, agricultural, and stripmined lands; to maintenance dredging of waterways and the effects of commercial and recreational vessel traffic; and to the less obvious effects of diversion, impoundments, groundwater pumping, and groundwater recharge. These effects mean water quality planning cannot be done apart from water use planning. Each must support the other. Water quality standards should be formulated to recognize the quality changes inherent in water development and utilization.

Coordinated planning of water use and water quality is unavoidably difficult. There are complex relationships between quality and use that must be understood. There are trade-offs that must be

identified and decisions that have to be made. The results will precisely define water uses that are necessary and achievable, along with water quality standards that will support those uses.

Most of this planning and standard setting remains to be accomplished; however, the legal framework is in place. The Clean Water Act stresses sound planning, sets national goals, and provides workable and enforceable tools to implement plans. That is as much as law can do. Federal statutory law should not dictate the outcome of planning, set standards that must be achieved, designate uses which must be maintained, or prohibit certain uses unless such standards or uses are unquestionably applicable nationwide. These views are particularly pertinent to three sections in HR 3282:

- Section 6 concerning water quality standards;
- Section 10 concerning the 404 permit program; and
- Section 11 concerning water quality effects of dams.

WATER QUALITY STANDARDS

A new subsection (B) is proposed to §303(c)(2) that requires designated uses in effect on January 1, 1983 to be maintained unless a State demonstrates that three attainability requirements cannot be met. ICWP has serious problems with this proposal.

It should be recognized that uses and standards can, and should, change over time. We are a dynamic nation, and our water quality standards and planning program must be dynamic to meet changing needs. Freezing designated uses at any point in time would be a bad public policy, and likely counter-productive.

Further, there is nothing sacred about the uses designated as of January 1, 1983. In some cases, the uses in place reflected a great deal of prior State consideration and planning. But in other States, water quality planning was not as far along, and the uses as of early 1983, were only preliminary and interim designations. In some cases, the designated uses may not exist, or have any potential to be achievable. Further planning in most States will confirm or revise these use designations to reflect real facts. Where States are undertaking this process, they should be allowed to proceed without interference. ICWP agrees that the three attainability criteria are valid, but economics alone is an insufficient test of attainability. This is not a complete list. Absent is any consideration of the physical nature of a water body and water quantities which can restrict or even preclude most water uses, regardless of water quality. This proposal will essentially prevent the type of planning and standards revision provided for in the Clean Water Act. The proposal should be dropped.

A new subsection (C) is proposed to maintain water quality in excess of that needed for designated uses. This is a non-degradation policy that again prevents standard setting through a sound planning process. But blanket adoption of non-degradation can have worse consequences than being purposeless. It can prevent designated uses from taking place because a simple water use, in itself, may be the direct cause of the change in water quality. Examples are a temperature change caused by a water supply reservoir, an increase in chlorides from the treated wastewater of a municipal system, and an increase in total dissolved solids resulting from conjunctive use of groundwater. None of these changes significantly affect designated uses if kept within the limits of properly formulated water quality standards. It can be seen that a non-degradation policy of this type is the antithesis of planning for water quality and water use. It overrides planning to dictate an outcome that prevents needed water use and may result in waste of scarce resources.

A new subsection (i) is proposed to §303. It is a slightly different non-degradation policy than discussed above. It demands that existing uses be maintained no matter what happens. Why should existing uses always be preferred to planned future uses? As water administrators involved in the continuing process of allocating and re-allocating water use, we know that conditions affecting water use and needs change. Water use can change dramatically, for example, when an agricultural region urbanizes or industrializes. Thus, ICWP must strongly oppose freezing water use to any particular pattern or point in time.

This same subsection proposes non-degradation of "waters of exceptional recreational or ecological significance". Such a statement is unnecessary. Exception waters will be recognized as such in most States' planning processes and the uses will be protected by appropriate standards. But those standards will recognize the need to protect recreational use, and also the impact of water quality on such recreation uses. Unfortunately, the proposal, again, tries to dictate a particular outcome, and would work contrary to public interest.

SECTION 404 PERMIT PROGRAM

A new subsection (B) is proposed to §404(b). It specifies decision rules for the Secretary of the Army. He shall prohibit specification of a disposal site if there is an unacceptable adverse effect on the aquatic environment and/or a practical alternative to the proposed discharge. These rules are part of the current 404(b)(1) guidelines and are very difficult to apply.

The proposed legislation is worse still because it lifts decision rules out of the context of the body of the guidelines. The decision rules become totally unrelated to water quality, water quality standards, and designated water uses. Moreover, the "aquatic environment" and "unacceptable adverse effect" have no frame of reference. How can the rules be applied?

Every body of water contains a broad variety of aquatic environments. Some of these environments are very important to indigenous aquatic life, but others are not. Aquatic life, therefore, is a frame of reference. But this is not enough for a workable and understandable regulatory program. The aquatic life to be protected ought to be embodied in designated uses and supported by appropriate water quality standards. Then permit evaluation becomes a relatively simple and rapid process. This section should be dropped.

Six new subsections are proposed for §404(q). These deal with time limits, interagency coordination, and internal relations of the Corps of Engineers and Department of the Army. ICWP recognizes there are problems with time limits and interagency coordination. If the agencies are unable to work this out, Congress certainly should impose reasonable requirements.

While recognizing the authority of Congress to organize and oversee the Federal agencies, ICWP would offer some caution regarding the possible over-specification of internal delegation and reporting relationships. The Executive Branch should be left with sufficient flexibility to meet and address changing conditions and future needs, if the program is to prove efficient in the long run. In the processing of permits, ICWP supports increased flexibility for the District Engineer in negotiating with the individual States on matters such as time frames, processing schedules, joint application and notice, and cooperative field investigation and enforcement.

Congress should decide whether responsibilities under the Clean Water Act are delegable or not. If delegation is allowed, it should apply to all agencies. The public needs to know what delegations are made. This can be easily satisfied by agency rulemaking.

ICWP urges the Congress to review the provisions in the Act for State assumption of the §404 program. We are pleased to work with the Committee in determining what must be done to encourage States to assume this program.

In 1979, ICWP, through the Water Resources Council, conducted an extensive survey of the capabilities of the States to conduct programs equivalent to those mandated by §404. The States raised many questions regarding the scope of the regulations, the conflicts

with existing State programs, the overall practicability of the regulations, and the efficiency of these regulations in effecting improvements in the quality of the waters they were designed to regulate. The issues raised in 1979 remain valid today.

Fully thirty-four of the fifty States indicated a preliminary interest in seeking delegation. This interest was tempered by several considerations:

- the need for a temporary program of Federal grants to aid the development, start-up, and expansion of State permit programs for assumption;

- that any legislation to permit delegation also provide the necessary flexibility to permit recognition of the unique physical and hydrological characteristics of the respective States;

- that delegation to States be complete, providing for general oversight by the Federal agencies rather than an over-the-shoulder permit-by-permit review;

- that where possible, existing State administrative and permitting procedures be honored, with Federal evaluation of these procedures being directed to the desired objective, not the precise process;

- that any delegation be preceded by a written understanding for resolving intergovernmental disagreements prior to the public hearing process; and

- that any delegation plan provide for a recognition of the variety of State programs which may be used to achieve the objectives of this area of water quality.

ICWP is pleased to submit for the record excerpts of significant findings of this report.

WATER QUALITY EFFECTS OF DAMS

The water quality effects of dams is an issue that was recently litigated in Federal courts. The legal issue was whether discharges from dams should be regulated by NPDES permits under §402 of the Clean Water Act. This argument was rejected. Dams and reservoirs can cause a variety of water quality changes depending on the design and operation of discharge works, the likelihood of thermal stratification, and the quality of reservoir inflow. Design

and operation techniques to avoid the rare problems are known and widely employed.

On July 28, 1982, Mr. Kenneth Dunn of Idaho and I were privileged to testify before this Subcommittee on this issue. At that time we presented the results of ICWP's survey of the States regarding existing State mechanisms for regulating and taking into account the water quality impact of dams. I am pleased to submit for the record a summary of the survey results.

The survey indicated that the water quality problems of dams can be and are addressed by programs operated under State law. For example, it is already a widespread practice among States to coordinate the review of permit applications or project proposals for dams or reservoirs with State water quality activities, State fish and game agencies, and the U.S. Fish and Wildlife Service. Also, many States reported that, should an existing dam or reservoir contribute to or cause pollution, it is subject to regulation and corrective action.

It is ICWP's view that dams are and should continue to be evaluated on a case-by-case or site-specific basis, and subjected to water quality management control when it is determined that water pollution results from a project. Under existing State law and mechanisms, water quality protection can be achieved where needed and feasible.

Should Congress choose to request a further study of this issue, it is urged to include in its request for a study the requirements that EPA, in cooperation with State water resource officials, report on the existing procedure (both formal and informal) within States to take account of the water quality impacts of dams, the interrelationship between achieving water quantity (resource) objectives at a dam and water quality objectives, and the potential impacts on the achievability of the primary purposes for which a dam or reservoir was constructed if water quality objectives are given priority.

In addition to the involvement of State water resources officials, ICWP recommends that important water quantity agencies such as the Corps of Engineers, the Bureau of Reclamation, and the Soil Conservation Service, be full and equal partners with EPA in the design and implementation of any such study.

The Committee on Public Works and Transportation is already familiar with the essential role of dams in the development and utilization of water resources. There are many regions of the nation where ample water supplies cannot be obtained by any other means. Thousands of miles of navigable waterways also depend on dams. The proposed study could improve an understanding of the relations between water use and water quality and the need for coordinated planning.

SUMMARY

Throughout this testimony we have shown that water use and water quality are not independent matters. Water uses have quality needs and water use itself can affect quality. Planning for both must be coordinated. This is a continuing process, because new water use needs will emerge and prior water uses must be changed.

ICWP supports the principle of non-degradation. However, we have shown the difficulty of drafting a workable non-degradation policy. Rather, the principle should be a primary objective of water quality planning.

The Clean Water Act provides the legal framework for this planning, but the work has only begun. Nevertheless, sound planning is the best assurance that the nation's water use needs will be met and that water quality will be restored and maintained to support water use. On the other hand, any action to freeze water quality standards or uses is the antithesis of planning to meet water use needs. What could be more intolerable than to waste water and financial resources and not meet water needs?

ICWP appreciates the opportunity to testify on this matter. We will continue to support and assist water quality programs in any way we can.

ICWP maintains an office at 21 DuPont Circle, N.W., Suite 600, Washington, D.C. 20036 headed by Joan M. Kovalic, Executive Director and General Counsel.

INTERSTATE CONFERENCE
ICWP
ON WATER PROBLEMS

SURVEY

OF THE STATES

ON PROGRAMS RELATING TO

SECTION 404

Public Law 92-500

AND

SECTION 10

Rivers and Harbors Act of 1899

SIGNIFICANT FINDINGS:

EXCERPTS FROM

MAIN REPORT

PUBLISHED IN NOVEMBER, 1979

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NOTE:

The Main Report and Appendices of the ICWP survey of states relating to Section 404 and Section 10 programs are out of print.

Because interest in the results of this ICWP survey continues, we have reproduced portions of the survey results which are presented herewith as "SIGNIFICANT FINDINGS."

Henry Silbermann
ICWP Secretary-Treasurer
July 15, 1982

PREFACE

State water resources administrators throughout the Nation have a significant interest in the actions of the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency and the other involved Federal agencies regarding implementation of the rules and regulations for Section 404 of P.L. 92-500 (Federal Water Pollution Control Act Amendments of 1972).

The States have raised many questions regarding the scope of the regulations, the conflicts with existing State programs, the overall practicability of the regulations, and the efficiency of these regulations in effecting improvements in the qualities of the waters they were designed to regulate.

The U.S. Army Corps of Engineers, cognizant of its responsibilities under P.L. 92-500 and the need to lessen, as far as practicable, redundancy in the programs of State and Federal government, contracted on December 29, 1975 with the Interstate Conference on Water Problems (ICWP) through the U.S. Water Resources Council (WRC) to explore the capabilities of the States to conduct programs equivalent to those mandated by Section 404 of P.L. 92-500 and the pertinent Court mandated Federal regulations and guidelines.

This final report to the Corps of Engineers constitutes the result of that effort.

The States' participation in the survey which provided the date for this report is evidence of the overwhelming concern of the States regarding the regulations governing implementation of Section 404. All 50 of the "constitutional States" and three of the territorial entities provided information for the survey of State programs affected by Section 404. (Forty-nine States and three territorial entities completed the survey questionnaire; one State (California) submitted more general comments which are not part of the qualified survey results).

The conclusions and findings contained in this report are the sole responsibility of ICWP and are based on factual information provided by respondents to a comprehensive questionnaire. The information received was compiled, catalogued, and evaluated by an ICWP Task Force on Navigable Waters which also prepared this report.

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CHAPTER I - INTRODUCTION

1. Background

P.L. 92-500 (The Federal Water Pollution Control Amendments of 1972) greatly expanded the activities of the Federal government in controlling pollution in the waters within the geographic boundaries of the United States. Many of the waters that have previously been considered the sole jurisdiction of the States are now included within the regulatory confines of the Federal government in accordance with this Act. Because of the active role that many States had taken in the years previous to enactment of P.L. 52-500, many of the waters within the boundaries of the States are now subject to dual management by both the State and Federal governments.

The States, in numerous cases, have taken an active role in the development of regulations which govern the use and development of shore land, stream beds, wetlands and other areas adjacent to water courses and lakes. These rules and regulations of the States have developed over an extended period of time and have a firm basis in the laws of the States. State officials have expressed concern regarding the general expansion of Federal regulatory authority in these areas well before the most recent Court decision and the subsequent Corps of Engineer's regulations "Permits for Activities in Navigable Waters or Ocean Waters," which were promulgated as "Interim Final" on July 25, 1975. With regard to these specific regulations many State officials have declared publicly that the Corps' program for implementation of Section 404 activities, as it now exists, is an unwarranted and unjustified intrusion by the Federal government into State programs and responsibilities.

The Interstate Conference on Water Problems (ICWP) has been specifically concerned with the implementation of Section 404 because of its potential impact on the existing State regulatory programs. The States have been involved in the management, development, and control of waters within their boundaries for an extended period of time. This is true not only in the West, where water management is most critical to the maintenance and enhancement of the economy, but also in the East where the problems of the more fully industrialized areas are evidenced.

ICWP has been interested and involved in the development and implementation of the programs of the Corps of Engineers under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of P.L. 92-500 because of their broad impact on the ability of the States to regulate and utilize waters within their boundaries. The ICWP Executive Committee and ICWP State members have taken an active role in commenting on the proposed Federal regulations relating to these programs. In addition, ICWP has worked cooperatively with the National Governors' Conference and other interested groups to assist in developing summary input to the Federal agencies to inform them of State views and assist the Federal agencies in implementing workable programs.

appropriate to their particular and peculiar situations and to best meet the needs of their citizens. This information can also be of assistance to the States as they determine what the most effective course of action will be for their future programs. The States will now have an opportunity to develop a most effective implementation plan as well as the necessary legislative authorizations.

The survey report in this document was performed by ICWP in its role as Standing State Advisory Committee to the U.S. Water Resources Council (WRC) under direct contract with the U.S. Army Corps of Engineers in order to continue and expand the States input on these critical issues.

ICWP, in preparation for this study, reviewed the implementation of Section 404 with a number of ICWP members. It was the position of the members contacted that, in order to assure the program of regulation under Section 404 met the intent of Congress and the needs of the citizens, the Section 404 regulations should be:

1. Administered in conjunction with or in full cooperation with existing and emerging State programs, or

2. Be fully delegated to the States to ensure a minimum of duplication of effort and a minimum of governmental expenditure at all levels.

ICWP also maintains as a basic premise to this study that: 1) The States through their Constitutions and acts of admissions have the authority to regulate the beds and streams of the waters within their boundaries, 2) The States essentially agree with the premise of P.L. 92-500, which was to regulate, confine and otherwise deal with pollution at its source, regardless of the type of pollution regulated, 3) The States agree with the general objectives and policies outlined in Section 101 of P.L. 92-500 which indicates the intent of Congress is that the States should have the primary responsibility in the administration and implementation of pollution control programs and that to the maximum extent possible procedures utilized for implementing the Act should encourage minimization of paper work, and 4) The States agree that there is a continuing need to regulate the placement of fill material and other solid and suspended pollutants in their waters.

From the beginning consideration of this study it was understood by ICWP and the Corps of Engineers that the analysis of relevant State programs would not be an easy task due to the diversity of State approaches to the several issues involved in this regulation. It was recognized that the States have chosen, due to their regional diversity and special needs, to enact legislation in these areas in an incremental sequence. It was further understood that this incremental approach would likely lead to programs of different capabilities with different emphasis.

ICWP chose to accept the offer to contract with the Corps of Engineers through WRC because of the need for the States to have available information on their programs in comparison to those of other States. It was assumed that this information would permit each State (Governor, Legislature, and State agency administrators) to make informed judgements on the programs and administrative processes most appropriate to their particular and peculiar situations and to best meet the needs of their citizens. This information can also be of assistance to the States as they determine what the most effective course of action will be for their future programs. The States will now have an opportunity to develop a most effective implementation plan as well as the necessary legislative authorizations.

2. Project Coordination

The Interstate Conference on Water Problems (ICWP) is a national association of State, intrastate and interstate officials concerned with water resources administration. ICWP was established in 1959 as an outgrowth of regional conferences on water problems as recognized in the same year by action of the General Assembly of the States.

ICWP, as an independent association of water officials, works cooperatively with the National Governor's Conference, the National Conference of State Legislatures and the Council of State Governments and serves as an advisory body to other associations of government officials in the area of water resources management, development and conservation.

The purpose of ICWP is to facilitate cooperation, consultation and exchange of information among State, intrastate and interstate officials and agencies as to the conservation, use, development and administration of water and related land resources, the law governing these matters and Federal-State relationships in the field of water and related resources; and, to the extent feasible and desirable, to promote a consensus of harmonizing of State and intrastate views on any subject within the purview of ICWP, and to present and disseminate such views.

Participants in ICWP are State officials serving as a result of election, by statute or by designation of their respective States. The Executive Committee of ICWP is selected by the entire membership, and is representative of all interests of ICWP.

The Water Resources Planning Act of 1965 (P.L. 89-80), in establishing the U.S. Water Resources Council (WRC), declared a policy of close cooperation between the WRC and the States in coordination of planning for use of the Nation's water and related land resources. WRC provides a vehicle for considering and coordinating the diverse views of the Federal mission-oriented agencies and for compiling information on the water resources problems and needs of the different regions within the United States.

In order to more effectively carry out the policy of cooperation with the States, WRC established a Standing State Advisory Committee (SSAC) in 1971. Since 1971 the SSAC has been renewed and chartered in accordance with the Federal Advisory Committee Act of 1972. The SSAC is thereby authorized to render advice and services on State views on water related policy and programs to the Water Resources Council and its member agencies.

The specific objective of the SSAC is to provide for increased participation by the States in the development of policies and procedures for the conservation, development and utilization of water and related land resources of the United States, and to provide WRC with the views and opinions of State interests on matters of concern to WRC and the States.

The U.S. Army Corps of Engineers, determining that the implementation of Section 404 involved the agencies of several of the Federal departments, requested that WRC permit the SSAC (ICWP) to provide input to the Corps of Engineers and the other agencies on the relative capability of the States. In its request to WRC's Council of Representatives, the Corps of Engineers stated:

> "The need for reasonably complete coverage and for acceptable accuracy dictates use of an existing means of reaching the States and assembling the information. The Standing State Advisory Committee (SSAC) to the Council seems ideally suited to this effort, and we would like to ask the Committee and the Interstate Conference on Water Problems (ICWP), which it represents, to accept the assignment."

Discussion of the Corps of Engineers request took place at WRC's Council of Representatives meeting on December 17, 1973. At that time it was indicated that the SSAC, through ICWP, had performed several surveys of the States with a very high level of participation by the States. The survey previously performed had a high level of acceptance, both by the Federal agencies and the States that participated in the surveys.

Following the general discussion by WRC's member agencies, the Council of Representatives concurred in the recommendation presented by the Corps of Engineers that SSAC (ICWP) be permitted to accept the task of providing the Corps with a report on the capability of the States to administer Section 404 of P.L. 92-500.

3. Contract Agreement

The ICWP-WRC-Corps of Engineers contract was executed on December 23, 1975 for the specfic purpose of specifying the arrangements under which the SSAC (ICWP) would provide information to the Corps of Engineers on the capability of the States to assist in implementing Section 404, P.L. 92-500.

The specific responsibilities of ICWP were listed in the contract as follows:

1. To develop a survey questionnaire designed to gather the necessary information from the States in order to prepare a report on the present capability of the States to assist in implementing Section 404 of P.L. 92-500. (The Corps of Engineers retained final concurrence authority on the questionnaire, prior to circulation to the States. The Corps of Engineers also identified other Federal agencies as being potentially involved in the Federal administration of Section 404. These agencies were provided with drafts of the questionnaire and participated in the Corps review of the questionnaire prior to its distribution.)

2. To circulate the questionnaire to all States for their completion, and to perform the necessary follow-up to assure that the questionnaires were processed.

3. To prepare a report on the present capability of the States to assist in implementing Section 404 of P.L. 92-500.

4. To provide to the Corps of Engineers, following the final summary report, one copy of all supporting material including completed questionnaires to the Corps of Engineers.

5. To provide such other reports to the Corps of Engineers as may be necessary to assist in inter-agency communications regarding the development of alternate implementation plans for Section 404 of P.L. 92-500.

It should be noted that several preliminary reports were prepared including a preliminary report submitted to the Corps on approximately April 1, 1976. These reports were discussed with the Corps of Engineers, and representatives of ICWP assisted the Corps in describing the study results to the affected Committees of Congress and associated Federal agencies.

Periodically the Corps has requested preliminary information to assist them in providing input to the Office of Management and Budget and the Office of the Secretary of Army. This information has been provided on a request basis and has been distributed to the other Federal agencies involved and to the appropriate Congressional Committees. This special information, while not a stated part of the agreement between the Corps of Engineers and ICWP has been of great importance in the overall decision-making process regarding potential amendments to P.L. 92-500.

In addition to these preliminary reports, the Corps of Engineers requested that representatives of ICWP be available during the course of House Pulbic Works and Transportation Committee mark-up sessions on H.R. 9560, proposed Amendments to the Federal Water Pollution Control Act.

All of these activities have been performed within the confines of the original contract agreement and within the confines of the original funding constraints.

4. Survey Methodology

The Interstate Conference on Water Problems (ICWP) was involved with numerous review activities regarding the July 25, 1979 interim final regulations of the Corps of Engineers for implementing Section 404 of P.L. 92-500. ICWP was also involved in review of the guidelines for implementation of Section 404 prepared by the Environmental Protection Agency. These activities were coordinated through the National Governors' Conference with ICWP representatives participating in the National Governors' Conference Special Task Force on Section 404. During the course of activities in this Special Task Force, several persons involved suggested to the Corps of Engineers that additional information was needed on the capabilities of the States to participate in the implementation of Section 404. At that time no possiblity of delegation of the Section 404 program to the States for implementation existed. However, the National Governors' Conference Task Force indicated that the States could and would contribute their expertise to the efficient implementation of this program.

Following the implementation of the Section 404 regulations and guidelines, additional conversations with regard to State participation ensued between the Corps of Engineers, the National Governors' Conference and ICWP.

During this same period of time, ICWP identified several of its Executive Committee and other State members who indicated a special interest in the further refinement of procedures for implementation of Section 404. These ICWP members were formed into a Task Force on Navigable Waters and volunteered their services to continue necessary review of this program. Members of the Navigable Waters Task Force included representation from State agencies that operated integrated programs including both water quality and water resources management programs. These Task Force members were selected to assure that consideration of both water quantity and quality issues would be given full hearing during the course of any Section 404 review.

The ICWP Task Force on Navigable Waters indicated a continuing interest in determining the States' capabilities to implement Section 404 type programs. They also encouraged the ICWP Executive Committee to communicate this desire to the Corps of Engineers and representatives of the National Governors' Conference. In addition, members of the ICWP Task Force also provided initial questions which might be used in a questionnaire to determine the States' capabilities, should such a questionnaire be developed.

As a result of this preliminary activity by the ICWP Task Force, and with the urging of the National Governors' Conference, a representative of ICWP was invited to participate in a meeting called by the Corps of Engineers on November 21, 1975 to review the possibility of surveying the States; capabilities in programs similar to or equivalent to the Section 404 program of the Corps of Engineers. Participants at the November 21 meeting, included representatives of the National Governor's Conference, the Office of Coastal Zone Management (CZM) - U.S. Department of Commerce, the U.S. Environmental Protection Agency (EPA), and the Corps of Engineers requested that a draft questionnaire be developed by ICWP and submitted to the Corps. It was assumed

that a questionnaire survey of the States would be accomplished by the Corps of Engineers, one of the other involved Federal agencies, or by an outside organization. The Corps of Engineers also requested that ICWP submit a preliminary proposal to conduct the survey of the States on programs relating to Section 404 of P.L. 92-500.

The initial preliminary draft survey questionnaire and the proposal to conduct the survey were subsequently submitted to the Corps of Engineers on November 25 for the Corps' review and comment. Discussions were conducted during the month of December regarding further details of the proposed contract between the Standing State Advisory Committee (SSAC) to the Water Resources Council (WRC) and the Corps of Engineers. A final contract for the conduct of this survey and preparation of the report was executed on December 29, 1975.

Development Of The Questionnaire

Development of the final questionnaire document (See Exhibit A.) began with the first formal meeting of the ICWP Task Force on Navigable Waters held December 29-31, 1975 in Washington, D.C. Members of the ICWP Task Force were provided with comments from the Corps of Engineers. These comments represented the coordinated response of the Corps of Engineers, EPA, and CZM. ICWP Task Force members reviewed the questionnaire, proposed attachements and instruction for the questionnaire, and developed a final suggested questionnaire for presentation to and approval of the Corps of Engineers. A meeting was held on the afternoon of December 30 to review the proposed questionnare. Attendees at this meeting included a representative of the National Governors' Conference, EPA, the Corps of Engineers, and the ICWP Task Force on Navigable Waters. At the conclusion of this meeting, initial approval of the questionnaire was given by the Corps of Engineers subject to minor corrections by the ICWP Task Force in consultation with the Corps of Engineers.

During the period of December 31, 1975 and early January, 1976 a number of corrections, changes, adaptations, etc., were made in the questionnaire forms, the instruction sheets and the explanation paper. All such changes were reviewed with the Corps of Engineers prior to printing of the materials for distribution to the States.

Distribution Of The Questionnaire

On January 9, 1976 the questionnaire and supporting materials were distributed to:

1. State water resource administrators (with original covering letter)

2. State water pollution control administrators (with original covering letter)

3. Governors (under covering memorandum from the National Governors' Conference)

(Copies of the original covering letters, the memorandum from the National Governors' Conference, and all questionnaire and instruction material distributed to the States is contained in Appendix II. of this Report.)

In addition to the National Governors' Conference memorandum, ICWP sent an immediate follow-up letter to the Governor of each State, encouraging them to coordinate the response from their State agencies. Also attached to this Governor's letter was a list of the individuals in their State that had received the questionnaire material.

In order to assure the greatest visibility and response of the States to this survey questionnaire, copies of the questionnaire were also sent with a covering memroandum to the following organizations and offices:

1. Task Force on Natural Resources and Environmental Management, National Governor's Conference.

2. ICWP Associate Members

3. Council of State Governments Regional Offices

4. River Basin Commission Chairmen

5. ICWP Executive Committee Members

6. Western States Water Council

7. U.S. Water Resources Council

8. Selected staff members of the Office of Coastal Zone Management, and the Environmental Protection Agency.

A total of more than 250 copies of the questionnaire and supporting materials were distributed to the States and agencies of the States in the initial distribution. Of these 250, more than 200 were sent directly to Governors and administrators of State agencies to assure the comprehensive coverage which resulted in the 100% response from the States received by this survey.

It should be noted that on January 19, 1976 Governor J. James Exon (Nebraska) also sent a personal letter to each of the other Governors encouraging them to coordinate and expedite their State's response to this survey questionnaire.

In order to assure full understanding of the questionnaire and its importance to overall the survey, each member of the ICWP Task Force was assigned a group of States for follow-up contact. These follow-up contacts were performed prior to January 31, 1976. In addition, the addresses and telephone numbers of the ICWP Task Force members were published in the survey instructions and many States took advantage of this opportunity to contact Task Force members directly to receive additional interpretation of the survey questions. This procedure provided an opportunity for direct contact between those intimately

familiar with the development of the questionnaire and the specific objectives of each question to clarify any potential misunderstandings prior to completion of the individual questions. In addition, this procedure provided an early identification of potential issues which had been overlooked in the questionnaire, and of questions which were not directly relevant to the objectives of the study.

At all times during the course of the survey and questionnaire completion every attempt was made to obtain factual information from the States as free of prejudice and bias as possible. Continuing efforts were made to assure that the States would provide accurate information, without regard to the ultimate conclusions of the survey.

Processing And Verification Procedures

Completed questionnaire forms and supplemental materials were transmitted to the ICWP Office in St. Paul, Minnesota. Supplemental materials were classified upon receipt as:

1. Legislation (laws)

2. Rules and Regulations

3. Other materials

Following this classifications the specific titles were entered on a supplemental material record by classification. The supplemental materials record for each of the entities participating in the survey are included in this report as Appendix II. The actual documents submitted and itemized in this report will be submitted to the Corps of Engineers for reference and file purposes.

Upon receipt of the completed survey questionnaire, the ICWP Project Coordinator reviewed the information submitted for consistency and formed a "desk validation" based on key questions identified by the ICWP Task Force. Any internal inconsistencies or voids in information were checked with the individual completing the State questionnaire response. When information was inadvertently ommitted, the States were requested to submit this additional information. Where internal inconsistencies in the information were identified, States were requested to resubmit their information after validation with their respective State agencies. In no case was information changed or any way altered without confirmation from the State agency official providing the information.

All States, with the exception of California, provided ICWP with a completed questionnaire. California provided a letter submission which was not otherwise quantifiable into the questionnaire format.

When States submitted information from only one agency, an attempt was made to verify that that was the only agency operating programs which were defined as "similar to" or "duplicated in part or in whole" by the Section 404 program. When additional agencies were identified, a request was made by the ICWP Project Coordinator that the additional information be provided for inclusion in the survey.

Following the desk validation of the survey information, a copy of the questionnaire was forwarded to the Nebraska Natural Resources Commission for computer coding and processing. Where necessary, annotations were provided by the ICWP Project Coordinator for the purpose of clarifying the response of the State for input into the Computer system.

Before processing the information for the computer, the input data was proofread and verified by staff members of the Nebraska Natural Resources Commission. Following the data input the information was again verified by the Nebraska Natural Resources Commission staff. A final verification of the computer input information was also carried out by the ICWP office.

In order to provide additional verfication of the final computer processed information, partial printouts involving selected States were returned to those States for their review. The States were requested to review the information and compare it with the data that they had submitted on the origianl survey questionnaire form. States participating in this verification activity reported that the information appearing on th computer printout accurately reflected the information they had submitted and requested no changes in the computer processed information.

(A detailed description of the data processing procedures utilized by the computer terminal staff is contained in Appendix I. of this report.)

It should be noted that all information on Questionnaire Form A was verified. Because of the nature of the information Questionnaire Form B, it was extermely difficult to verify 100% of the information. It should be noted, however, that almost no errors were found in the Form B information and for the portion of the Form B information verified, no errors were identified. Form B information relating "Dollar Expended, Man-Power Applied, and Permits Issued," however, was not verified and must be considered of limited validity.

CHAPTER II - SUMMARY RESULTS

1. Conclusions

The purpose of the Contract between the Interstate Conference on Water Problems (ICWP) and the Army Corps of Engineers was to:

1) Determine the scope of State program regulating activities in water courses and water bodies in ways similar to or duplicative of those regulations now in force and/or scheduled under the Section 404 and Section 10 program, and

2) To determine the interest of the States in accepting delegation of the Section 404 and Section 10 permit program of the Corps of Engineers.

The States have indicated a clear interest in seeking delegation of the Section 404 program. Thirty-four of the 52 States and territorial entities analyzed have indicated a preliminary interest in seeking this delegatin should the Federal Water Pollution Control Act amendments of 1972 be further amended to permit this delegation. This interest, however, is tempered by several conditions identified by the States. The conditions are as follows:

1) Sufficient Federal funds must be made available to the States on a continuing basis in order to initiate and continue the program. The States anticipate a significantly increased workload should they seek delegation. Even those States that would appear to have programs on line which are more extensive or as extensive as the Corps of Engineers program anticipate additional funds would be necessary in order to fulfill the paperwork requirement of the Corps' program.

In addition, it should be noted that the attitude of the States with regard to Federal initiated programs appears to be changing rapidly. In the past, especially in the late 60's and early 70's, States eagerly accepted new programs and sought legislative approval for changes in State laws which were required by the Federal government. Because of negative experiences with changing Federal approaches to programs involving the States, State administrative officials, Legislatures and Governors are becoming much more reluctant to "jump on the bandwagon" with a new Federal program.

2) The States appear to believe that "one set of national standards" may not meet the objective of the Federal Water Pollution Control Act in this important area. The States are therefore suggesting that any legislation to permit delegation should also permit recognition of the unique physical and hydrological characteristics of the respective States. In essence, this would call for legislation which would permit the Corps to recognize programs of varying scope in the States.

3) The States appear to desire a form of delegation which would be complete, with no reserved authority for the Corps of Engineers. While general oversight would be anticipated, a case by case or permit by permit review would generally be considered objectionable.

4) The States have expressed some concern that the Corps of Engineers procedures are significantly different from those mandated by State administrative procedures now in force in many States. The difficulty in changing administrative procedures which govern all State agencies in order to meet the requirements of delegation for Section 404 programs are perceived to be extremely difficult and perhaps impossible. Again, the States would suggest that the Corps be given latitude to evaluate the States procedures in terms of the objective which they meet, namely the protection of all interests, environmental and applicant.

5) Many States have expressed concern that any delegation should be prefaced by written understanding for resolving intergovernmental disagreements prior to the public hearing process. A number of States have indicated difficulty in other programs when Federal agencies have expressed their concerns and/or objections at the "last minute." The States believe that the lack of such a prior agreement between the concerned governmental agencies can and does lead to a weakening of the regulatory process and thereby a dilution of the objectives the States and Federal agencies are trying to reach.

6) Any plan of delegation must provide for a recognition of the variety of State programs which may be used to achieve the objective in this area of water pollution control. While the Corps of Engineers program provides a single agency responsibility, the States believe in a number of cases that their multiple agency, multiple level of government approach can be as effective as the current Corps program. States have also observed that their programs utilizing a number of agencies may parallel the Federal approach which has the Corps of Engineers as the lead agency with input from many other agencies such as EPA, Fish and Wildlife Service, Office of Coastal Zone Management, etc.

Another area of concern which has been raised during the course of this study is the ability of the States and/or the Corps of Engineers to make decisions in the important area of wetlands regulation. Much of the discussion surrounding the application of Section 404 to wetlands has indicated the "invaluableness" of wetlands. While all respondents appear to be committed to the objective of protecting and enhancing the wetlands, the unanswered questions regarding wetlands appear to outnumber those for which an affirmative declaration can be provided. Such issues as the tradeoffs between wetlands and agricultural land in urban development, the role of wetlands (especially small wetlands areas) in aquifer recharge and in wildlife production appear to be open to serious debate. On the basis of this study, it appears that a great deal of additional work must be done in the area of research to provide clear guidance to regulatory decision-makers in this area.

In discussion of this survey with State officials, it is also apparent that they question the role of the Corps of Engineers in this regulatory activity. While all recognize the ability of the Corps to carry out programs effectively and efficiently, it has been suggested that the expertise of the Corps of Engineers might be more efficiently utilized in the enhancement of navigation, leaving the primary environmental protection and water pollution control activities with the Environmental Protection Agency and its State cooperating agencies.

As the Corps of Engineers representatives are well aware, many State and other officials have questioned the scope of the Section 404 regulations. It appears that much additional research will be required to determine the appropriate jurisdictional scope and reach of these regulations. Many have suggested that the environmental benefit achieved by this regulation may not justify the cost in pulbic and private funds.

The attached tables and appendices provide additional information which further documents the observations included in this summary.

2. Summary Of State Responses

The following information is a summary of the States' response to most of the survey questions asked. This information is based on the response of the 49 States and three territorial entities analyzed.

This summary does not take into account all the survey questions formulated, only those that produce quantifiable results. Further, due to the nature of some survey questions, the 49 States and 3 territorial entities were not always able to respond to each question. Consequently, the results obtained and summarized for a few of the items listed below do not contain the response of all 49 States and three territoral entities analyzed.

The information summarized below does, however, provide a most accurate picture of the capability of the States to assist the Corps in implementing Section 404, P.L. 92-500. For a more specific State-by-State breakdown of the survey results, see Chapter III, Section 2, State-by-State Tabulated Survey Results.

1. State Control

Of the 49 States and three territorial entities analyzed, 49 States and two territorial entities indicated they had programs for the control of activities performed in or near watercourses or water bodies. American Samoa does not have such programs.

2. Programs Identified

In the 49 States and two territorial entities with control of activities performed in or near watercourses or water bodies, 290 programs were identified and then analyzed. This averages 5.7 programs per State with a range from only one program in one State (Missouri) to 23 programs in another (Texas).

3. Duplication

Of the 49 States and two territorial entities with control of activities, in or near water courses or water bodies, 45 States and two territorial entities indicated that their programs in whole or in part were similar or duplicative of activities and regulations in force under Section 404, P.L. 92-500, or Section 10, River and Harbor Act of 1899.

Four States indicated that their programs in whole or in part were not similar or duplicative.

4. Duplicative Programs

Of the 45 States and two territorial entities that indicated their programs were in whole or in part similar or duplicative or of activities and regulations in force under Section 404, P.L. 92-500, or Section 10, River and Harbor Act of 1899, 194 programs were identified as being duplicated in whole or in part by the Corps' permit program. This averages 4.1 programs per State, with a range from only one program in one State (Missouri) to 15 programs in another (Texas).

(The following items (5. thru 26.) are based on the programs identified by the 45 States and two territorial entities in question 2.b. regarding those State programs in whole or in part similar or duplicative or activities and regulations now in force under Section 404, P.L. 92-500, or Section 10 River and Harbor Act of 1899.)

5. Programs Legislation

Of the 194 similar or duplicative programs indentified by the 45 States and two territorial entities, 186 were mandated by State legislation.

6. Objectives

Of the 45 States and two territorial entities identifying programs as being duplicated in whole or in part by the Corps permit program:

37 identified water quality as a "major objective" of some or all of its programs;

32 identified wetlands protection as a "major objective" of some or all of its programs; and

27 identified water supply as a "major objective" of some or all of its programs.

7. Program Areas

The duplicative programs identified by the 45 States and two territorial entities covered 458 different waters. This averages 9.7 different waters covered per State, with a range from only one water type covered in Washington, D.C. to 10 different waters covered in two different States (Massachusetts and Texas). This averages 2.4 different water types per program.

8. Program Authority

Of the 45 States and two territorial entities analyzed, 45 indicated the following combination of authority for its programs:

- Issuance/denial of State permits with conditions attached.
- Detection of unauthorized activities.
- Enforcement of State permits.

9. Activities

The survey indicated 24 specific types of activities which would involve the permanent disturbance of water bodies. Thirty respondents indicated their State or territorial entity has control of 80 or more activities. Twelve respondents indicated their State or territorial entity has control of between 10 and 20 activities (inclusive). Five respondents indicated their State or territorial entity has control of 10 or less activities.

10. General Permit

Eighteen of the 45 States and two territorial entities indicated some type of general permit authority. Twenty-nine of the 45 States and two territorial entitites indicated no type of general permit authority.

11. Permit Consideration

The Corps of Engineers permit regulations require consideration of 16 issue areas prior to the granting of a permit. The 45 States and two territorial entities with similar or duplicative programs indicated they utilized similar considerations as follows:

9 consider all 16 areas;

11 consider 15 areas;

5 consider 15 areas'

4 consider 13 areas;

8 consider 12 areas;

10 consider 11 or less areas.

12. Permit Processing

Forty-six of the 45 States and two territorial entities indicated the majority of the States' programs are vested in centralized State offices. Two of the 47 States and territories (Washington, D.C. and Louisiana) indicated the majority of their particular programs are vested in some other authority.

13. Public Input

Twenty-six of the 47 States and two territorial entities indicated public input on permit applications is obtained in whole or in part through public notices.

Forty-three of the 47 States and two territorial entities indicated public input on permit applications is obtained in whole or in part through required public hearings.

14. Permit Review

In the 45 States and two territorial entities with programs similar or duplicative of those activities in force under Section 404 and Section 10,

176 different agencies were identified as being sent an application for a State permit for review. This averages 3.7 agencies per State with a range from only one agency in two States (Louisiana and New York), to nine agencies in several other States (Alabama, Hawaii, Indiana, Mississippi, and Oregon).

15. Dredge Criteria

Of the 45 States and two territorial entities analyzed, 33 indicated their State or territorial entity has criteria for dredge material. Fourteen indicated they do not have criteria for dredge material.

16. Fill Criteria

Of the 45 States and two territorial entities analyzed, 30 indicated their State or territorial entity has criteria for fill material. Seventeen respondents indicated their State or territorial entity does not have criteria for fill material.

17. Agency Dredging Requirements

Of the 45 States and two territorial entities analyzed, 39 indicated procedures their State or territorial entity include requirements for dredeging or filling operations performed by or for agencies of a particular State. Of this 39, no State or territorial entity indicated these procedures are identical to those required of private applicants.

Eight responses indicated the procedures in their State or territorial entity do not include requirements for dredging or filling operations performed by or for agencies of a particular State.

18. Technical Evaluation

Regarding the State permit processing agencies of the 45 States and two territorial entities:

8 States indicated their permit processing agencies regularly request technical evaluation of permit applications from Universities;

24 States indicated their permit processing agencies regularly request technical evaluation of permit applications from Federal agencies; and,

35 States indicated their permit processing agencies regularly request technical evaluation of permit applications from State agencies

19. Individual Assistance

Regarding the State permit processing agencies of the 45 States and two territorial entities:

43 States indicated their permit processing agencies provide assistance to individual applicants in preparing applications for permits; and

4 States indicated their permit processing agencies provide no assistance to individual applicants in preparing applications for permits.

20. Permit Enforcement

Of the permits issued by the permit programs of the 45 States and two territorial entities, all 45 States provide for the enforcement of these permits by the permit processing agency involved. Both territorial entities analyzed do not provide for such enforcement.

21. Wetlands Definition

Of the 45 States and two territorial entities analyzed, 26 indicated their State or territorial entity defines wetlands and 21 indicated their State or territorial entity does not define wetlands. Twenty States indicated that wetlands were defined for the purposes of their regulatory programs(s).

22. Improved Waterways

Within the 45 States and two territorial entities analyzed, 274 improved waterways were identified. This averages 5.8 per State, with a range from no improved waterways identified in Arizona and Washington, D.C. and 11 improved waterways identified in several other States (Alaska, Massachusetts, New Hampshire and Texas).

23. Emergency Procedures

Of the 45 States and two territorial entities analyzed, 15 indicated that in the majority of their State programs no special procedures for emergency situations are provided.

Twenty-nine respondents indicated that in the majority of their State programs certain special procedures for emergency situations are provided.

24. Applicant Costs

Of the costs applicants are required to pay in the processing of State permits in the 45 States and two territorial entities, 46 indicated applicants are required to pay for preparation of supporting documentation. Thirty-six indicated applicants in their State or territorial entity are required to pay for performance and evaluation of required tests. Twenty-nine indicated applicants in their State or territorial entity are required to pay for preparation of Environmental Impact Assessments or Impact Statements.

25. Environmental Abatement

Of the 45 States and two territorial entities analyzed, 31 indicated their State or territorial entity includes procedures whereby compliance with State approved conditions for offsetting environmental damages are required.

(The following items (26. through 42.) are based on the response of all 49 States and three territorial entities analyzed. These items are not based solely on the State programs identified in survey question 2.b. as being in whole or in part similar or duplicative of activities and regulations now in force under Section 404, P.L. 92-500, or Section 10, River and Harbor Act of 1899.

Due to the nature of many of the survey questions, however, all of the 49 States and three territorial entities were not always able to respond to each item listed below. For a complete inventory of which State or territorial entity did or did not provide input to the items listed below see Chapter III, Section 2, Tabulated Results).

26. Participation

Pursuant to existing Federal laws and regulations under Section 10 and Section 404, plans for participation by the States and territorial entities analyzed has been reported as follows:

33 States have plans for review and comment on all applications;

39 States have plans for coordination with Federal government programs for permit processing; and

30 States have separate permit processing plans.

27. Section 404 State Administration

Of the 49 States and three territorial entities analyzed:

38 indicated their State or territorial entity generally supports delegation of the Section 404 authority to the State for administration; and

8 indicated their State or territorial entity generally does not support delegation of Section 404 authority to the State for Administration.

28. Section 10 State Administration

Of the 40 States and three territorial entities analyzed:

33 States generally support delegation of the Section 10 authority to the State for Administration; and

15 States generally do not support delegation of Section 10 authority to the State for Administration.

29. Seek Delegation (Section 404, Section 10)

Of the 40 States and three territorial entities analyzed:

34 indicated they would seek delegation of activities under Section 404 for their State or territorial entity;

9 respondents indicated they were "undecided" about seeking delegation of activities under Section 404 for their State or territorial entity

6 respondents indicated they would not seek delegation of activities under Section 10 for their State or territorial entity;

26 indicated they would seek delegation of activities under Section 10 for their State or territorial entity;

11 indicated they were "undecided" about seeking delegation of activities under Section 10 for their State or territorial entity; and

11 indicated they would not seek delegation of activities under Section 10 for their State or territorial entity.

30. Enacting Time

Of the 49 States and three territories analyzed:

32 indicated the average enacting time for their State or territorial entity to adopt any required authorizing legislation and/or funding legislation, and adopt rules, regulations, etc. necessary to assume delegation. This average is 17.5 months per State and ranges from 36 months in two States (South Dakota and Wyoming) to 6 months in several others (Colorado, Deleware, Montana, and Washington).

31. Local Authority

Thirty States indicated local (municipal and county) governments have authority in their State or territorial entity (independent from State agencies) to regulate activities similar or duplicative of those permitted under Section 404 or Section 10. Nineteen States indicated local (municipal and county) governments do not have authority in their State or territorial entity (independent from State agencies) to regulate activities similar or duplicative of those permitted under Section 404 or Section 10.

32. Local Authority Limitation

Of the 30 States indicating local units of government have authority in their State or territorial entity to regulate similar activities:

2 States indicated this authority limits State authority "at this time"; and

2 States believe that this local program authority may pose a "hinderance" to future delegation of the Section 404 or Section 10 programs in their State.

33. Manpower

Based on the estimates of the 49 States and three territorial entities analyzed, manpower (to cover policy and administration, technical and enforcement activities) for all of the programs of a particular State averaged 85.9 person per State. This ranged from only 2 persons in one State (Alabama) to 491 in another (Texas).

34. Expenditures

Based on the estimates of the 49 States and three territorial entities analyzed, expenditures for all of the programs of a particular State averaged $28,157,945.00 per State Fiscal Year 76. This ranges from $5,000.00 in Guam to $1,003,450,000.00 in another State (New York).

35. Permit Applications

Forty States indicated the number of permits applied for per year in their State or territorial entity (1976 estimated or 1975 actual). Based on the information obtained from these 40 states, a total of 56,142 permit applications were received. This represents an average of 1,403.5 permit applications per State, with a range of only 2 permit applications in one State (Deleware) to 15,900 permit applications in another (Oregon).

36. Permits By Fill

Twenty-one States indicated the number of permits granted by quantity of dredged or fill material discharged in their State or territorial entity. Based on the information obtained from these 21 States, 3,313 permits were granted (1976 estimated or 1975 actual) for less than 5,000 cubic yards of dredged or fill material. This averages 157.6 permits per State, with a range from no permits in several States (Minnesota, Oklahoma, Rhode Island and Guam) to 846 permits granted in another (Florida). A total of 1,016 permits were granted (1976 estimated or 1975 actual) for greater than 5,000 cubic yards of fill. This averages 48.3 permits per State, with a range from 1 permit in two States (New Hampshire and Guam) to 208 permits granted in another (Florida).

37. Permits by Purpose

Twenty-two States indicated the number of permits granted for small structures (piers and docks), for large structures (bulkheads), and for dredging activities in their State or territorial entity. Based on the information obtained from these 22 States, 4,214 permits were issued (1976 estimated or 1975 actual) for small structures. This averages 191.5 permits per State, with a range from no such permits issued in several States (Kansas, Minnesota, Oklahoma, Rhode Island and West Virginia) to 888 issued in another (Florida).

A total of 2,976 permits were issued (1976 estimated or 1975 actual) for large structures. This averages 141.7 permits issued per State, with a range from no such permits issued in several States (Florida, Kansas, Minnesota, New Hampshire, Oregon, Utah, and West Virginia) to 2,000 permits in another State (New York). A total of 3,047 permits were issued (1976 estimated or 1975 actual) for dredging activities. This averages 138.5 permits issued per State, with a range from no such permits issued in two States (Louisiana and New Hampshire to 1,150 permits issued in another (New York).

38. Permits by Waterbody Type

Thirty States indicated the number of permits issued for specific waterbody types in their State or territorial entity. Based on the information obtained from these 30 States 5,433 permits were issued (1976 estimated or 1975 actual) for rivers and streams. This averages 181.1 permits per State, with a range from no permits issued in three States (Montana, North Carolina, and Wisconsin) to 864 permits issued in another State (Michigan).

A total of 1,479 permits were issued (1976 estimated or 1975 actual) for marshes, swamps and bogs. This averages 49.3 such permits per State, with a range from no permits issued in numerous States (Alaska, Idaho, Indiana, Kansas, Minnesota etc.) to 1,080 in another (Massachusetts). A total of 3,472 permits were issued (1976 estimated or 1975 actual) for lakes and ponds. This averages 115.7 such permits per State, with a range from no permits issued in several States (Alaska, Minnesota, Nebraska, Nevada, etc.) to 945 in another State (Wisconsin).

39. Permits to Applicant Characteristics

Thirty-four States indicated the number of permits issued by applicant characteristics in their State or territorial entity. Based on the information obtained from these 34 States, 5,754 permits were issued (1976 estimated or 1975 actual) to residential applicants. This averages 169.2 permits per State, with a range from no permits issued in some States (Alabama, Deleware, Michigan, Montana, Oklahoma, etc.) to 1,350 permits issued in another (Florida).

A total of 20,570 permits were issued (1976 estimated or 1975 actual) to commercial and industrial applicants. This averages 606 permits per State, with a range from no such permits issued in one State (New Jersey) to 15,350 in another (Oregon). A total of 2,310 permits were issued (1976 estimated or 1975 actual) to agricultural applicants. This averages 67.9 permits per State, with a range from no such permits issued in several States (Alabama, Delaware, Florida, Lousiana, Michigan, New Hampshire etc.) to 700 permits issued in another (Colorado).

40. Additional Permit Information

Twenty-eight States indicated various requirements of permit information about their State or territorial entity. Based on the information obtained from these 28 States, 2,649 general permits were granted (1976 estimated or 1975 actual). This averages 94.6 permits granted per State with a range from no permits granted in some States (Colorado, Idaho, Iowa, Maryland, Massachusetts, etc.) to 571 permits granted in another State (Minnesota).

A total of 382 permit decisions were appealed (1976 estimated or 1975 actual). This averages 13.6 permit decision appealed per State, with a range from no permit decisions appealed in several States (Colorado, Connecticut, Maryland, Minnesota, Montana, Nebraska, etc.) to 215 in another (Massachusetts). A total of 1,500 permit violations were recorded (1976 estimated or 1975 actual). This averages 53.5 permit violations recorded per State, with a range from no permit violations recorded in some States (Massachusetts, Minnesota, Montana, Nebraska, New Jersey, etc.) to 403 permit violations recorded in another (Maryland).

41. Requirements Applied

Thirty-eight States indicated the number of requirements applied before the granting of permits in their State or territorial entity. Based on the data received from these 38 States, an average of 17.3 requirements per State are applied before the granting of permits. This ranges from one requirement in two States (Arizona and Deleware) to 64 requirements in another State (Texas).

42. Processing Steps

Forty-one States indicated the number of processing steps for the permit programs in their State or territorial entity. Based on the information received from these 41 States, an average of 10.3 processing steps per program was indicated. This ranges from 2.1 steps per program in one State (Mississippi) to 20 steps per program in another State (Virginia).

INTERSTATE CONFERENCE
ICWP
ON WATER PROBLEMS

TESTIMONY OF

THE INTERSTATE CONFERENCE OF WATER PROBLEMS (ICWP)

Presented by

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Before

THE SUBCOMMITTEE ON ENVIRONMENTAL POLLUTION

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

U.S. SENATE

WASHINGTON, D.C.

JULY 28, 1982

Senator Chafee, I appreciate the opportunity to appear before the Subcommittee on Environmental Pollution on behalf of the Interstate Conference of Water Problems (ICWP).

My name is Kenneth Dunn. I am the Director of the Idaho Department of Water Resources. I am here this morning not on behalf of the Department, but in my role as a member of the Board of Directors of ICWP. I am accompanied by Mr. Henry Silbermann who is the Assistant Secretary of the Maryland Department of Natural Resources and also a member of the ICWP Board of Directors.

Interstate Conference on Water Problems (ICWP)

For those on the Subcommittee who may not be familiar with ICWP, a little background may be helpful. The Interstate Conference on Water Problems (ICWP) is a national association on State, interstate, and intrastate water resource agencies concerned with water resources administration and related matters. ICWP was established in 1959 as an outgrowth of a regional conference on water problems as recognized in the same year by action of the General Assembly of the States.

ICWP, as an independent association of water agencies, works cooperatively with the National Governors' Association, the National Conference of State Legislatures, and the Council of State Governments, and serves as an advisory body to other associations of government officials in the area of water resources management, conservation, and development.

The purpose of ICWP is to facilitate cooperation, consultation, and exchange of information among State, intrastate, and interstate officials and agencies, as to the conservation, use, development, and administration of water and related land resources, and the laws governing these matters. For more than 20 years ICWP has been involved intimately in Federal-State relationships dealing with water and related resources. Its constant aim is to encourage intergovernmental cooperation, and to develop a consensus of State and intrastate views on any subject within the purview of ICWP, and to present and disseminate such views.

ICWP is managed by a Board of Directors elected annually, and reflecting national geographic distribution. Currently, Board members are from Idaho, Montana, Oklahoma, California, Ohio, Maryland, Pennsylvania, South Carolina, Kentucky, Mississippi, and Texas. The ICWP national office is located in Washington, D.C.

Court Decision

In the January 29, 1982 decision, National Wildlife Federation v. Gorsuch, the U.S. District Court (DC) held that certain dams may cause the "discharge of pollutants" as defined by the Clean Water Act. Water quality changes held to be "pollutants" included low dissolved oxygen, dissolved iron and maganese, temperature changes, and gas supersaturation.

After considering arguments, the Court decided that discharges over, through, or around dams are "point sources." The Court ordered that EPA ". . . designate dams as a point source category under Section 402 of the Clean Water Act, establish effluent limitations or other performance standards for dams on a categorical, as opposed to a case-by-case basis; and subject existing and proposed dams to all National Pollutant Discharge Elimination System [NPDES] requirements applicable to other categories of point sources . . ."

This decision is currently being appealed by the Environmental Protection Agency (EPA). If EPA is not successful, however, there are approximately 2,300,000 dams in the United States which would require permits under the Court's decision.

The ICWP is concerned that implementation of this decision could seriously interfere with existing State mechanisms to consider water quality impacts in the construction and operation of dams; destroy the balance which must exist among water resource uses including a consideration of water quality; and create an unduly burdensome and costly administrative procedure with little environmental benefit.

Because of the serious implications on the required work effort if the states and Federal agencies, including EPA, must deal with dams as point sources of pollution, the Interstate Conference on Water Problems urges Congress to act promptly.

ICWP recommends that Congress clarify in law -- that changes in water quality caused by the carriage, storage or release or water through dams, conveyance structures, and flow diversion facilities are not point sources of pollution which require national pollution control permits.

Existing State Mechanisms: Response to ICWP Questionnaire

At the outset, it should be noted that in the absence of the NPDES permit system or effluent guidelines promulgated by EPA, the water quality problems of dams can be and are addressed by programs operated under State law. In many States, the design, construction and operation of any existing or new dam must be reviewed for compliance with all State environmental law, including State water quality standards.

In some States, such as Colorado, the State water quality law prohibits requiring a pollution control permit for the carriage, storage, or release of water from or into streams, lakes, reservoirs, or conveyance structures in the exercise of water rights. However, the State law provides that water quality standards may apply to discharges from dams when the State Water Quality Control Commission has adopted appropriate control regulations. This assures that, without requiring pollution control permits, the State can act when justified to protect beneficial uses made of its water resources, to

address specific water quality problems associated with any particular dam.

Some data from a recent ICWP questionnaire to States and inter-and-intra State agencies will illustrate this point. Sixty-six percent of the 35 States responding indicated that their State has a program (other than NPDES) which regulates the construction and/or operation of dams, which includes authority to consider water quality impacts of such construction or operation.

A number of States cited State laws which specifically provide for the regulation of water quality impacts of dams. Two examples are California and Idaho. In California, the State has authority to regulate any discharge of waste that could affect water quality. In addition, the California Environmental Quality Act (CEQA) calls for consideration of all environmental impacts of a project at the time of approval. CEQA can be effectively used to mitigate nonwaste-related water quality impacts when water rights permits are being approved.

General authority is provided by the Idaho water quality standards to regulate all activities which lessen water quality. There is a specific dissolved oxygen standard for waters below dams. The Legislature has established monitoring requirements that are enforced by the Idaho

Department of Health and Welfare. The Idaho Department of Water Resources regulates dam construction, operation and maintenance (dam safety) and also administers water rights, by which water quality concerns are considered.

Mississippi, Montana, New Jersey, North Carolina, Oregon, to name a few, have some type of State statute requiring approval of the construction, alteration, or modification of dams which includes authority for the State to require modifications to adhere to water quality standards. For a listing of State responses to this and other questions, see the summary tables in Attachment A.

Fifty four percent of the States indicated that there are standards or guidelines for the protection of water quality which are applied in the review of permit applications for dam construction. Fifty seven percent reported such standards for dam or reservoir operation. The following standards were reported as being in place: Erosion and sediment control - 57%; Aeration devices or measures - 23%; Thermal release control - 40%; Conservation release/minimum flow requirements downstream to protect water quality - 57%; and, Water quality monitoring in 42% of the States responding.

A fuller sense of the extent to which States already take water quality impacts into account is reflected in responses to the question: "Are reviews of permit applications or project proposals for dams or reservoirs coordinated

with your State water quality activities?" Seventy-nine percent of the States responding said "Yes." Eighty-one percent of the States indicated that there is also coordination with State fish and game agencies; and sixty-six percent reported coordination with the U.S. Fish and Wildlife Service.

In States such as Kansas, Georgia, Michigan, Mississippi, Nevada, New Hampshire, New York, Oregon, Pennsylvania, Vermont, Washington, Wisconsin and Wyoming, agencies concerned with water and related land development and management routinely coordinate comments on proposals for reservoir construction. This coordination includes consideration of water quality impacts and related concerns. Wherever applicable, the concerns of fish and game interests are also considered.

Although fifty seven percent of the States reported that their State water quality program does not require water quality or discharge permits for dam construction, sixty-seven percent of the States indicated that, should an existing dam or reservoir contribute to or cause pollution, it is subject to regulation and corrective action.

For example, California reported that permits would be required if water quality would be affected; and Colorado reported if dewatering occurs during construction a permit will be required with restriction relative to pH, sediment, and oil and grease. In Arizona, the Water Quality Control Council has adopted surface water quality standards and stated

that, although the problem has never arisen, it is possible that a violation caused by operation of a reservoir could be prosecuted under those rules. It is interesting to note that two States, Georgia and New Mexico, indicated that the existing dams which create any water quality problem are large and federally owned. However, many States made it clear that currently no NPDES or NPDES-type permit is required for dam construction.

What Is A Dam?

What constitutes a "dam" for the purposes of regulation? There is a wide range of definitions in State law and practice as to what constitutes a dam. Thirty-two States responded to the question: "How does your State or jurisdiction define a "dam" which is subject to regulation? Twenty-three different answers were given. A few examples follow.

The Dam Safety Act in Louisiana defines a "dam" as any artificial barrier, including appurtenant works, which does or will impound or divert water or any other liquid substance and which (1) is or will be twenty-five feet or more in height from the bed of the watercourse measured at the downstream toe of the barrier or from the lowest elevation of the outside limit of the barrier, if it is not across a stream channel or watercourse, to the maximum water storage elevation or (2) has or will have an impounding capacity at maximum water storage elevation of fifty acre-feet or more. This definition

does not include any dam or barrier that is not or will not be in excess of six feet in height, regardless of storage capacity or which has or will have a storage capacity of maximum water storage elevation not in excess of fifteen acre-feet, regardless of height .

In Indiana, in general, dams are not considered to be subject to regulations if all the following conditions apply: The drainage area above the dam is not more than one square mile (640 acres); the height of the dam from the natural stream bed to spillway level is not more than twenty feet; and, the volume of water impounded does not exceed one hundred acre-feet.

In Idaho, dam means any artifical barrier together with appurtenant works, which is or will be 10 feet or more in height or has or will have an impounding capacity of maximum storage elevation of 50 acre-feet or more. Height of a dam is defined as to the vertical distance from the natural bed of the stream or watercourse at the downstream toe of the barrier, as determined by the Director, or from the lowest elevation of the outside limit of the barrier, if it is not across a stream channel or watercourse, to the maximum water storage elevation. No obstruction in a canal used to raise or lower water therein or divert water therefrom and no fill or structure determined by the Director to be designed

primarily for highway or railroad traffic shall be considered a dam.

Some States, like Iowa, reported that a combination of height and storage standards is used to define. Another example of this is the definition used in New York, where a dam must generally control a drainage area greater than one square mile, or have a height of 10 feet, or impound more than one million gallons of water to be subject to state regulation. In Pennsylvania, any dam which is 15 feet or more in height, has a storage capacity of 50 acre feet, or has a drainage area exceeding 100 acres is subject to state regulation. In Vermont, a structure capable of impounding more than 5,000 cubic feet of water is subject to regulation.

In New Jersey, under the "Safe Dam Act" a dam is defined as any structure which will raise the water of any river or stream more than five (5) feet above the usual mean low water height. Structures of less than this height, if located on natural streams (or rivers) are also regulated pursuant to the Flood Hazard Area Control Act.

In Nevada, any dam 10 feet or greater or storing more than 10 acre feet, must have a permit from the Division of Water Resources. Any dam which is subject to city or county

construction permits is required to use Best Management Practices.

In Nebraska, absent a statutory definition, the department considers dams to be of two types: dams constructed for the purpose of (1) holding back and raising water for service to lands of a higher elevation, or (2) to create greater head for hydroelectric generation. Generally a dam is a constructed barrier designed for either purpose.

The bottom line is definitions of the term "dam" among states vary widely for the purpose of determining the need for regulation. Imposition of a single uniform definition will have significant consequences, and could result in unnecessary disruption of existing State regulatory activities and duplicative administrative practices which may produce no significant water quality improvements.

Need to Integrate Water Resources and Water Quality Considerations

The U.S. District Court ordered that control of dams be approached through categorical effluent standard and NPDES permits. If established water quality standards are, in fact, appropriate and achievable goals, they ought to be met. However, it is not unreasonable to consider some alteration of standards to achieve a reasonable balance between water uses. For example, cold water discharge, and introduced cold water fishery, has been acceptable in instances and actually preferred

to restoration of a warm water regime and associate fishery. In other instances, a release may not be in compliance, or fully in compliance, with water quality standards for the receiving stream, but the persistence of the condition may be short-lived, and therefore acceptable. Another example: low dissolved oxygen and altered temperature may recover to ambient conditions within a time period and reach of the stream and be compatible with the downstream water use.

As is well known, many of the remedies for water quality problems are costly, but cost alone should not and must not deter needed correction where significant environmental improvement can be achieved or anticipated. Yet, should there be a mandate for the imposition of management practices regardless of cost, where the environmental benefits are likely to be small and insignificant, when compared to other environmental protection efforts? We think not.

When judged in this light, ICWP finds that the categorizing of dams as point sources of pollution, subject the NPDES permitting, would add a heavy administrative and economic burden without ensuring significant water quality benefits. There is no doubt that huge expenditures of money would be required for surveys and studies, the NPDES permitting process, the requirements imposed for retrofitting, the requirements imposed for operation and maintenance, the need to report NPDES compliance and non-compliance, the administrative need

for monitoring, etc., etc., and all this-in many, many instances-without achieving real improvements in water quality.

Instead, if dams are evaluated on a case-by-case or site-specific basis, and subjected to water quality management control when it is determined that water pollution results from a project, necessary water quality protection can be achieved where needed and feasible.

New Dams And Reservoirs

Water quality protection must be considered in the planning, design, and construction of new dams and reservoirs. ICWP supports for such new projects, the use of available technology, the providing of baffles and current deflectors where appropriate, destratification techniques for smaller reservoirs, the use of floating pumping stations in certain projects, outlet structures which permit withdrawal of releases from different depths or zones, and other featurs which will make the structure a source of environmental protection and enhancement, and not a source of water pollution. Such evaluation, however, is and should be the responsibility of the individual States.

Shifting the withdrawal to a different zone is a potential solution to many of the water quality problems in release waters. The remedy to cold water discharges is to shift withdrawal to the surface waters (epilimnion) or to mix discharges to achieve a desirable temperature. While existing dams may require major reconstruction of outlet works or installation of skimming weirs to achieve this, the problem could be handled

readily in new projects. For existing dams, spillway crest gates can be operated in lieu of outlet works in some cases, but a skimming weir may be the only solution for deep turbine intakes, and it may not be successful.

Clean Water Act Strategies

The Clean Water Act provides two strategies which are applicable to this issue: 1) point source control via Section 402 or 2) nonpoint source control via Section 208. EPA prefers nonpoint source control and has prepared amendments to the Clean Water Act to accomplish this.

Point source control for dams triggers a series of predetermined and rather inflexible events: 1) categorizing dams for control, 2) establishing effluent guidelines or performance standards, 3) processing NPDES permits, and 4) enforcing permits.

In specific cases, the discharge of waters from dams can produce severe localized impacts. These can best be dealt with on a case-by-case basis. There is a real benefit in the use of our limited staff and financial resources, if we focus on the problems which are known, readily identifiable, and must be corrected.

The issuance of a permit to discharge within prescribed limits generally assumes some control over the character of the discharge itself. In the vast majority of existing dams, no such control exists at the dam site. Therefore,

the only techniques available to effect a change in the discharge are to construct at great-and possibly prohibitive-costs requisite water quality control structures, or to apply management practices to the watershed. Either alternative becomes an extreme administrative burden if it is required that all dams must be subject to NPDES permitting. (There are appoximately 2,300,000 dams in the United States which would require permits under the Court's decision). The proposed amendments by EPA would provide a feasible solution.

Dams As Non-Point Sources

EPA' long-standing interpretation that dams are non-point sources subject to State best management practices allows for responsible State integration of its water resource and water quality management programs. EPA uniform national effluent standards for dams would limit the flexibility of the States to address their own water resource concerns and to balance them against water quality issues.

It should be noted that there are two technologies that when applied to larger dams are beneficial in maintaining quality. One is the pump storage concept which recirculates and changes the relative position of each particulate every 24 hours for the most part. The second is the adequate use of rip rap below the dam discharge point, which if supplied in sufficient quantity, can help reestablish oxygen levels at least cost over time.

The major concern, though, is that by requiring the Environmental Protection Agency to establish effluent limitations and to issue NPDES permits for dams, the issue of water quality per se will become paramount, distorting the very purposes for which the dams were initially constructed, and obstructing the balancing procedures required by the National Environmental Policy Act.

Water quality and other environmental concerns are of great importance. However, reservoirs are constructed and built for other purposes such as flood control, navigation, water supply, and hydropower.

The goal should be a balanced approach to water management recognizing water quality as one of several important considerations. Water control plans must be carefully developed and implemented considering all beneficial project purposes. This process necessarily involves compromise and considerable coordination among water users to obtain the greatest public benefit from each project. Directing EPA, with the single objective of environmental improvement, to establish a permitting program for reservoir regulation could lead to distortion of other equally important water resource objectives.

Some water quality problems can be created or avoided by design elements of the dam, particularly related to spillway and outlet structures. These elements vary greatly according to the type, size, and site of the dam.

Overall the water quality problems posed by dams in large part depend on where the dam is located, upstream sources of pollution that may be concentrated in the dam, the purpose of the reservoir, its depth and volume, structural features, and its operating program. For this reason, it is extremely difficult to categorize the design, operation, or impact of a proposed reservoir, and hence to prescribe effluent guidelines or design standards that are meaningful for a particular category of facility.

Administrative Cost vs Environmental Benefit

Eight-three percent of the States responding to the question "Does your State or jurisdiction feel the dams, waters stored in reservoirs or water released from reservoirs should be subject to the NPDES permit process?" said "No"

Both Arizona and California pointed out that the State had not taken an official position at the time of the questionnaire, but that such permitting is low priority; limited resources are needed elsewhere; and, there is adequate authority to address most water quality issues under State law. Similar statements regarding adequacy of State law, the good working mechanism of the Section 401 process, and the poor cost-effectiveness of NPDES permits were made by States such as Maine, Mississippi, New Jersey, Oklahoma, North Carolina, Vermont, and Wisconsin.

The requirement of permits under NPDES would impose substantial administrative and other cost-related expenditures

on the operation of dams and reservoirs. At the least, NPDES permit limitations on the release of impounded water could interfere with the ~~dauration~~ diversion of water rights and the counteraction of the purposes for which the reservoirs were intended. For example, Colorado reported that because of water rights consideration, agencies within the Department of Natural Resources exercise primary control over releases from dams and reservoirs. State law specifically states that water releases in the exercise of water rights shall not be considered point sources. To issue permits to the approximately two million dams in the U.S., or even to any significant fraction of this number, would have profound implications for the total NPDES program nationally, and for the ability of EPA and the States to adequately regulate major dischargers to toxic pollutants. To issue permits for fifty thousand or sixty thousand of the largest dams or even for a significant portion of that number would substantially impair the ability of States to adequately regulate major discharges of priority pollutants.

The process of permit issuance for dams would constitute a crippling new workload burden for EPA and the States. EPA and the States, wherever possible, issue permits based on promulgated effluent limitations guidelines. EPA may not be able to issue such guidelines for dams in the near future. Even assuming guidelines are available to permit-issuing authorities, the workload will be enormous. EPA and the State would receive, and evaluate for completeness, applica-

tions for between fifty thousand and two million dams. Each dam would then be assigned effluent limitations based on the applicable guidelines. The permit-issuing authority would then evaluate those limits to see if they would provide for the attainment of water quality standards. If not, more stringent limits would have to be developed on a case-by-case basis. After this technical analysis, EPA or the State would begin the process for issuance of the permit.

These estimates do not take into account the resources necessary to conduct the water quality surveys to determine whether each dam requires a permit. Neither do they take into account the time needed for evidentiary hearings. Owners and operators of dams (particularly in the West, where water rights have fundamental importance) may strongly resist any regulatory efforts perceived as affecting dam operations, and thus affecting downstream water flow. These owners and operators would thus be likely to request evidentiary hearings more frequently than normal. Evidentiary hearings can add one work-year to each permit challenged. EPA and the States are simply unequipped to assume such an immense burden.

One of the remedies suggested by the District Court decision was the use of area-wide or general permits which would cover many of these dam facilities. There are at least two potential problems which would hinder the issuance of general permits.

First, in order to issue a general permit, all of the potential permittees to be covered by a general permit must be similar in nature with similar pollutant discharges. Since the dam-created problems will vary for each dam site, general permits would be very difficult to apply. Before a general permit can be considered it will be necessary to identify all the various dam-created problems that could occur, and the potential solutions for these problems. Frequently these solutions would require case-by-case determinations of necessary changes in operation of the dam, such as water release at different water levels from the dams to control temperature and dissolved oxygen content or use of spillway deflectors to avoid supersaturation. Since the problems attributtable to the dam or the reservoir, as well as the solutions, would vary depending upon on the dam site, a general permit containing conditions and requirements for all dams to be covered by the general permit might well not be feasible.

An additional administrative problem which exists for the use of general permits is that none of the thirty three approved NPDES States has yet been approved to issue general NPDES permits. Many of these States may need to modify their State regulations and EPA-State agreements to authorize the State to issue general permits. General permits cannot be issued in approved States until these States make the

appropriate modifications and are then authorized to issue general permits.

The process of gathering and evaluating data on dams would be more complex and difficult than developing typical industrial effluent guidelines. Dams have to be examined in terms of traditional effluent limitations factors such as age, size, type or facility, and the other factors listed above. In addition, such factors as location, climate, mode of operation (flood control, power generation etc.), hydrodynamics of impounded water, biological activity in the reservoir and surrounding stream use need to be considered not only in determining control measures but even in deciding whether the dam or reservoir causes "pollution" and is therefore subject to regulation under the Court's order. For example, the appearance of low dissolved oxygen conditions depends significantly on the presence of oxygen-demanding substances in the reservoir. The size and type of dam does not determine what the loadings of oxygen-demanding substances will be in the reservoir. The land use patterns upstream from the dam and the biological activity in those upstream water are among the critical factors determining such loadings.

Moreover, dams play a crucial role in allocation of water rights under State law, particularly in Western states, and in maintenance of stream flow (including water quality enhancement) through controlled releases. Any effluent

limitation guideline would have to be developed with exceeding care to take into account these complex factors.

It is not clear that it will be possible to develop category-wide effluent limitations or standards for dams. There is some evidence that the environmental problems which are caused by dams are so site-specific that uniform national requirements cannot be developed. If a dam causes environmental problems at one location, structurally similar dams may pose either no problem or markedly different problems in different locations. Further technology to solve a problem in one dam may not work for another dam with similar problems. This disparity among structurally similar dams means that it will be difficult, perhaps impossible, for EPA to identify subcategories subject to uniform limits. This technique is the only means by which the Agency can establish effluent limits for categories of diverse sources. If it is unavailable, effluent limitations guidelines cannot be developed.

Even assuming it is possible to develop effluent limitations guidelines for dams, developing uniform national effluent limitations where there are frequently overriding site specific problems has never been attempted before in the Effluent Guidelines Program.

The judgment gives very little consideration to the practical problems and relative benefits of permitting effort. Available information and experience indicates that the controllable adverse water quality impacts from the operation of existing

dams are extremely small compared with other tpes of impacts, particularly those from the discharge of municipal and industrial wastewaters. Therefore, the significant amount of resources which would be required for permitting dams would be diverted from the already limited resources devoted to the existing permit programs for municipal and industrial wastewater dischargers. If implemented, the net result of this judgment could be that resources would be diverted from areas of high productivity of environmental benefits to areas of low environmental benefits.

Water quality effects from the construction of new dams are already adequately evaluated and regulated under existing environmental programs, such as the Section 401 certification program and Section 404 "Dredge and Fill" permit program administered by the Corps of Engineers.

The section 401 certification process is used to consider and integrate water quality impacts in regard to water resource issues. Also, in evaluating this process, States indicated that water quality standards are used as a basis for regulation and that corrective action can be compelled where the standards are or would be violated.

In addition to specific State authorities, a number of States reported that they have an active section 401 certification program under the authority of Clean Water Act, which deals with all major dams. For example, in Colorado,

the coordination occurs through the section 404 permit process, the section 401 certification reviews, and the Environmental Impact Statement reviews. This is also done in Louisiana, Massachusetts, Idaho, Montana, Maine, North Carolina, Oklahoma, Oregon, South Dakota, Virginia, and Washington.

Section 401 allows for the balancing of water resources uses and water quality impacts unlike section 402 which would require a preeminence of water quality concerns, potentially resulting in a significant distortion of the initial water resources purposes.

Conclusion

Based on the above considerations, in ICWP's view, the regulatory approach called for by the National Wildlife Federation v. Gorsuch decision is neither the most effective nor the most efficient method of addressing water quality problems related to reservoirs. A more appropriate vehicle, utilizing State dam permitting coupled with state best management practices and technical assistance program, should be endorsed by Congress.

This, Mr. Chairman, concludes my statement on behalf of the Interstate Conference on Water Problems. Mr. Silbermann and I will be pleased to attempt to respond to any questions you or the Members of the Subcommittee may have.

20-955 O—84——145

Mr. ROE. Now, let's take the Izaak Walton League, Ms. Bloch and Mr. Weiss.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

THE IZAAK WALTON LEAGUE OF AMERICA
INCORPORATED

TESTIMONY OF ETHYLE BLOCH,

PRESIDENT, INDIANA DIVISION,

IZAAK WALTON LEAGUE OF AMERICA

BEFORE THE

SUBCOMMITTEE ON WATER RESOURCES

SUBCOMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

ON THE CLEAN WATER ACT

NOVEMBER 9, 1983

I AM ETHYLE R. BLOCH, PRESIDENT OF THE INDIANA DIVISION OF THE IZAAK WALTON LEAGUE OF AMERICA. I LIVE IN FORT WAYNE, INDIANA, AN OFFICIAL 1983 "ALL AMERICAN CITY" THAT SUFFERED A DRASTIC FLOOD IN 1982. I HAVE LIVED THERE FOR OVER 35 YEARS, AND I HAVE BEEN INTERESTED IN AND PARTICIPATED IN CLEAN WATER ISSUES SINCE THE 1960'S. AS A MEMBER OF THE IZAAK WALTON LEAGUE AND THE LEAGUE OF WOMEN VOTERS, I FOCUSED ON POLLUTION PROBLEMS IN THE MAUMEE RIVER BASIN.

THE CLEAN WATER ACT IS A VITAL, NECESSARY LAW TO CLEAN UP OUR NATION'S POLLUTED STREAMS. IT PLACES THE FEDERAL GOVERNMENT IN THE DRIVER'S SEAT TO RESTORE AND MAINTAIN THE CHEMICAL, PHYSICAL AND BIOLOGICAL INTEGRITY OF THE NATION'S WATERS BY ESTABLISHING A NATIONWIDE CLEAN WATER PROGRAM. FEDERAL AUTHORITY PROVIDES THE STATE AND LOCAL GOVERNMENTS WITH THE PUSH NEEDED TO RUN GOOD PROGRAMS. THE CLEAN WATER ACT ESTABLISHED 1983 AS THE YEAR TO MEET THE FISHABLE, SWIMMABLE GOAL. AFTER A LOT OF HARD WORK, WE HAVE PARTIALLY SUCCEEDED IN MEETING THIS GOAL AND RESTORING OUR WATERS BY REMOVING FROM THEM MUCH OF THE SOAP SUDS, DEAD ANIMALS AND FEED LOT WASTES, GREASES, OILS, GARBAGE, ETC. -- THE POLLUTION WE CAN SEE.

THE REMAINDER OF THE TASK IS THE TOUGHEST NUT TO CRACK. WE HAVE JUST BEGUN TO CONTROL THE WATER CONTAMINANTS THAT WE CAN NOT SEE -- THOSE TOXIC CHEMICALS THAT TOO OFTEN ARE DISCHARGED INTO OUR STREAMS FROM INDUSTRIAL PIPES, MUNICIPAL TREATMENT PLANTS, AND RUNOFF FROM FARMS, CITY STREETS, AND CONSTRUCTION SITES. CANCER

OR BIRTH DEFECT-CAUSING CHEMICALS LIKE CADMIUM, LEAD, PCB'S OR MERCURY COME FROM ALL OF THESE SOURCES. THESE TOXICS NEVER DISAPPEAR; THEY CAN MINGLE TO FORM EVEN MORE HAZARDOUS CONTAMINANTS; OR THEY CAN SETTLE INTO AND REMAIN IN THE WATER, BOTTOM SEDIMENTS, OR SLUDGE. SCIENTISTS TEDIOUSLY STUDY THESE CHEMICALS AND ARE DISCOVERING THEIR EVIL EFFECTS ON FISH, WILDLIFE AND HUMANS.

IN 1983, CONGRESS FACES A FUNDAMENTAL QUESTION. DO YOU REAUTHORIZE AND STRENGTHEN THIS VITAL CLEAN WATER ACT? OR DO YOU --- IN EFFECT --- RELAX CONTROLS BY BUDGET CUTTING AND BY PUSHING THIS TASK ONTO STATE AND LOCAL GOVERNMENTS? THE WATER QUALITY RENEWAL ACT, H.R. 3282, SPONSORED BY REPRESENTATIVE JAMES HOWARD, REAFFIRMS THE GOALS OF THE ACT ESTABLISHED BY CONGRESS IN 1972. THE INDIANA DIVISION OF THE IZAAK WALTON LEAGUE OF AMERICA URGES THIS COMMITTEE TO PASS H.R. 3282, RATHER THAN UNDO PAST ACHIEVEMENTS OF ELIMINATING VISIBLE POLLUTANTS AND IGNORING THE TASK OF COMBATTING THE INVISIBLE ONES, AS SOME OPPONENTS OF CLEAN WATER WOULD LIKE.

TO ILLUSTRATE OUR CONCERNS, I WOULD LIKE TO DISCUSS POLLUTION PROBLEMS IN FORT WAYNE AND INDIANA. THESE PROBLEMS OCCUR ELSEWHERE IN THE UNITED STATES AS WELL.

NPDES PERMITS HAVE BEEN ISSUED BY THE STATE TO ABOUT 10 OF THE OVER 80 INDUSTRIES WITHIN THE URBAN AREA OF MY COUNTY. HOWEVER, THE SEWAGE TREATMENT PLANT RECEIVES EFFLUENT DISHCARGED

FROM ABOUT 70 INDUSTRIES. THESE FIGURES ARE ESTIMATES BECAUSE THE FORT WAYNE MUNICIPAL GOVERNMENT REFUSES TO PROVIDE BONA FIDE STATISTICS AND FACTS TO THE PUBLIC.

THE PRINCPLE INDUSTRIES IN MY COMMUNITY ARE STEEL AND MAGNET WIRE MANUFACTURING, ELECTRO-PLATING AUTOPARTS, AND SMALL MOTORS AND TRAILER MANUFACTURING. THESE INDUSTRIES DISCHARGE HEAVY METALS AND ORGANIC TOXICS INTO THE FORT WAYNE PUBLICLY OWNED TREATMENT WORKS (POTW) WHICH END UP IN THE 7,000 TONS OF SEWAGE SLUDGE GENERATED ANNUALLY AT THE PLANT. THE SLUDGE IS PLACED IN A ONE SQUARE MILE AREA OF LAGOONS SITUATED IN THE MAUMEE RIVER FLOOD PLAIN, WHERE IT STAYS FOR ABOUT 4 YEARS. EVERY TIME FORT WAYNE SUFFERS A BIG FLOOD, THE LAGOONS ARE INUNDATED WITH WATER. THE TOXIC-LADEN SLUDGE WASHES INTO THE MAUMEE RIVER, CONTAMINATING THE WATER SUPPLY DOWNSTREAM, WHICH FLOWS INTO THE WESTERN END OF LAKE ERIE. IN 1982, AS PRESIDENT REAGAN WAS LOADING SANDBAGS IN FORT WAYNE TO SAVE THE PEOPLE LIVING BEHIND THE PEMBERTON DIKE, THE POISONS FROM THE SLUDGE FLOWED INTO, ON AND AROUND THEM DOWNSTREAM. AFTER FOUR YEARS, MOST OF THE SLUDGE IS GIVEN TO CITIZENS FOR LAND APPLICATION WITH ONLY A LITTLE YELLOW CARD (SEE ATTACHMENT #1.) TO INFORM THEM OF ITS CHEMICAL CONTENT. THE CARD ONLY INFORMS THE READER OF THE RESTRICTIONS ON APPLICATIONS OF THIS SLUDGE. HOWEVER, THIS IS JUST A WARNING, NOT A REQUIREMENT.

FORT WAYNE HAS RECEIVED OVER $86 MILLION IN FEDERAL FUNDS SINCE 1972 TO EXPAND ITS SEWAGE PLANT, YET THE CITY DOES NOT REQUIRE ITS INDUSTRIAL CUSTOMERS TO PRETREAT THEIR TOXIC

DISCHARGES INTO THE PLANT. EFFLUENT ENTERING THE PLANT IS MONITORED FOR FLOW AND A SURCHARGE IS PAID ON EXCESS BIOLOGICAL OXYGEN DEMAND (BOD), CHEMICAL OXYGEN DEMAND (COD), SUSPENDED SOLIDS AND PHOSPHORUS. THE POTW SUPERINTENDENT DECIDES ON AN INDIVIDUAL CONTRACT BASIS WHETHER TO REQUIRE THE REMOVAL OF TOXICS FROM INDUSTRIAL EFFLUENT DISCHARGED INTO THE PLANT. ACCORDING TO THE CURRENT SUPERINTENDENT, THE ONLY RESTRICTION ON ACCEPTING THESE WASTES IS TO PREVENT A "SLUG" OF TOXICS FROM KNOCKING OUT THE MICRO-ORGANISMS IN THE POTW'S BIOLOGICAL TREATMENT SYSTEM. HOW OFTEN THESE SLUGS OCCUR REMAINS A SECRET. FORT WAYNE DOES NOT REVIEW OR MONITOR THE PASS-THROUGH OF METALS OR ORGANICS THROUGH THE POTW AND INTO THE MAUMEE RIVER. THERE IS ALSO LITTLE CONCERN ABOUT THE CONCENTRATION OF TOXICS IN THE POTW'S SLUDGE. THE POTW SUPERINTENDENT ADJUSTS THE RATE OF LAND APPLICATION OF SLUDGE, WHICH IS BASED ON A TONS PER ACRE RATE, AS REQUIRED BY STATE GUIDELINES. ALTHOUGH THE CITY WAS VAGUE ABOUT TESTS CONDUCTED ON THE TREATED EFFLUENT, IT SEEMS THAT ONLY RIVER TESTS ARE DONE, THERE ARE NO EFFLUENT TESTS. THESE THRICE WEEKLY RIVER TESTS PROVIDE ALMOST NO INFORMAITON ABOUT THE PASS-THROUGH OF TOXICS THROUGH THE SEWAGE TREATMENT PLANT.

IN ADDITION, THE CITY'S NPDES PERMIT FOR ITS POTW HAS PARAMETERS ONLY FOR BOD, SUSPENDED SOLIDS, PHOSPHOROUS, AND PH. OVERALL, THERE ARE NO CHECKPOINTS TO MEASURE THE SUCCESS OR FAILURE OF INDUSTRIAL PRETREATMENT EFFORTS. INDIANA DOES NOT REQUIRE ADEQUATE MONITORING OF PRETREATMENT PROGRAMS.

THE FORT WAYNE SEWAGE PLANT IS BLYTHELY GLIDING ALONG. BECAUSE THERE ARE NO NATIONAL PRETREATMENT REQUIREMENTS IN PLACE, DECISION MAKING, REGULATIONS, AND ENFORCEMENT ARE BASED STRICTLY ON WHAT THE TRAFFIC WILL BEAR. PRETREATMENT DECISIONS ARE MADE BASED ON WHAT NEW INDUSTRIES CAN BE LURED BY THE CHAMBER OF COMMERCE AND THE MAYOR'S ECONOMIC DEVELOPMENT COMMISSION, COMPLAINTS BY OLD INDUSTRIAL CUSTOMERS WHO STUBBORNLY REFUSE TO CHANGE THEIR WAYS, AND THE DESIRE TO KEEP THE STATUS QUO WITH THE SIMPLE REQUIREMENTS OF THEIR DISCHARGE PERMIT.

INDUSTRIES WILL FIND IT VERY COST EFFECTIVE TO BE A MUNICPAL CUSTOMER IF NATIONAL CATEGORICAL AND GENERAL PRETREATMENT STANDARDS ARE UNDERCUT BY A "WAIVER" OR OPT-OUT FOR SOME CITIES; IT IS LOGICAL THAT INDUSTRIES WILL GO "POLLUTION SHOPPING". IT IS HAPPENING. JUST WITHIN THE LAST YEAR, FORT WAYNE'S UTILITY CONSULTANT URGED THE CITY COUNCIL TO PASS AMENDMENTS TO THE SEWAGE ORDINANCE TO INCREASE THE CONCENTRATION LIMITS IN THE DISCHARGE OF 8 HEAVY METALS INTO THE SEWAGE PLANT TO ATTRACT INDUSTRY TO FORT WAYNE. THESE CHEMICALS ARE CADMIUM, CYANIDE, TOTAL CHROMIUM, COPPER, LEAD, MANGANESE, PHENOL AND SILVER. THIS CHANGE WAS DESIGNED TO BENEFIT INDUSTRY BY REDUCING TREATMENT COSTS BY ABOUT $45,000 ANNUALLY. ANOTHER REASON FOR THE CHANGES WAS THAT EPA WAS EXPECTED TO RELAX STANDARDS ANYWAY.

INDIANA'S PRETREATMENT REGULATIONS, REQUIRED BY MAY, 1982, ARE NOT YET IN EFFECT. CATEGORICAL STANDARDS ARE NOT ENFORCED BECAUSE EPA IS JUST NOW ISSUING THE STANDARDS. IN FORT WAYNE,

INDIANA, ECONOMICS, AND NOT ENVIRONMENTAL PROTECTION, IS THE DECIDING FACTOR IN PRETREATMENT STANDARDS AND PROGRAMS.

INDIANA'S PRETREATMENT REGULATIONS ALLOW VARIANCES IF AN INDUSTRY CLAIMS A DIFFERENT DISCHARGE FACTOR THAN ITS NATIONAL CATAGORICAL STANDARD. ALSO, POTW PRETREATMENT REGULATIONS CONTAIN EXEMPTIONS FOR SMALL COMMUNITIES FROM ESTABLISHING A PRETREATMENT PROGRAM. THIS IS A LOOPHOLE FOR SMALLER COMMUNITIES OF LESS THAN 5 MGD HYDRAULIC CAPACITY.

AFTER LISTENING TO THIS LONG LIST OF PROBELMS WITH FORT WAYNE'S PRETREATMENT AND SEWAGE TREATMENT SYSTEMS, ONE COULD ARGUE THAT A COMMUNITY LIKE FORT WAYNE WOULD BE UNLIKELY TO RECEIVE A WAIVER FROM THE NATIONAL PRETREATMENT PROGRAM, AND BE ALLOWED TO OPERATE ITS OWN PROGRAM. OUR CONCERN IS THAT FORT WAYNE COULD, IN ANY EVENT, APPLY FOR AN OPT-OUT, THEREBY TRIGGERING DELAYS IN THE IMPLEMENTATION OF THE NATIONAL CATEGORICAL PRETREATMENT STANDARDS FOR ITS INDIRECT DISHCARGERS. AS THIS SUBCOMMITTEE KNOWS, WHEN CONGRESS CREATED OTHER WAIVER PROGRAMS IN THE CLEAN WATER ACT -- LIKE THE 301 (H) PROGRAM FOR THE DISCHARGE OF UNTREATED SEWAGE INTO THE OCEAN -- MANY COMMUNITIES THAT WERE NOT "SUPPOSED TO" RECEIVE WAIVERS APPLIED ANYWAY.

THIS HAS LED TO A BACK LOG OF APPLICATIONS AT EPA, AND LENGTHY DELAYS IN MEETING THE REQUIREMENTS OF THE ACT BY APPLICANTS. IN ADDITION, EVEN IF FORT WAYNE IS DENIED A PRETREATMENT WAIVER, THE IMPLEMENTATION OF NATIONAL PRETREATMENT

STANDARDS COULD STILL BE DELAYED FOR YEARS IF THE CITY CHALLENGES THAT DECISION IN COURT. AND, GIVEN FORT WAYNE'S RELUCTANCE TO RUN A SOUND PROGRAM NOW, THIS IS A LIKELY POSSIBILITY. A PRETREATMENT OPT-OUT PROGRAM WOULD MEAN YEARS OF DELAY IN REDUCING THE THOUSANDS OF POUNDS OF TOXICS DISHCARGED ANNUALLY INTO OUR SEWAGE TREATMENT SYSTEM. MANY OF THESE TOXICS WILL EVENTUALLY CONTAMINATE THE MAUMEE RIVER EITHER BY PASSING THROUGH THE PLANT UNTREATED, OR BY LEACHING OUT OF THE CONTAMINATED MUNICIPAL SLUDGE DURING THE NEXT BIG FLOOD.

A PRETREATMENT OPT-OUT PROGRAM -- NO MATTER HOW TOUGH -- HAS INHERENT PITFALLS FOR THE CONTROL OF TOXICS IN INDIANA. MUNICIPAL SEWAGE TREATMENT PLANTS IN HAMMOND, EAST CHICAGO, MICHIGAN CITY, AND GARY HAVE ALL SUFFERED FROM SERIOUS PROBLEMS, AND HAVE VIOLATED THEIR DISHCARGE PERMITS FOR CONVENTIONAL POLLUTANTS. THE STATE HAS ALMOST NO NUMERICAL CRITERIA FOR TOXICS, WHICH ARE ESSENTIAL TO DETERMINE WHETHER THE DISCHARGES FROM POTW'S RUNNING THEIR OWN PRETREATMENT PROGRAM ARE HARMING WATER QUALITY. THE INDIANA WATER POLLUTION CONTROL DIVISION IS VERY UNDERSTAFFED, UNDERPAID AND OVERWORKED. A PRETREATMENT OPT-OUT WOULD STRAIN THESE ALREADY TIGHT RESOURCES EVEN FURTHER, AND WOULD TAKE STAFF PEOPLE AWAY FROM MONITORING AND ENFORCEMENT OF INDUSTRIAL POLLUTERS. EVEN NOW, INDIANA DOES LITTLE ON-SITE SAMPLING FOR WATER QUALITY, AND PRACTICALLY NO SAMPLING FOR TOXICS.

MY FELLOW HOOSIER, WILLIAM RUCKELSHAUS, NOTED WHEN HE TESTIFIED ON CLEAN WATER IN THE SENATE THIS YEAR THAT "ANY

(PRETREATMENT) WAIVER SYSTEM THAT WE WERE TO COME UP WITH ... WOULD BE RESOURCE INTENSIVE....IT WOULD CAUSE MORE RESOURCES TO BE DEVOTED TO IT AT THE STATE LEVEL AS WELL." SO, ALTHOUGH THERE MAY BE COMMUNITIES IN INDIANA THAT OPERATE BETTER SEWAGE TREATMENT PROGRAMS THAN FORT WAYNE, ALLOWING SUCH COMMUNITIES TO OPT- OUT OF THE NATIONAL PRETREATMENT PROGRAM WOULD ULTIMATELY HARM INDIANA'S ENVIRONMENT. A BETTER USE OF EPA AND INDIANA'S LIMITED RESOURCES IS TO ISSUE THE REMAINDER OF THE NATIONAL CATEGORICAL PRETREATMENT STANDARDS, AND THEN VIGOROUSLY ENFORCE THEM.

TOXIC HOT SPOTS: WE'VE GOT A BAD ONE

H.R. 3282 WOULD ALSO REQUIRE EPA TO IDENTIFY WATERS THAT WILL BE HEAVILY POLLUTED WITH TOXICS EVEN AFTER ALL OF THE ACT'S EXISTING CONTROLS ARE IN PLACE. ONCE EPA HAS IDENTIFIED THESE "TOXIC HOT SPOTS", IT MUST DEVELOP AND ENFORCE ADDITIONAL CONTROLS ON THE DISCHARGE OF THE PROBLEM TOXICS NEEDED TO ACHIEVE WATER CLEAN ENOUGH FOR FISHING AND SWIMMING.

WE CAN SAVE EPA THE TROUBLE OF COMING TO INDIANA TO IDENTIFY HOT SPOTS--WE ALREADY KNOW WHERE OURS ARE. THE GRAND CALUMET RIVER IS ONE OF THE MOST POLLUTED BODIES OF WATER IN THE STATE. STEEL PLANTS AND OTHER INDUSTRIES DISCHARGE LARGE AMOUNTS OF CYANIDE, LEAD AND AT LEAST FIVE OTHER HEAVY METALS INTO THE RIVER, WHICH FLOWS DIRECTLY INTO LAKE MICHIGAN. TOXICS FROM THE GRAND CALUMET RIVER HAVE POISONED FISH, MAKING MANY IMPORTANT SPECIES SUCH AS TROUT UNFIT FOR HUMAN CONSUMPTION. ADDITIONALLY, LAKE MICHIGAN IS

THE SOURCE OF DRINKING WATER FOR 10 MILLION PEOPLE. ADDITIONAL CONTROLS ON TOXICS WILL BE NEEDED IF WE ARE TO MAKE THE GRAND CALUMET RIVER SAFE FOR FISHING AND SWIMMING ONCE AGAIN.

THE SEDIMENT IN THE INDIANA HARBOR IS CONTAMINATED BY THE ACCUMULATION OF TOXICS FROM YEARS OF DISCHARGES BY INDUSTRY AND POTW'S INTO THE GRAND CALUUMET RIVER. THESE TOXICS HAVE SO FILLED IN THE HARBOR THAT SHIPS CAN SCARCELY NAVIGATE THROUGH IT. BECAUSE THE SILT HAS A HIGH CONTENT OF POISONS IN IT, IT IS COSTLY AND DIFFICULT TO SAFELY DISPOSE OF IT WHEN THE HARBOR IS DREDGED. UNLESS THE TOXIC INDUSTRIAL DISCHARGES INTO THE GRAND CALUMET ARE DRASTICALLY REDUCED, INDIANA HARBOR WILL HAVE TO BE DREDGED AGAIN, ONCE AGAIN CREATING THE PROBLEM OF SAFE DISPOSAL OF THE CONTAMINATED DREDGE SPOIL.

SECTION 7 OF H.R. 3282 WILL MAKE THIS OCCURENCE FAR LESS LIKELY. HOWEVER, IT IS UNCLEAR IF SECTION 7 OF H.R. 3282 WOULD APPLY TO THE GRAND CALUMET RIVER BECAUSE IT IS NOT PRESENTLY CLASSIFIED FOR FISHING OR SWIMMING. H.R. 3282 SHOULD BE CLARIFIED SO THAT WATERS LIKE THE GRAND CALUMET CAN ALSO FALL UNDER THE TOXIC HOT SPOTS PROVISION, AND EPA CAN THEN REQUIRE THE ADDITIONAL CONTROLS ON INDUSTRIAL DISCHARGERS TO REDUCE THE DISCHARGE OF TOXICS TO A SAFE LEVEL.

WATER QUALITY STANDARDS: INDIANA'S ARE WEAK

WE STRONGLY SUPPORT SECTION 6 OF H.R. 3282 BECAUSE IT WOULD

PREVENT STATES FROM WEAKENING WATER QUALITY STANDARDS SIMPLY TO AVOID ADDRESSING MUNICIPAL OR INDUSTRIAL WASTE PROBLEMS. EPA HAS RECENTLY PROPOSED FINAL WATER QUALITY REGULATIONS WHICH INCLUDE STRICTER RULES ON DOWNGRADING POLLUTED STREAMS AND DEGRADING HIGH QUALITY WATERS. THESE RULES SHOULD BE INCORPORATED INTO THE CLEAN WATER ACT ITSELF TO PREVENT EXCESSIVE DOWNGRADING.

FOR INSTANCE, INDIANA RECENTLY DOWNGRADED 18 STREAM SEGMENTS UNDER THE EXISTING EPA RULES, AND INDICATED THAT UP TO 50% OF ALL STREAM TRIBUTARIES ARE ELIGIBLE FOR A SIMILAR "LIMITED USE" DESIGNATION. THESE WATERS ARE LOW FLOW HEADWATERS, WITH A LOW ASSIMILATIVE CAPACITY FOR POLLUTION, AND ARE VERY SENSITIVE TO DEGRADATION. INDIANA JUSTISFIED THIS DOWNGRADING BECAUSE IT DECIDED THAT THESE WATERS HAD "POOR PHYSICAL CHARACTERISTICS" OR WERE IN AREAS "WHICH ARE INACCESSABLE TO MOST OTHER FISH DURING A SIGNIFICANT PORTION OF THE YEAR".

THIS DESIGNATION SYSTEM IS COMPLEX AND SUBJECT TO WIDE INTERPRETATION. IT HAS TOO MANY VARIABLES WHICH CAN BE EASILY MANIPULATED, AND COULD RESULT IN LENGTHY CONFUSION UPON ENFORCEMENT. IT CREATES VARIANCES FOR DISCHARGERS, AND PUTS A CLASS OF DEGRADED WATERS INTO THE REGULATION WHICH IS CONTRARY TO THE INTENT AND SPIRIT OF THE LAW. THE IWLA IS UNWILLING TO CONDEMN ANY WATERS TO SUCH A CLASSIFICATION, ESPECIALLY IF SUCH WATERS AFFECT POTABLE SUPPLIES, AQUATIC LIFE SEGMENTS, RECREATIONAL USES OR IMPAIRS THE DESIGNATED USE OF THE ADJOINING STREAM. ANYONE WISHING TO HAVE A STREAM OR WATERWAY UNDER THIS

THIS LIMITED USE DESIGNATION ONLY HAS TO SUBMIT A WRITTEN RECOMMENDATION TO THE STREAM POLLUTION CONTROL BOARD STATING THE RATIONALE FOR SUCH A DESIGNATION. INDUSTRY IS NOW MOVING OUT OF THE URBAN AREAS AND INTO RURAL AREAS TO EVADE CLEAN UP REGULATIONS BY TAKING ADVANTAGE OF THIS LIMITED-USE DESIGNATION .

NON-POINT SOURCE POLLUTION: A PLAGUE ON INDIANA'S WATERS

NON-POINT SOURCE POLLUTION HAS BEEN DESCRIBED AS "A CORNUCOPIA OF CRUD". RUNOFF FROM CITY STREETS, FARMS, AND CONSTRUCTION SITES IN INDIANA IS GIGANTIC -- 82,294,000 TONS YEARLY, ACCORDING TO THE U.S. SOIL CONSERVATION SERVICE'S (SCS) INVENTORY OF INDIANA (SEE ATTACHMENT 2.). THE MOST PERSISTENT PROBLEMS IN INDIANA ARE IN THE ST. JOSEPH, MAUMEE AND WHITE RIVER BASINS. INDIANA STREAMS ARE CHOCOLATE-BROWN ALL YEAR LONG FROM SOIL EROSION. THE SILT CONTAINS HERBICIDES AND PESTICIDES WHICH ARE HEAVILY USED IN THIS CORN AND SOY BEAN PRODUCING STATE. GREASES, OILS, SALT AND LEAD FROM AUTOMOBILE EXHAUST, DISCHARGES FROM SEPTIC SYSTEMS, SEWAGE PIPE SEEPAGES AND BARNYARD RUNOFF CONTRIBUTE GREATLY TO THE PROBLEM. RUNOFF FROM BUILDING, SHOPPING MALL, AND, HIGHWAY CONSTRUCTION SITES ADDS TO THE PROBLEM. EFFORTS TO CONTROL FLOODS BY BUILDING DIKES AND FILLING IN FLOOD PLAIN AREAS --- SUCH AS FORT WAYNE'S FUTILE ATTEMPT TO CONTROL THE FLOW OF ITS THREE RIVERS --- SPEEDS THE FLOW OF RUNOFF POLLUTION.

SECTION 208 OF THE ACT WAS DESIGNED TO PLAN CONTROLS ON RUNOFF POLLUTION. THIS PROGRAM HAS BEEN ONE BIG FIZZLE IN

INDIANA. ONLY TWO REGIONS, CENTRAL AND NORTHWESTERN INDIANA, ACCOMPLISHED CONSTRUCTIVE PROGRAMS. THE ELIMINATION OF FEDERAL FUNDING FOR 208 HAS PUT THSE PLANS IN LIMBO; OTHER PLANS HAVE BEEN FORGOTTEN. IN MY AREA, THE 208 PLAN NEVER MADE IT TO FIRST BASE BECAUSE AN OBSTINATE GROUP OF FARMERS AND OTHER SPECIAL INTERESTS FORMED AN ORGANIZATION CALLED THE "COMMITTEE TO RESTORE THE CONSTITUTION" TO DENY ANY FEDERAL OR STATE AID FOR THIS PROGRAM. CLEARLY, SUCH VOLUNTARY, NONMANDATORY PROGRAMS LIKE SECTION 208 ARE WOEFULLY INADEQUATE TO ADDRESS THIS GROWING PROBLEM.

THE SOLUTION TO THIS PROBLEM IS THE DEVELOPMENT AND IMPLEMENTATION OF "BEST MANAGEMENT PRACTICES" (BMP) TO REDUCE RUNOFF. BMP'S INCLUDE SUCH COST EFFECTIVE TECHNIQUES AS SURROUNDING CONSTRUCTION SITES WITH HAY BALES TO TRAP RUNOFF SEDIMENTS, OR EMPLOYING CONTOUR PLOWING ON EASILY ERODIBLE SOIL. STATES SHOULD BE REQUIRED TO IDENTIFY STREAMS WHERE NON-POINT POLLUTION IS A PROBLEM, AND TO IDENTIFY THE SOURCES OF THE RUNOFF. THESE SOURCES SHOULD BE REQURIED TO IMPLEMENT APPROPRIATE, ECONOMICALLY ACHIEVEABLE BMP'S ON A FIRM TIME SCHEDULE. TECHNICAL ASSISTANCE AND SOME LIMITED FINANCIAL AID SHOULD BE AVAILABLE. THE STATES SHOULD BE HELD RESPONSIBLE FOR REMOVING THIS "CRUD".

WE SUPPORT REPRESENTATIVE OBERSTAR'S BILL, H.R. 4037, TO CONTROL NON-POINT SOURCE POLLUTION, BUT WE BELIEVE IT SHOULD BE TOUGHENED TO ENSURE THAT THE SOURCES OF RUNOFF POLLUTION ARE REQUIRED TO USE BMP'S.

SEWAGE TREATMENT: MORE MONEY NEEDED

WE SUPPORT SECTION 3 OF H.R. 3282 WHICH WOULD PROVIDE BADLY NEEDED ADDITIONAL FUNDS TO BUILD SEWAGE TREATMENT PLANTS. IN INDIANA, WE HAVE UNMET SEWAGE TREATMENT NEEDS OF $3.7 BILLION, OF WHICH THE FEDERAL GOVERNMENT WILL PAY ONLY $486 MILLION BECAUSE MUCH OF OUR NEEDS ARE FOR COMBINED SEWER OVERFLOW PROBLEMS. H.R. 3282 WOULD AUTHORIZE AN ADDITIONAL $219 MILLION OVER THE NEXT 4 YEARS TO SPEED THE CONSTRUCTION AND OPERATION OF SEWAGE TREATMENT SYSTEMS. WITHOUT THESE SYSTEMS, INDIANA'S WATERS WILL CONTINUE TO BE PLAGUED BY MUNICIPAL SEWAGE PROBLEMS.

CONCLUSION: IT'S NOT TOO LATE

INDIANA'S WATER POLLUTION PROBLEMS ---THOUGH LARGE --- ARE NOT INSURMOUNTABLE. WITH A STRONG FEDERAL CLEAN WATER PROGRAM, WE CAN TACKLE OUR TOXIC HOT SPOTS, PRETREATMENT, AND NON-POINT SOURCE POLLUTION PROBLEMS. THE ENACATMENT OF H.R. 3282 WOULD HELP INDIANA --- AND THE NATION --- ADDRESS THESE PROBLEMS, AND ACHIEVE FISHABLE, SWIMABLE WATERS IN THE NEAR FUTURE.

ON THE OTHER HAND, PROPOSALS TO WEAKEN THE CLEAN WATER ACT, SUCH AS A PRETREATMENT OPT-OUT, WOULD BE AN UNMITIGATED DISASTER TO THE HEALTH AND SAFETY OF INDIANA'S ALREADY TROUBLED WATERS.

THE INDIANA DIVISION OF THE IZAAK WALTON LEAGUE URGES THIS SUBCOMMITTEE TO PASS H.R. 3282, AND TO PASS A STRENGTHENED VERSION OF H.R. 4037.

THANK YOU FOR THIS OPPORTUNITY TO TESTIFY TODAY. I AM HAPPY TO ANSWER ANY QUESTIONS.

ATTACHMENT #1

SLUDGE WARNING GIVEN ALONG WITH FORT WAYNE, INDIANA'S MUNICIPAL SLUDGE.

WARNING

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY HAS PLACED CERTAIN RESTRICTIONS UPON THE APPLICATION OF MUNICIPAL SEWAGE SLUDGE FOR LAND APPLICATION.(FEDERAL REGULATION 40 CFR).

THE SEWAGE SLUDGE YOU HAVE RECEIVED CONTAINS BOTH CADMIUM AND PCB'S AND SHOULD NOT BE USED ON DOMESTIC GARDENS WHERE LEAFY VEGETABLES OR ROOT CROPS ARE GROWN FOR HUMAN CONSUMPTION.

THIS SLUDGE MAY, HOWEVER, BE APPLIED TO LAWNS AND CROP LAND UNDER THE FOLLOWING GENERAL CONDITIONS:

1. land used for non-food chain crops such as corn, soy beans, hay, pasture, etc.
2. where soil pH is maintained to 6.5 or greater.
3. the sludge be applied prior to plowing except under certain conditions on pasture land.

FOR FURTHER INFORMATION REGARDING YOUR SPECIFIC USES, PLEASE CONTACT THE FORT WAYNE WATER POLLUTION CONTROL PLANT AT (219) 423-7261.

20-955 O—84——146

ATTACHMENT # 2

Comparison of Land Uses in Indiana (acres) (1)

	1958	1967	1977
Cropland	14,199,000 61.3%	13,881,000 60.0%	13,312,000 57.7%
Pastureland	1,857,000 8.0%	2,298,000 9.9%	2,148,000 9.3%
Forest Land	3,693,000 15.9%	3,761,000 16.2%	3,533,000 15.3%
Other(2)	1,916,000 8.3%	1,364,000 6.0%	1,251,000 5.4%
Urban & Built Up	1,189,000 5.2%	1,487,000 6.4%	2,364,000 10.2%
Federal Land	303,000 1.3%	340,000 1.5%	464,000 2.1%
Total Land	23,157,000	23,131,000	23,072,000

(1) Sources: Indiana Soil and Water Conservation Needs Inventories, 1958 & 1967, U.S.D.A., and the National Erosion Inventory, 1977 U.S.D.A. - SCS.

(2) Includes Small water areas of 87,000 acres for 1958 and 95,000 acres for 1967.

Facts about -

Indiana

Sheet & Rill Erosion
Conservation Needs
Prime Farm Land
Land Use

2308

The USDA Soil Conservation Service provides information and educational programs and assistance to all people without regard to race, age, sex, color, or national origin.

June - 1979

United States Department of Agriculture
Soil Conservation Service
Indianapolis, Indiana

United States Department of Agriculture
Soil Conservation Service
Indianapolis, Indiana

INDIANA
EROSION INVENTORY(1)

SUMMARY

LAND USE		EROSION RATES Sheet & Rill Erosion		CONSERVATION NEEDS		PRIME FARMLAND
	Acres	Tons Yearly	Tons Per Acre Per Year	Treatment Needed	Treatment Not Needed	Acres
				Acres		
Cropland	13,312,000	68,607,000	5.15	10,032,000	3,280,000	11,505,000
Pasture land	2,148,000	8,620,000	4.01	1,561,000	587,000	1,036,000
Forest land	3,533,000	5,067,000	1.43	2,783,000	750,000	1,093,000
Grazed	409,000			387,000	22,000	
Not Grazed	3,124,000			2,396,000	728,000	
Other land	1,090,000			413,000	677,000	519,000
TOTAL	20,083,000	82,294,000		14,789,000	5,294,000	14,153,000

(1) Data taken from the 1977 National Erosion Inventory completed by the U.S.D.A., Soil Conservation Service. The studies to date, provide state level accuracy for sheet and rill erosion.

CROPLAND EROSION

CROPLAND EROSION RATES BY LAND CAPABILITY CLASS

Land Capability Class	Slope Range (Percent)	Total Acres	Treatment Needed (Acres)	Sheet & Rill Erosion Rates*
I	0 - 2	992,000	507,000	3.73
II e	2 - 6	2,700,000	2,370,000	7.51
III e	6 - 12	670,000	551,000	10.93
IV e	12 - 18	548,000	491,000	20.57
VI e	18 - 25	96,000	82,000	28.84

*Average erosion rate in tons per acre per year for both treated and untreated cropland.

Mr. ROE. Please proced.

TESTIMONY OF ETHYLE BLOCH, PRESIDENT, INDIANA DIVISION, IZAAK WALTON LEAGUE; AND DANIEL WEISS, CONSERVATION ASSOCIATE

Mr. WEISS. Mr. Chairman, I don't have a statement; I'm just accompanying Ms. Bloch.

Mr. ROE. OK, we will defer to Ms. Bloch.

Ms. BLOCH. Thank you for this opportunity, Mr. Chairman, to be here today to testify on this all important Clean Water Act.

I am Ethyle Bloch, I am President of the Indiana Division, Izaak Walton League of America.

I live in Fort Wayne, Ind., the city that was so highly advertised as the "city of the 1982 flood" and named in 1983 an "All America City".

And I am here to bring you a local point of view, more or less, today.

The Clean Water Act is a vital, necessary law to clean up our Nation's polluted waters. And it places the Federal Government in the driver's seat to restore and maintain chemical, physical and biological integrity of the Nation's waters by establishing a nationwide clean water program.

The Federal authority provides the State and local governments with the push that is needed to run good programs.

The Clean Water Act established the year 1983 as the year to meet the fishable, swimmable goal. After a lot of hard work, we have partially succeeded in meeting that goal and restoring our waters by removing much of the soapsuds, dead animals, and feed lot wastes, greases, oils, and so forth—all these visible pollutants.

The remainder of the task is before us now, and that is the toughest nut to crack.

We have just begun to control the water contaminants that we cannot see—those toxic chemicals that too often are discharged into our streams from industrial pipes, municipal treatment plants, farm runoff, city streets, and construction site runoff.

These chemicals and toxics that come out of these pipes are deadly to human health. They never disappear. They commingle to form even more hazardous contaminants, or they settle into and remain in the water, in the bottom sediments or the sludge.

Scientists tediously study these chemicals and are discovering their evil effects on fish, wildlife, and humans.

Today, Congress faces a fundamental question:

Do you reauthorize and strengthen this vital Clean Water Act?

Or do you, in effect, relax the controls by budget cutting and by pushing this task onto State and local governments?

The Water Quality Renewal Act, H.R. 3282, sponsored by Representative James Howard, reaffirms the goals of the act which was established by Congress in 1972.

The Indiana division of the Izaak Walton League urges this committee to pass H.R. 3282, rather than undo the achievements of eliminating the visible pollutants and ignoring the task of combating the invisible ones.

To illustrate these concerns, I'd like to discuss with you pollution problems in Fort Wayne and Indiana. And I would like to say that I think a lot of these problems occur all over the United States.

About 10 of our 80 industries in Fort Wayne have been issued NPDES permits. However, the sewage treatment plant receives effluent discharged from about 70 of them.

And I can only give you these figures as estimates because the Fort Wayne municipal government refuses to provide bona fide statistics and facts to the public. We have been kept in the dark about these things over the years; and we still do not get the facts that we need.

These industries discharge heavy metals and organic toxics into the Fort Wayne publicly owned treatment plants, which end up in 7,000 tons of sewage sludge that is generated annually at the plant.

This sludge is placed in a square-mile area of lagoons situated in the Maumee River flood plain, where it dries for about a period of 4 years.

Every time Fort Wayne has a big flood, these lagoons are inundated with water. The toxic-laden sludge washes into the Maumee River, contaminating the water supply of cities downstream—Defiance, Ohio, is one of them—and flows into the western end of Lake Erie.

In 1982 when President Reagan was loading sandbags in Fort Wayne to save the people living behind the Pemberton Dike, the poisons from that sludge flowed into, on, and around them downstream. Poor little Lake Erie.

After 4 years' time most of this sludge is sent to the citizens for land application; they give away about 7,000 tons a year. All the warnings given to the citizens is a warning of what is in that sludge is on this little card [indicating] which is attached to my statement; sometimes they give it; sometimes they don't; but it doesn't tell you a heck of a lot.

Fort Wayne has received over $86 million in Federal funds since 1972 to expand its sewage plant; and, yet, the city does not require its industrial customers to pretreat their toxic discharges into the plant.

Effluent entering the plant is monitored for flow and a surcharge is paid on excess biological oxygen demand, chemical oxygen demand, suspended solids and phosphorus. The POTW superintendent decides on an individual contract basis whether to require the removal of toxics from this industrial effluent discharged into the plant, or to even take those wastes.

According to this superintendent, the only restriction on accepting these wastes is to prevent a "slug" of toxics from knocking out the micro-organisms in the POTW's biological treatment system.

Again, how often these "slugs" occur, we do not know, nor were we told.

Fort Wayne does not review or monitor the passthrough of metals or organics through the POTW and into the river. There is also little concern about the concentrations of toxics in the sludge.

The superintendent adjusts the rate of land application of the sludge which is based on a tons-per-acre ratio, as required by State guidelines.

It seems that they don't really make any effluent tests, but they do test the river water about three times a week.

In addition, the city's NPDES permit for its POTW has parameters only for BOD, COD, suspended solids, phosphorus and pH. There are no checkpoints to measure the success or the failure of industrial pretreatment efforts.

Indiana does not require adequate monitoring of pretreatment programs.

The Fort Wayne plant is blythely gliding along, because there are no national pretreatment requirements in place.

Decisionmaking, regulations, and enforcement are based strictly on what the traffic will bear. Pretreatment decisions are made based on what new industries can be lured by the chamber of commerce and the mayor's economic development commission, and by complaints of old industrial customers who stubbornly refuse to change their ways; and on the desire to keep the status quo with the simple requirements of their discharge permit.

Industries will find it very cost effective to be a municipal customer if national categorical and general pretreatment standards are undercut by a waiver or an opt-out for some cities.

It is logical that industries are "going to go "pollution-hunting"—"pollution-shopping," because it is happening.

Just within the last year Fort Wayne's utility consultant urged the city council to pass amendments to the sewage ordinance to increase the concentration limits in the discharge of eight heavy metals into the sewage plant to attract industries to Fort Wayne.

Cadmium and cyanide were two of those heavy metals.

And he bluntly stated that this change was designed to benefit industry by reducing treatment costs, for a mere $45,000 annual savings to the industries. The other reason he gave was that EPA was expected to relax those standards anyway.

Indiana's pretreatment regulations required by May 1982, are not yet in effect.

Categorical standards are not enforced because EPA is just issuing the standards.

In Fort Wayne, it seems that economics, and not environmental protection, is the deciding factor in pretreatment standards and programs.

These pretreatment regulations allow variances if an industry claims a different discharge factor than its national categorical standard. The pretreatment regulations contain exemptions for small communities from establishing a pretreatment program. This is a loophole for smaller communities of less than 5 million gallons daily hydraulic capacity.

After listening to this long list of problems with Fort Wayne's pretreatment and sewage treatment systems, one could argue that a community like Fort Wayne would be unlikely to receive a waiver from the National Pretreatment program, and be allowed to operate its own program.

Our concern is that Fort Wayne could, in any event, apply for an opt-out thereby triggering delays in the implementation of the national categorical pretreatment standards for its indirect dischargers.

As this subcommittee knows, when Congress created other waiver programs in the Clean Water Act, like the section 301(h) program for the discharge of untreated sewage into the ocean, many communities that were not "supposed to" receive waivers applied anyway.

This has led to a backlog of applications at EPA, and lengthy delays in meeting the requirements of the act by applicants.

A pretreatment opt-out program means years of delay in reducing the thousands of pounds of toxics discharged annually into our sewage treatment system—it would contaminate the Maumee River, either by passing through the plant untreated, or by leeching out of contaminated municipal sludge during the next big flood.

No matter how tough a pretreatment opt-out program is, it has inherent faults to the control of toxics in Indiana.

Municipal sewage treatment plants in Hammond, East Chicago, Michigan City, and Gary have all suffered from serious problems, and have violated their discharge permits for conventional pollutants.

Indiana has almost no numerical criteria for toxics, which are essential to determine whether the discharges from POTW's running their own pretreatment program are harming water quality.

The Indiana Water Pollution Control Division is very understaffed, underpaid and overworked.

A pretreatment opt-out would strain these already tight resources even further, and would take staff people away from enforcement and monitoring. Even now they do very little onsite sampling and almost nothing with the toxics; they don't have the time or the money.

My fellow Hoosier, William Ruckelshaus, noted when he testified on clean water in the Senate this year that "Any pretreatment waiver system that we were to come up with would be resource intensive, and it would cause more resources to be devoted to it at the State level as well."

So, although there may be communities in Indiana that operate better sewage treatment programs than Fort Wayne, allowing such communities to opt-out of the National Pretreatment program would ultimately harm Indiana's environment.

A better use of EPA and Indiana's limited resources is to issue the remaining national categorical pretreatment standards, and then vigorously enforce them.

To the topic of toxic hot spots—we have a bad one.

H.R. 3282 would require EPA to identify waters that will be heavily polluted with toxics even after all of the Act's existing controls are in place.

We can save EPA the trouble of coming to Indiana to identify those hot spots, because we know there they are:

The Grand Calumet River is a big one. It is one of the most polluted bodies of water in the State. Steel plants and many other industries up there discharge large amounts of cyanide, lead and at least five other heavy metals into the river, which flows directly into Lake Michigan; and Lake Michigan is a drinking-water supply source for 10 million people.

Toxics from the Grand Calumet River have poisoned fish and actually they've done away with several varieties of lake trout—they're all gone.

Additional controls on toxics will be needed if we are to make the Grand Calumet River safe for fishing and swimming once again.

However, it is unclear if section 7 of H.R. 3282 would apply to the Grand Calumet River because it is not presently classified for fishing or swimming.

H.R. 3282 should be clarified so that waters like the Grand Calumet can also fall under the toxic hot spots provision, and EPA can then require the additional controls on industrial dischargers to reduce the discharge of toxics to a safe level.

We strongly support section 6 of H.R. 3282 because it would prevent States from weakening water quality standards simply to avoid addressing municipal or industrial waste problems.

For instance, Indiana recently downgraded 18 stream segments under the existing EPA rules, and indicated that up to 50 percent of all stream tributaries are eligible for a similar "limited use" designation.

These waters are low-flow headwaters with a low assimilative capacity for pollution, and are very sensitive to degradation.

Indiana justified this downgrading because it decided that these waters had "poor physical characteristics" or were in areas "which are inaccessable to most other fish during a significant portion of the year."

This designation system is complex and subject to wide interpretation. It has too many variables which can easily be manipulated and could result in lengthy confusion upon enforcement.

It creates variances for dischargers, and puts a class of degraded waters into the regulation which is contrary to the intent and spirit of the law.

The Izaak Walton League of America is unwilling to condemn any waters to such a classification, especially if such waters affect potable supplies, acquatic life segments, recreational uses or impairs the designated use of the adjoining stream.

Industry is now moving out of the urban areas and into rural areas to evade cleanup regulations just because of this limited use designation, to take advantage of that limited use, and evade compliance.

Nonpoint source pollution has been described as "a cornucopia of crud." Runoff from the city streets, the farms, and the construction sites in Indiana is gigantic: 82,294,000 tons yearly, according to the U.S. Soil Conservation Service's inventory of Indiana—and that's attached to my statement. That much comes off our land.

The most persistent problems in Indiana happen to be in the St. Joseph, the Maumee and the White River Basins. Indiana streams are chocolate brown all year long from the soil erosion. And this silt contains herbicides and pesticides which are heavily used in this corn and soybean producing State. Greases, oils, salt, and lead from automobile exhaust, discharges from septic systems, sewage seepages, and barnyard runoff contribute greatly to the problem, as well as runoff from building, shopping malls, and highway construction sites—they all add to it.

Efforts to control floods by building dikes and filling in the flood plain areas, such as Fort Wayne's futile attempt to control the flow of its three rivers, speeds this runoff pollution.

Section 208 of the act was designed to plan controls on runoff pollution. This program has been one big fizzle in Indiana. We had only two regions, in the central area and in the northwestern part of Indiana, that have established constructive programs.

But the elimination of Federal funding for 208 has put these plans in limbo, others have been forgotten altogether.

Mandatory programs like section 208 are woefully inadequate to arrest this growing problem.

The solution to this problem is the development and implementation of best management practices to reduce runoff.

BMP's include such cost-effective techniques as surrounding construction sites with hay bales to trap runoff sediments, or employing contour plowing on easily erodible soil.

States should be required to identify streams where nonpoint pollution is a problem, and to identify the sources of that runoff. These sources should be required to implement appropriate, economically achievable BMP's on a firm time schedule. Technical assistance and some limited financial aid should be available. The States should be held responsible for removing this crud.

We support Representative Oberstar's bill, H.R. 4037, to control nonpoint source pollution; but we believe it needs to be toughened to insure that the sources of runoff pollution are required to use BMP's.

We support section 3 of H.R. 3282 which would provide badly needed additional funds to build sewage treatment plants. In Indiana, we have unmet sewage treatments needs of $3.7 billion, of which the Federal Government will pay only $486 million, because much of our needs are for combined sewer overflow problems.

H.R. 3282 would authorize an additional $219 million over the next 4 years to speed the construction and operation of sewage treatment systems. Without these systems, Indiana's waters will continue to be plagued by municipal sewage problems.

Indiana's water problems are large, but they are not insurmountable, Mr. Chairman. And with a strong, Federal clean water program, we can tackle our toxic hot spots, pretreatment and the nonpoint source pollution problems.

Enactment of H.R. 3282 would help Indiana and the Nation address these problems and achieve fishable, swimmable waters in the very near future.

On the other hand, proposals to weaken the Clean Water Act, such as a pretreatment opt out would be an unmitigated disaster to the health and safety of Indiana's already troubled waters.

The Indiana division of the Izaak Walton League urges this subcommittee to pass H.R. 3282 and to pass a strengthened version of H.R. 4037.

Again, thank you for this opportunity to testify here today, and I'll be happy to answer any questions.

Mr. ROE. Thank you very much, Mrs. Bloch, for your excellent testimony. It's very good testimony.

What was going through my mind while you were testifying was that back in 1972 we wrote this law; but how do we get somebody to carry it out in the EPA and for the States?

Do you feel we're getting proper management?

I know we need changes and we need improvement; that's what we're here for.

But do you think they're carrying the ball like it should be carried?

Ms. BLOCH. Mr. Chairman, if the Federal Government doesn't issue the guidelines and enforce those standards, which the State can be more stringent upon, they never will.

It gets to be a matter of economics again: Where do we cut? We always cut the environment. That gets the ax all the time.

But if you have the strong laws to enforce these measures, which we so badly need for our environment, that's the only way you are going to do it.

Mr. ROE. I guess it stems out of the philosophy of some people that, we shouldn't have the Federal Government running everything; we should have the States do it; they're perfectly capable; and they can do a better job; and they're right on the scene.

How do you feel about that?

Ms. BLOCH. We have a strong movement of that in Indiana. This came out so strongly in the 208 program in my region IV-B area. We absolutely fell flat on our face because of that group. You know, they don't want Federal aid, they don't want State aid; they're going to do all of this themselves.

And in the 2, 3 years since then they've done absolutely nothing.

So you hate to keep adding laws all the time, but if there are no laws to guide these people or to tell them: do this or else--it's not going to get done.

Mr. ROE. You are leading to my third question:

My third question is, there's really no penalty. You know, the penalties that have been written into the law are really basic, I mean, other than where a particularly devastating health situation may be involved; of course, then you go under the health provisions of the law.

But there aren't any strong penalties for States not to move fast. There's no penalty for the EPA not to move fast.

Do you think we should be looking to some kind of mechanisms that force these issues to be dealt with?

For example, someone goes into court, whether it's the environmentalists or the industrial group going to court, we lose another 5 years.

What should we be doing?

Should there be stronger penalties?

Ms. BLOCH. Well——

Mr. ROE. Criminal penalties?

Ms. BLOCH. I don't know about criminal penalties, but I think that if that's the only answer we can provide to come up with complying with these rules, maybe that's the way we ought to go.

I hate police action, but people ask for it.

If the community is not willing to pitch in and push from the local and State level, we have nowhere else to turn but the Federal Government for help.

Mr. ROE. Do you think the people of Indiana realize the order of magnitude of the problems to their own health and their kids' health?

Ms. BLOCH. It is becoming more increasingly evident all along, and some of this has been, I think, increased because of hazardous waste problems which—of course, the toxic and hazardous waste dumps that we have, which we find leaching into our waters, also. People are beginning to see a few things.

How much they are willing to work real hard toward this, that's growing, too; but not fast enough according to our wishes; but it is growing.

Mr. ROE. I want to thank you very much for being with us today; your testimony is excellent. We appreciate it.

Ms. BLOCH. Thank you, sir.

Mr. ROE. Our next witness, who has been waiting so patiently, is Ms. Priscilla Chapman, of the New England chapter of the Sierra Club.

And following her will be Ms. Marian K. Agnew, representing the Center for Environmental Strategy.

In fact, why don't you just come up together? You're talking about the same issues.

The full text of your prepared statements will appear in the record at this point.

[Statements referred to follow:]

Statement of Priscilla A. Chapman, Executive Director, New England Chapter, Sierra Club

Mr. Chairman and members of the Subcommittee, I am Priscilla Chapman, Executive Director of the New England Chapter of the Sierra Club. Our Chapter office is located in Boston, Massachusetts.

On behalf of the New England Sierra Club, I wish to express strong and enthusiastic support for Rep. Howard's bill, H.R. 3282, to reauthorize the Federal Water Pollution Control Act. I am speaking for over thirteen thousand Sierra Club members in our chapter's area who want to see the progress which has already been made in cleaning up our nation's waterways vigorously continued until the Act's stated goals have been achieved.

While progress has been made in restoring water quality in New England, there is yet a considerable way to go. As of January of 1980, 67% of our major stream areas met the fishable/swimmable goals of the Clean Water Act, according to the 1982 Report of the Region 1 EPA Administrator. 82% are projected to meet the standards by the end of this year. In Massachusetts, 45% of our 1,715 river miles met the standards in 1980, and Region 1 expects that about 60% may be cleaned up by the 1983 deadline.

Failures to meet the goals in certain areas are accounted for by problems of combined sewer overflows, runoff from streets, industrial areas, farms, and construction sites, delays in bringing treatment plants on line and concentrations of toxics in sediment.

The New England Chapter would like to emphasize four areas in particular where it is crucial that the Clean Water Act be maintained or strengthened, in order to continue the progress we have already made.

1. We oppose substitution by a municipality of an "opt-out" pretreatment program for the requirements to meet federal pretreatment standards which are now being promulgated by EPA. Many of our industrialized towns and cities do not have the capability of formulating standards for all the toxic substances which may be discharged into their municipal sewer systems. Several communitites in Massachusetts, in fact, have experienced problems with operations of their treatment plants, known or strongly suspected to be caused by industrial toxic pollutants in the influent entering the plant. On the North Shore, for example, influent containing significant levels of trivalent chromium at the South Essex Sewer District Plant caused plant shut-down and for a period of time, large amounts of raw sewage were being dumped into Salem Harbor.

Toxics from untreated industrial discharges form a major component of the problems with pollution of Boston Harbor. Strong pretreatment programs are

clearly needed, and should not be abandoned to the uncertainties of limited municipal personnel, constricted local budgets, and pressure from local industries on cities to set up lax programs.

2. We support the provision in H.R. 3282 which requires the EPA Administrator to identify and develop specific control strategies for toxic hotspots in non-attainment areas. Without such a provision, it is likely that areas such as the Housatonic River near Pittsfield, Massachusetts, and the upper Narragansett Bay area in Rhode Island will never achieve designated water quality levels. In the case of the Narragansett Bay, for example, serious toxic pollution problems remain despite the fact that Rhode Island has a state-regional sewer authority, set up in 1981 to manage an accelerated pollution control program, and state requirements for installing septic systems were strengthened on the recommendation of a Governor's Task Force. While progress has been made, a specific toxics strategy is clearly required in this case.

3. The Chapter enthusiastically endorses the proposed amendments in H.R. 3282 to the 301(h) waiver requirements which would require primary treatment and pretreatment of toxics equivalent to secondary treatment before granting waivers from secondary treatment, and which would prohibit waivers for discharge into estuarine waters. The Sierra Club has opposed the waiver application for Boston Harbor, submitted by the Metropolitan District Commission, and we are now studying with great concern similar applications submitted by Lynn, South Essex Sewage District, New Bedford, and Fall River. Based on the information found in the present applications, it appears that all of these proposed waivers, if granted, would have potentially significant adverse effect on water quality in the respective estuarine areas, as well as on populations of shellfish, fish, and other aquatic life. The adverse effects would primarily result from unacceptable levels of dissolved oxygen and toxic constituents in the discharges.
In the case of the waiver application for Boston Harbor, there are also serious questions about the information presented on tidal flows and current movement, and about the conclusions which were drawn on mixing of the effluent in the receiving waters and possible pollutant concentrations in bottom sediments. Requiring Boston and the other communities mentioned above to comply with the provisions of the amendments proposed for 301(h) would result in extension of their outfalls beyond bay areas to areas where greater degrees of mixing of

discharged pollutants would be expected to occur, in order for these municipalities to obtain waivers. Such extension would be likely to decrease potential for bioconcentration and sediment build-up. In addition, because these municipalities would be required to satisfy strict primary treatment standards and pretreatment equivalent to the toxic removal level of secondary treatment, there would likely be a decrease in the levels of toxics and other pollutants in the effluent. Thus waiver of secondary treatment might prove environmentally acceptable in these cases.

Savings to municipalities are still likely to result. The National Wildlife Federation has estimated that the cost to Boston of extending their outfall beyond the baseline to be around $140 million -- significantly less than the projected capital and operational/maintenance costs of a secondary treatment plant.

4. The New England Sierra Club urges the subcommittee's serious consideration of the problems of pollution from "non-point" souces. We support Rep. Oberstar's proposed amendment to address these problems, but would like to suggest additional provisions.

Increased control and elimination of point source discharges under the provisions of the Clean Water Act have made it possible to identify, characterize and quantify pollution from "non-point" sources. Under Sections 208 and 305b of the Clean Water Act, states have performed inventories of non-point pollution and described control strategies. Some states, in fact, have completed the 305b analyses in great detail. What is still lacking, however, is an across-the-board requirement for states to implement these plans.

A 1977 report by the Massachusetts Division of Water Pollution Control on Non-Point Source Pollution described the types of pollution entering each river basin in the state, and demonstrated a wide range of sources, from agricultural runoff, landfill leachate, pesticidies and erosion from forest and construction sites, to septic seepage, runoff of oil and road salt, urban industrial site runoff, and many problems with combined sewer overflows, particularly in cities with very old water and sewer systems. More recent reports have been able to quantify the abount of pollution resulting from non-point sources; for example, a recent study of a stretch of the Housatonic River in the Pittsfield area demonstrated how river pollution resulting from runoff can be measured by

subtracting pollutant load measured at the discharge point of local industrial sources from the total load measured downstream in the receiving waters. Some of the projects generated under the National Urgan Runoff Program have shown that non-point source pollution control for urgan areas need not be expensive propositions, particularly if control strategies such as catch basins, grass cover, and street sweeping are utilized in targeted areas of a city, where the largest amount and most harmful forms of runoff could be expected to occur. Other studies examining problems of combined sewer overflows have suggested that better maintenance of sewer systems and certain kinds of repairs are likely to decrease sewer overflow, without necessarily replacing entire systems. Characterization of the problems and identification of strategies, however, have not necessarily resulted in solutions. Restrictions on state and municipal budgets have diverted funding and personnel away from areas where control action is not mandated. My own state's lack of a comprehensive non-point source control policy was highlighted for me last summer when I observed a state-owned vehicle liberally spraying herbicides on trees bordering a public drinking water supply. Despite the fact that non-point sources were extensively described by the state in 1977, many of the problems remain uncontrolled today.

The New England Sierra Club does not at this time urge this committee to require uniform control strategies in each state. We recognize the wide diversity of problems in individual states and regions and the widely different strategies needed to address them. Rep. Oberstar's proposed amendment would allow states the flexibility needed to develop programs most effective for that state. We believe it is necessary, however, to add deadlines by which states must implement their programs (for example, within a six year period), and a requirement that EPA step in and administer a program in a state defers, thus providing an enforcement mechanism. We also urge that funding be provided to states, as well as technical assistance from EPA. The funding should be available for use for repairs to sewer systems, as well as other purposes.

Thank you very much for this opportunity to testify. We hope that this Subcommittee will give a strong endorsement to Rep. Howard's bill, H.R. 3282, with Rep. Oberstar's amendment.

BEFORE THE
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
U.S. HOUSE OF REPRESENTATIVES
THE SUBCOMMITTEE ON WATER RESOURCES

TESTIMONY OF MARIAN K. AGNEW, PRESIDENT
THE CENTER FOR ENVIRONMENTAL STRATEGY

November 9, 1983

Mr. Chairman, distinguished Members of the Committee:

My colleagues in the environmental community have spoken on the Section 404, toxics and coastal provisions in the proposed legislation, H.R. 3282. I support their positions on these issues. However, I do not wholeheartedly support the coalition proposal for Estuarine Management Conferences because the lessons of history on the Potomac Estuary have taught us that the quarter-billion-dollar-five-year authorization would be far better spent assuring that government agencies already responsible for overseeing our coastal estuaries are enabeled to do their jobs effectively.

Also offered here for your consideration is a minor amendment to improve the practical application of Section 201(g)(2)(requiring grant applicants to study and evaluate alternative waste treatment techniques providing for water reclamation or recycling and eliminating pollutant discharges).

Proposed Amendment: Title II, Section (g)(2) of the Act.

(g)(2)The Administrator shall not make grants from funds authorized for any fiscal year ... unless the grant applicant has satisfactorily demonstrated to

the Administrator that — [1]

(A) a request for competitive proposals (RFP) for all reasonable alternative waste management techniques which fulfill the goals and objectives of Title I, Section 101, and the purpose of Title II, Section 202, has been advertised in at least three national newspapers and at least three trade journals which are widely circulated within the water pollution control industry; and

(B) Alternative waste management techniques have been studied and evaluated and the works proposed for grant assistance will provide for the application of the best practicable waste treatment technology over the life of the works consistent with the purposes of this title; and

(C) as appropriate, the works proposed for grant assistance will take into account and allow to the extent practicable the application of technology at a later date which will provide for the reclaiming or recycling of water or otherwise eliminate the discharge of pollutants.

This proposed amendment, an addition to the 1972 Amendments, brings §201(g)(2) up-to-date. More than ten years ago, when this section originally was written, reclaim-

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1. The proposed amendment is differentiated by script type.

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ing and recycling of water and elimination of pollutant discharges was anticipated. Today, it is a reality. Many communities around the nation already have constructed these cost-effective clean systems; many more are planned.

The most pressing major problem remaining is informing community leaders who are shopping for effective low-cost treatment technology about what is available. Typically they are not told accurately about alternatives to conventional treatment which are competitively advantageous. They are usually given only limited options recommended by their local engineer. Decision makers then do not have a complete understanding about what technology is available - no real choices from which to pick the best alternative.

Moreover, when recycling alternatives are studied, they are misrepresented or undervalued. Costs are inaccurate and inflated. Those who have had experience with conventional systems only, understandably cannot and will not speak in favor of their competitors. As a result, in the usual Environmental Impact Statement, alternatives become "straw men", systems to be evaluated and dismissed as unacceptable for one reason or another. To date, the market has been largely controlled by the hardware and chemical manufacturers, consultants, academics and the construction grants bureauracracy within EPA. Less than 10% of EPA grants have been spent on the kind of alternative technology, slow rate irrigation, which meets the recycling and "no discharge" requirements of the Act. The time has come to break open the competitive process

and to require that the most recent, inexpensive and effective technology be presented to those who have to determine how to spend community tax dollars and to live with the results. Requiring requests for proposals prior to the Step I process can accomplish this end.

A practical example illustrates this point. Public officials in Stevens City, Virginia were ordered to improve wastewater facilities. They refused to join a large regional system because of cost. An RFP was circulated and received nine proposals. After presentations by the responding consulting firms, they chose a slow-rate irrigation system which will recycle their sewage "problem" into a revenue-producing asset as part of an overall development plan. Recycling wastewater will, therefore, become a net benefit to the community as well as saving tax dollars. The system chosen is, in fact, so inexpensive that the City fathers decided to finance construction themselves without asking for Federal funds.

By contrast, officials of the City of Rehoboth, Delaware are planning to build a conventional plant discharging to the Lewes-Rehoboth Canal. The Final E.I.S discarded alternatives which limited the decision process to unimaganitive and costly projects. The Canal is used extensively for swimming and fishing, crabbing and other water-related activities. The site chosen is a recently inactivated landfill in a salt marsh. It is actively outgassing methane, a highly flammable gas. State officials have submitted a request to EPA for permission to lower the Water Quality Standards in the Canal by more than half - below the lethal limit for many species of

fish, in order to accommodate the sewage plant discharge. They maintain that, in spite of the discharge, the uses of the Canal will not be changed. If built as planned, the plant will hasten the eutrophication of Rehoboth Bay, continue to pollute the Canal and thereby limit its use to the Community. Extremely high ongoing operational costs for treatment and sludge disposal will be incurred. The Rehoboth plant also may well become the first federally-funded exploding sinking sewage treatment facility in the country. All efforts made by citizens so far to presuade officials to stop this outrageous project and circulate an RFP for a better and cheaper alternative have failed.

It has become abundantly clear, therefore, that the conventional pollution control industry cannot be allowed to continue to resist the changes mandated by amendments to the Clean Water Act since 1972. Millions of dollars allocated for the innovative/alternative "set aside" have been wasted because they have not been spent on these low-cost effective projects. Meanwhile, our rivers and lakes are becoming clogged with algae and the nutrients, nitrogen and phosphorus, are discharged in ever greater amounts. Algal contamination of our raw water sources is causing ever higher levels of trihalomethanes in finished drinking water after chlorination. The conventional seperation approach to treatment is causing enormous sludge problems, both cost and disposal. Witness the fact that as the Potomac is temporarily cleaner, the high-rise mountain

of sludge grows taller - and no one knows what to do about getting rid of it.

Likewise, our beautiful and enormously productive estuaries are dying because of nutrient enrichment. This can be stopped only by preventing point source discharges and non-point-source leaching upstream. Here again, technology is well advance by scientists outside the conventional sanitary and civil engineering professions, taking a holistic approach to the problems. If local communities were fully aware of the effectiveness of these technologies, the benefit to both the local community and its downstream neighbors, they would certainly take full advantage of it.

Limited options are simply costing too much, environmentally and financially. It is time to turn loose the American free enterprise system and let the public know the wide range of promising new ideas available now. This can be done by amending §201(g)(2) to include a competitive search for creative and effective alternatives before any project can be federally funded.

Proposed deletion: §319 of H.R. 3282.

Section 319 proposes resurrecting the "Conference" notion which was the only means of planning for watersheds before the 1972 amendments. It was ineffective then; it will be even more ineffective now because the authority given the conferees will duplicate and/ or compete with programs started more than ten years ago and currently in effect under the current legislation. Section 319

authorizes the Conferees to make river basin master plan and to implement them by recommending priority corrective actions addressing point and non-point sources of pollution, monitoring, developing water quality and toxicity standards, effluent limitations, and to develop best management practices. Admittedly, these are positive actions which must certainly be taken to protect the estuarine regions of the coast.

However, Section 303(e) and Section 209 of the Act already demand both State and River Basin plans. Areawide waste management was supposed to have been addressed pursuant to Section 208 of the Act. Admittedly, most of these programs have failed. The reason for that failure is easy to see: river basin planning starts with land use planning, the source of water pollution. If and when public officials are convinced that they have to start making decisions about what happens between the raindrop and the river, planning will begin in earnest. Until that time, spending nearly a quarter-billion dollars on another duplicative bureaucracy won't speed up the process. Throwing more money at a program that has not worked usually doesn't get results. On the other hand, cutting budgets unless some progress is made might get successful results. If EPA would only say that no projects would get federal grants unless and until the planning process produced projects which will remove nutrients, clean-up of all estuaries would begin immediately. Clean-up of our surface raw-water sources would certainly be an important additional benefit because it would substantially reduce the amounts of cancer-causing trihalomethanes in our finished drinking

water.

Before adding more financial fuel to the fire, please consider the words of Mr. Bill Roulette, a Tilghman Island waterman and Chairman of the Izaac Walton League's Chesapeake Bay Committee. "We all screwed up the Chesapeake Bay because we are too selfish, and lazy and too dominated by self-seeking land grabbers. Now we are playing with something bigger than all of us put together." "The facts are known and the facts are constantly ignored." "It kills me to hear people say, 'We are interested in cleaning up the Bay.' If they were really interested, they would not allow the bureaucrats to run wild. It's just the mouthings of politicians ... it doesn't amount to a hill of pins." "The thing that's so aggravating is that we have all these high-priced studies, but nobody has done a thing." (attached).

The "thing" recommended here is an amendment to the Act which will start the competitive creative American free-enterprise system started at the local level cleaning up local systems in the area where pollution originates, confining disposal of pollutants so they will not migrate to cause water or other pollution and allowing more efficient use of the chemical energy contained in wastewater to offset costs of treatment. Land treatment, the most effective alternative technology in most cases, establishes the relationship between the volume of wastes generated by numbers of people (both municipal and industrial) and the amount of land required to reconvert these wastes into usable

energy.

As such, it is primarily a land use planning tool.

Respectfully submitted,

Marian K. Agnew

Marian K. Agnew

Pollution Brings the Chesapeake to Bay

DENIS COLLINS/Outdoors

EASTON, Md.—After seven years and $27 million, the Environmental Protection Agency this fall finally produced its report on the health of the Chesapeake Bay. It is thicker than War and Peace and about as exciting as the phone book. And Bill Roulette has read every word.

Must have been pretty good, eh, Bill?

"On the subjects they picked to write about, they did a workmanlike job."

Guess it made you feel better about the future of the Bay?

"Baloney."

If you have at least a nodding interest in local news, you are probably aware of the whistling political winds that have been blowing of late across America's largest estuary. Blue ribbon government panels and scientific foundations have probed and poked the Chesapeake with clinical intensity. Congressional delegations have been fed facts and oysters while bobbing on its blue-green swells.

On Monday evening, no less a personage than Walter Cronkite will moderate a panel discussion about the Bay at Easton High School here.

It would seem that great forces are at work to improve the declining health of the Chesapeake. But if you talk to the people who make their living on the Bay, such as Roulette, a 57-year-old waterman from Tilghman Island, that supposition sounds as hollow as a carnival barker's pitch.

"The facts are known and the facts are constantly ignored," says Roulette, white-haired, blue-eyed captain of the Barneckle, a 35-foot wooden work boat. "It kills me to hear people say, 'We are interested in cleaning up the Bay.' If they were really interested, they would not allow the bureaucrats to run wild. It's just the mouthings of politicians . . . it doesn't amount to a hill of pins."

Roulette is vice president of Maryland's Izaak Walton League and chairman of that conservation organization's Chesapeake Bay Committee. He is called upon half a dozen times a year to represent watermen at state functions. He may not always be right, but he is always informed.

And, after more than 10 years of listening to reports and promises while watching the Chesapeake continue to deteriorate, he is beginning to sound a little bitter.

"The thing that's so aggravating is that we have all these high-priced studies, but nobody has done a thing," says Roulette. "Things have not changed one iota."

The EPA report confirmed what the watermen knew too well already. The Bay, 180 miles long and 30 miles wide, is not as healthy as it once was and appears to be getting worse due to chemical runoff from farms and industry and contamination by heavy metals and other toxic materials. Chlorine-treated waste from hundreds of sewage treatment plants has adversely affected the reproductive capacity of fish, crabs and oysters.

In the past 20 years, for example, the Bay's oyster harvest has dropped from 30 to 20 million bushels a year. The catch of striped bass, formerly the Chesapeake's premier sport fish, has dropped by almost 80 percent during the same period.

"There used to be year-round work for a waterman on the Chesapeake," says Roulette, who moved to Tilghman Island, about 20 nautical miles south of the Bay Bridge, 11 years ago after quitting a job running a printing shop in Philadelphia.

"In winters, you would go after oysters. In spring, you'd use seine nets for herring, shad, rock, white and yellow perch. Then there'd be eel potting, then trotlining for crabs. There's no fishing any more. The waterman has to make it with just two spots, crabbing and oystering."

When Roulette talks to citizens' groups, he is careful to distribute blame for the Bay's condition over a wide area, and concedes commercial fishermen must accept their fair share.

"We all screwed up the Chesapeake Bay because we are too selfish, and lazy and too dominated by self-seeking land grabbers. Now we are playing with something bigger than all of us put together. The Chesapeake Bay is the prime source of basic food for all of the Atlantic fishing, from Nova Scotia to Jacksonville. We're messing up the protein on other people's tables.

"When I go around to talk to people, it doesn't do me much good to talk about the survival of the Bay in terms of oysters and crabs. There aren't that many people who like oysters and crabs. It's nice to talk about skipjacks and watermen and old ways, but it doesn't allow you to get into the pocketbooks needed to fix it."

Last month, Roulette took me to a meeting between Maryland Congressman Roy Dyson and supporters of the St. Michael's Maritime Museum. Dyson is sponsor of an amendment to the Clean Water Act that will authorize about $50 million in federal aid over a four-year period to help reduce pollution in the Chesapeake. But when asked about the likelihood of getting the money for which he was asking, Dyson sounded very much like Roulette.

"There's tremendous support right now for cleaning up the Chesapeake Bay," began Dyson. "But when it comes to the real support, comes to signing that line, it gets a little murky. In an election year, they're not going to raise taxes. That may be the program to cut."

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August 17, 1983

COMMENTS ON THE FINAL EIS ON THE REHOBOTH
BEACH SEWAGE TREATMENT PLANT

The comments attached to this cover sheet address problems in both the EIS process and in the methods used to lower the Water Quality Standards in the Lewes-Rehoboth Canal. Since the discharge must by law conform to its NPDES effluent limitations, and the effluent limitations must be based on water quality standards, and the water quality standards must be based on water uses, there is, in my opinion, no way to disengage the issues raised here:

1. Even though the shellfish and body contact recreation uses for the Canal have been kept, reducing the dissolved oxygen standard to 3.0 mg/l daily average and 2.0 mg/l daily minimum admits that dead fish and NO swimmers will soon be seen if DO drops to that level.

2. If you are looking at a body of water for potential pathogens, you test for fecal strep as well as fecal coliform. I found no fecal strep analysis in the EIS. You did admit that regrowth came primarily from STP effluent, not marsh coliform.

3. The EIS does not admit that for the past 20 years, the City has dumped its sludges into the Canal. The benthic DO demand of that bottom load has not been established by on-site tests.

4. Mayor Hughes of Rehoboth Beach has told us that since the Final EIS was promulgated, the City and its consultant have changed the in-plant process from rotating biological contacters to an oxidation ditch. They have also changed chlorination and dechlorination to ultra violet radiation. Whether the sand filters have been kept is not known. The new process must be evaluated.

5. The STPs proposed at Rehoboth Beach and Lewes lock the area jurisdictions into a plan of poor quality treatment at high cost and high O&M from now on. The kinds of secondary treatment proposed have a poor track record for compliance. The package plants proposed are viewed with horror by most jurisdictions because they are always out of compliance. Use of septic tanks will continue to pollute surface and ground waters. East of the highway, whatever flows flows to the Canal, amd the Canal is on the verge of going septic.

6. This may be the nation's first exploding sinking sewage treatment plant because it is to be built in a marsh on a landfill containing organic matter which is still in the process of decomposing. EPA admits outgassing methane. Supporting the weight of a 15 foot deep concrete ditch on pilings in order to keep it from cracking may be exhorbitantly expensive. A second opinion is needed here.

7. Even better, send out an RFP for new approaches. Since there is no way to discharge secondary treatment anywhere in the area and meet tidal standards, go for no discharge with an I/A system.

COMMENTS ON THE PROPOSED REHOBOTH BEACH AND LEWES SEWAGE TREATMENT PLANTS DISCHARGING TO THE LEWES REHOBOTH CANAL DELAWARE - U.S. EPA REGION III

1. The hydrology and assimilative capacity of the Canal is not properly evaluated in the EIS because both are based on assumptions and conclusions from a second-hand model of the Murderkill River, not on on-site data.

The Lewes/ Rehoboth Beach/ Dewey Beach area of the coastal Delaware shoreline extends from Cape Henlopen to the northern boundary of the Delaware Seashore State Park. The individually incorporated areas east of the Lewes/ Rehoboth Canal are located on the barrier island between an extensive salt marsh system and the Atlantic Ocean. The Canal begins as an extension of the Broadkill River at the Lewes end and is cut south to Rehoboth Bay through the marshes. Roosevelt Inlet, approximately 1 Km north of Lewes, permits the Delaware Bay tides to flush out the Canal to approximately the northern end of the developed area of Rehoboth Beach. This high tide seems to drive the tidal system. It is approximately one hour ahead of the far less powerful Rehoboth Bay tide and sweeps the discharge from the small STP at Lewes (.75 mgd) through the Inlet at low tide.

The Rehoboth Bay tide, on the other hand is neither high nor strong enough to flush out the Canal. From the very inadequate data contained in the consultant's report, the net flow of only a few cuf to the Bay seems to have far less flushing action than the Delaware Bay tide. The Rehoboth Beach STP, located just south of the 14th Street Bridge discharges into the Rehoboth Bay tidal reach. The extent of the STP plume at high and low tides is not discussed in the Draft or Final EISs. Another major factor affecting the assimilative capacity of the Canal at this point is the cumulative effect of sludges discharged into the Canal at the STP since 1969.

The assimilative capacity of the Canal seems to have been determined by a mathematical model prepared by the Consultant to determine treatment plant components for the Kent Co. STP on the Murderkill River. The report on that River stated that some of its model inputs were not determined by actual verifiable data. For example, the benthic O demand was taken from the literature on

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1. Jensen, Paul A.1981, Water Quality Analysis of the Lewes, Rehoboth Canal, Delaware, Document No. 8171, Delaware Division of Environmental Control, Dilly, Dover, Delaware.

the Houston, Texas Ship Channel by guessing at its similarities with the Canal. Moreover, inputs for DO in the Marsh flux were not taken from the Canal marshes. Since the Murderkill is a fresh water river emptying into a tidal marsh and the Canal is a salt marsh drainage system emptying at both ends, not simultaneously, it seems doubtful that the same model and unverified assumptions can determine the assimilative capacity of the Canal when it was designed to assess the treatment train on the Murderkill STP.

2. Effluent limitations are based on continued degredation of water quality, thereby necessitating illegally lowering water quality standards by half.

In August 1982, after the Draft EIS was promulgated, officials in the Delaware Department of Natural Resources lowered the Water Quality Standards in the Lewes/Rehoboth Canal from an average daily value of 6.0 mg/l for dissolved oxygen to 3.0 mg/l. Minimum DO values were lowered from 5.0 mg/l to 2.0 mg/l. The Consultant's reports were cited to justify the change because they seemed to indicate that the marshes, not the sewage treatment plants and sludges were the cause of a continuous low DO condition in the Canal. Whether EPA has legally approved this change is not known.

As far as we have been able to determine, the State did not change the uses of the Canal from shellfish and body contact recreation. The 3/2 standards are not adequate to support fish and shellfish. In fact, if allowed to occur, they will certainly cause certain areas of the Canal to go septic, killing every species dependent upon oxygen levels exceeding 4 mg/l.

Neither the consultant's reports nor the EISs contain any bioassays of the Canal. Our on-site inspection of the Canal from the Roosevelt Inlet to Rehoboth Bay on August 12, 1983, showed no fish kills, no septic conditions. The only area visibly degraded was south of the 14th Street Bridge, the area of the Rehoboth STP discharge. Because the plant has added aerators, there was practically no smell in the discharge area. However, further downstream, the usual sewage odors were discernable.

Reading the consultant's reports on the Murderkill and Canal and the Draft and Final EISs on the Lewes and Rehoboth STPs together, it is clear that the Canal discharges could not be allowed unless Water Quality Standards were lowered by half. The recommendation is first seen in the Draft EIS on the Rehoboth STP in Appendix C, prepared by the State. "The Delaware Water Quality Standards for Streams criteria for tidal streams should be revised during the next revision cycle (in 1982) to reflect 2.0 mg/l instantaneous minimum and 3.0 mg/l daily average dissolved oxygen standards for the Lewes/ Rehoboth Canal." Appendix C at 11. The wasteload allocations for the Rehoboth STP are based on these standards.

The Final EIS, prepared by EPA states that "The dissolved oxygen standard is to be lowered in order to make water quality goals realistic and attainable." Final EIS at 3. This action is clearly illegal under the Clean Water Act - and totally unprecedented.

3. These STPs are the first phase canal discharges leading ultimately to other STPs or package plants sewering development west of the Canal.

Proposals for the Lewes and Rehoboth STPs leave completely unanswered questions about clean-up for overflowing septic fields in the developing area of Sussex County along Rte. 14 west of the Canal. In one scheme, package plants discharge to the Canal directly between the Rehoboth bridges and at Bay Vista. Five pumping stations can be assumed to have bypasses. Other package plants discharge to the headwaters of the marsh system that drains to the Canal above the developed areas of North Shores and Henlopen Acres. These discharges will undoubtedly create other degraded areas in the Canal similar to the area near the existing STP. Package plants have developed a bad reputation for performance. Since the General Accounting Office has reported that municipal plants function within their permitted effluent limitations only approximately 60% of the time, package treatment plants can be assumed to be even less effective. The Colonial East package treatment plant which has created septic conditions near Wolf Glade, tributary to the marsh, is a model for the kinds of problems anticipated with decentralized and improperly supervised systems.

4. Information in both the Draft and Final EISs is irrelevant because the City of Rehoboth has discarded the alternative selected by EPA and chosen instead unevaluated STP components during the Step II process.

During our interview with Mayor John Hughes of the City of Rehoboth Beach, he said that the plans for the plant had been completely changed. Instead of the Rotating Biological contactors and sand filters with chlorination and dechlorination, the City has chosen an oxidation ditch and ultra violet disinfection. These processes were rejected by the Final EIS. Why they have replaced the original choices was not explained - except that they were deemed to be cheaper. If this is the case, the Final EIS must be republished with justifications for the change and explanations as to cost, levels of treatment, efficacy, and environmental impact. We have serious doubts that a single oxy-ditch system can adequately handle flows which are 10 times greater in summer than in winter. We also want to know what retention times are required for ultra violet disinfection - and how large the holding tanks will have to be to treat the high summer flows. It is improper to conduct an EIS process with public participation and, after that process has been completed and approved by EPA, to completely change the essential components in the plant processes, unilaterally.

5. Neither the Draft nor Final EISs adequately resolve sludge disposal problems.

We were informed by Mayor Hughes that the City had finally stopped discharging its sludge to the Canal and had started depositing

the Hudson Farm near Milton, Delaware. Evidently, sludge is interred into the ground when it is not raining. At other times, sludge is delivered to the Kent County STP for disposal there. We do not know what method is used at Kent Co, but should be told.

Sludge disposal is an ongoing plague connected with the use of conventional sewage treatment plants. Logically, the more pollutants removed the greater the amounts of sludge. These sludges are concentrated pollutants which contain a high percentage of water. Under the best conditions, they migrate as non-point source surface runoff. Under the worst, they migrate to pollute the groundwater.

A recent study of groundwater contamination of the aquifers under the State has shown that high levels of nitrogen are found where chicken manure is applied to the land.[2] The problem will also occur with sludge except that it is probably worse because there is more sludge than manure and it is already over 50% water. Even though the sludge from the Rehoboth and Lewes plants will probably not contaminate the aquifers in this area, it should not be allowed to contaminate any other groundwater. It seems rather peculiar that the groundwater contamination concerns were so fully amplified in the chapters concerning land treatment (where sludge is not a problem) and have been left completely unexamined in the section on land application of sludge.

6. Descriptions of land treatment systems in both the Draft And Final EISs show that the writers are not familiar with recent recycling technology which closes the farm/city loop and could replenish and cleanse the aquifer.

Land application and recycling is considered an innovative alternative (I/A) type of treatment which will continue to be funded at 75% federal grants after the federal share for conventional treatment plants drops to 55% in 1985. The problem most small communities face is finding a competent consultant to work with them on their problems. The kinds of systems described in the Draft EIS betray little knowledge of the integrated systems approach to design a proper land application system. Alternative g, p 7-8 is a good example. It proposes conventional secondary treatment and ridge and furrow application and concludes that this treatment is not cost effective. Such components are only useful in an extremely limited land area where the land application system is really a polishing component rather than a treatment step. In the Rehoboth area, where there are miles and miles of farmland growing high nitrogen demand crops, slow rate irrigation after secondary treatment

2. Ritter, William F. and Chirnside, Anastasia E.M., 1982, Ground Water Quality in Selected Areas of Kent and Sussex Counties, Delaware, For DNREC, Dover, DE 19901.

in a "farm pond" should be discussed. This kind of system could probably operate far more effectively than any conventional treatment system where the summer loading rates are 10 times those generated by the winter population because farms need more water in summer. Unless sludge is desired,none is generated because it is allowed to biodegrade in the bottom of aerobic lagoons. No odors are generated because the lagoons are kept aerobic. (This is the technique used by the City of Rehoboth to clean up odors at its present primary plant.) Land could be leased or purchased. It could be in one place or in several, depending on the availability and placement of the conveyance system.

We have seen references to the LeCato system and the problems relating to it. The Negative Declaration clearly showed that whoever designed the system had no real idea of how a well designed land treatment system should work. For example, large areas were set aside for sludge disposal. None are needed. The system could be designed to take septage (pumped out septic tank wastes from current problem areas) as well as sludge that would be used to generate methane in a digester. The methane then runs a generator to put electricity back into the grid - to defray the cost of treatment. Whatever is grown on the farm can be harvested and turned into alcohol in a still. There is a good market, which is growing, for alcohol for fuel - at gasoline prices. Or the corn could be sold on the market. In summary, a land treatment system is simply a well run farm using irrigation techniques after secondary treatment in an aerated lagoon to raise valuable crops with fertilizer supplied by the effluent. It is the only economical way to remove nutrients ata net financial benefit to the users of the system. The tortured alternatives described as land treatment demonstrate clearly that those who prepared them have little experience with designing cost-effective recycling systems. After more than ten years, EPA should know better.

I suggest that before land treatment systems are rejected out of hand,the applicant for federal funds be required to show that a request for proposals, including the discharge limitations, was circulated to all consultants developing this technology. Only after the proposals are evaluated and costed-out can the applicant choose the most effective and cheapest system for the community in a competitive and businesslike way.

Respectfully submitted,

Marian K. Agnew

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MARIAN K. AGNEW
ATTORNEY AT LAW

TELEPHONE (703) 241-0993

1740 DUMBARTON STREET
McLEAN, VIRGINIA 22101

August 17, 1983

Thomas Eichler, Regional Administrator
U.S. Environmental Protection Agency,
Region III
6th and Walnut Streets
Philadelphia PA 19106

Dear Mr. Eichler:

Within a month, Region III will receive an application from the City of Rehoboth, Delaware for Step III money to build a 3.3 mgd sewage treatment plant discharging to the Lewes-Rehoboth Canal. This letter requests immediate extensive chemical and biological water quality testing in the Canal and marshes before that construction grant is approved. I stress "immediate" because worst case conditions exist only during August before Labor Day when both visiting and resident population peaks and the weather is hottest.

To accommodate this discharge, as well as those anticipated from package treatment plants proposed as a solution for the overflowing septic fields west of the Canal, the State of Delaware lowered by more than half its dissolved oxygen standards for the Canal in 1982. The 3.0 mg/l daily average and 2.0 mg/l minimum were justified by a mathematical model of the Canal and salt marsh system. It purported to show that the low DO levels seen during parts of the year were "natural" conditions justifying the change.

Both the model and critical inputs were taken from work done on the Murderkill River to determine the treatment train for the Kent Co. STP. Furthermore, the most recent data used to verify it was gathered in 1979. The model itself may, therefore, be faulty; the data used to verify it is certainly out of date.

As you know, the Canal is highly visible. It is also too important a recreational resource to have to discard. The State has recognized this by keeping tidal water uses, body contact recreation and shellfish, even though DO could be lowered so that these uses become impossible.

EPA has qualified experienced scientists who can collect good data on present conditions in the Canal and marshes. I hereby respectfully request that you initiate a comprehensive monitoring program immediately, including both bioassays and chemical data, to determine the assimilative capacity of the Canal.

As requested by your staff, my comments on the Final EIS are attached.

Sincerely,

Marian K. Agnew

MARIAN K. AGNEW
ATTORNEY AT LAW

TELEPHONE (703) 241-0993
In Rehoboth: 302 227 2345

1740 DUMBARTON STREET
McLEAN, VIRGINIA 22101

August 18, 1983

Mr. William D. Ruckelshaus, Administrator
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Bill:

Within a month, Region III will get an application from the City of Rehoboth, Delaware for Step III money to build the first exploding sinking sewage treatment plant in the country. It is to be built on a landfill in a marsh beside the Lewes-Rehoboth Canal within two miles of the Rehoboth Bay Sailing Club - and only a mile from the Country Club. In order to legitimize the discharge, the State illegally lowered the dissolved oxygen standard in the Canal by half, from the shellfish and body contact recreation DO levels of 6.0 mg/l to 3.0 mg/l daily average, and from 5.0 mg/l to2.0 mg/l minimum. They used a second-hand mathematical model which was originally designed to determine the in-plant processes for the Kent Co. STP on the Murderkill River to show that the background levels of DO caused by water moving in and out of the marsh on the tide were causing the problem. They did not show that the City STP had been dumping its sludge into the Canal for 20 years or that the disynchronous tides at both ends almost make it a sink. The present tidal water shellfish uses have been kept.

Before anything else is done, EPA has to get some good data. I have called both the Water Programs section here and have talked to Region III. I keep running into the two people who probably already know the problem intimately, Green Jones and the new Region III Administrator, Mr. Eichler. He worked for the Delaware Department of Environmental Resources which designed and approved this scheme. I asked for help.

While the weather is hot - and lots of people are in residence, we need the Canal waters tested thoroughly. The marshes should also be included, especially since one of the marsh tributaries has a nasty package plant on it. This is the last chance for a year.

Finally, the City and its consultant have changed the in-plant process completely since the Final EIS. They and EPA approved rotating biological contacters and sand filters. The latest scheme (we were told by the Mayor) is an oxydation ditch. Chlorination has also been changed to ultra violet radiation. My engineers tell me that where the summer population is 10 times the winter population, they would have to have two complete systems to make an oxy-ditch work properly. Since the GAO says that these systems are out of compliance at least 40% of the time anyway, it doesn't look good.

Thanks for whatever help you can give us. Glad to have you back.

Marian

P.S Please have your staff send me whatever data is available to document the effectiveness of ultra violet for inactivating bacteria and viruses with a secondary effluent. I am particularly concerned because this is an international community in the summer-time. The potential for an exotic variety of microorganisms in domestic sewage discharges exists. The STP discharges to waters where people catch crabs and eat them. People also swim in the Canal. Public health implications are obvious.

Thanks,

MKA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
6TH AND WALNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

In Reply Refer to: 3WM22

SEP 27 1983

Marian K. Agnew, Esq.
1740 Dumbarton Street
McLean, VA 22101

Dear Ms. Agnew:

This letter is in response to your letter to Mr. Eichler dated August 17, 1983, concerning the City of Rehoboth sewage treatment plant. You requested chemical and biological testing of the Lewes-Rehoboth Canal prior to EPA approval of a pending construction grant application for the Town of Rehoboth Beach, on the grounds that adequate information currently was not available upon which to make our funding decision.

I must respectfully deny your request for immediate additional sampling. The Lewes-Rehoboth area has been the subject of extensive controversy, and as a result, extensive study and evaluation since at least 1975. EPA has been deeply involved in the review and approval of the effluent limits developed for the plant discharge as well as the revisions to the water quality standards. We are satisfied that there was sufficient water quality data available to support those decisions. Therefore, I can see no need for additional studies at this time.

I also appreciate your comments on the final Rehoboth Environmental Impact Statement (EIS) and would like to briefly address the concerns you have raised in the same order that they were presented.

1. Dissolved oxygen (DO) does not affect the contact recreation value of a body of water as long as the DO does not drop to zero. Therefore, lowering the DO standard in the Lewes-Rehoboth Canal to 3.0 mg/l average will not affect swimmers.

   The standard was changed to provide a more realistic water quality goal. The revised standard reflects the naturally depressed DO conditions of the canal and is not intended to accommodate any wastewater discharges in the area. Some of the information in support of this change is available from the water quality model of the Lewes-Rehoboth canal developed by Espey, Huston, and Associates, Inc. This model was calibra-

ted to a significant amount of physical and chemical data collected in the Lewes-Rehoboth Canal in 1979. Since we know of no significant changes to the canal since the data was collected, we feel that the data and therefore the model is valid. The model projects that there will be a negligible effect on the DO in the canal from discharges of even greater flows than those being considered in the design of the proposed Lewes and Rehoboth facilities. It is also interesting to note that two DO measurements taken in the canal during the September 29, 1979, model survey were between two and three mg/l. In summary, we believe that this standard change will not affect the DO conditions that presently exist in the canal.

2. While it is true that no fecal strep analysis was presented in the EIS, we believe that the use of the standard fecal coliform tests was justified for our evaluations.

3. The EIS preparers had no documentation or reason to think that Rehoboth has disposed of its sludge in any way other than landfill and land injection as it has stated it has done.

4. Rotating biological contactors (RBC's) and oxidation ditches have both been utilized extensively for achieving secondary treatment levels. The State has established effluent limitations to which Rehoboth must comply. So long as the discharge requirements are met, the EPA views the systems as environmentally equal.

5. The treatment facilities will dramatically improve effluent quality. Any proposed package plants in the area (none of which are to be funded by EPA or the State) will be required to provide a level of treatment similar to Rehoboth Beach's effluent limits. The wasteload allocation for any such package plants will be taken from the future reserve set-aside which was established when the Rehoboth Beach effluent limits were determined, and thus will not exceed the Canal's assimilative capacity.

6. A value engineering study has been performed which led to the selection of the oxidation ditch over the previously selected RBC units.

7. Innovative and Alternative systems were evaluated by the Facilities Plan and the EIS. A request-for-proposal would only delay the improvement of the wastewater treatment (which will reduce biological oxygen demand loadings, reduce coliform loadings, reduce coliform regrowth, reduce pathogens, and eliminate the potential chlorine toxicity) which we, as you, so greatly desire.

Sincerely yours,

Greene A. Jones

Greene A. Jones, Director
Water Management Division

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CHOLERA — A POSSIBLE ENDEMIC FOCUS IN THE UNITED STATES

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Abstract In September and October 1978, after a case of cholera had been discovered in southwestern Louisiana, 10 more *Vibrio cholerae* O-Group 1 infections were detected in four additional clusters. All 11 infected persons had recently eaten cooked crabs from five widely separated sites in the coastal marsh, and a matched-triplet case-control study showed a significant relation between cholera and eating such crabs (P = 0.007). *V. cholerae* O1 was isolated from estuarine water, from fresh shrimp, from a left-over cooked crab from a patient's refrigerator, and from sewage in six towns, including three without identified cases. All isolates in Louisiana and an isolate from a single unexplained case in Texas in 1973 were biotype El Tor and serotype Inaba; they were hemolytic and of a phage type unique to the United States — suggesting that the organism persisted undetected along the Gulf Coast for at least five years. (N Engl J Med 302:305-309, 1980)

SEVEN cholera pandemics have occurred since the early 1800's. The seventh pandemic, caused by the El Tor biotype of *Vibrio cholerae* O1, began in 1961 in Indonesia, spread throughout Southeast and South Asia, the Middle East, Africa, portions of Europe, and several Pacific island groups, and continues today.[1,2] Although its incursion into the developing countries of the Western Hemisphere has been feared and expected for a decade, it was considered unlikely that the disease would become established in countries such as the United States, which have relatively good water supplies and sewage disposal.[3] However, after the discovery of a case of cholera in Abbeville, Louisiana, in 1978,[4] an investigation led to detection of 10 other *V. cholerae* O1 infections in four additional clusters, determined that the vehicle of transmission was cooked crabs from Louisiana marshes, and found evidence suggesting that similar organisms had persisted undetected along the Gulf Coast for at least five years.

From the Bacterial and Field Services divisions, Bureau of Epidemiology, and the Bacteriology Division, Bureau of Laboratories, Center for Disease Control, the Louisiana Department of Health and Human Resources, the Department of Microbiology and Immunology, Downstate Medical Center, State University of New York, and the Public Health Laboratory, Maidstone, Kent, England (address reprint requests to Dr. Blake at the Center for Disease Control, 1600 Clifton Road N.E., Atlanta, GA 30333).

Presented in part at the Interscience Conference on Antimicrobial Agents and Chemotherapy, Boston, October 2, 1979.

BACKGROUND

Southwestern Louisiana south of highway Interstate 10, where Abbeville (1975 population, 12,739) is located, is a flat lowland only a few meters above sea level. A largely uninhabited brackish marsh extends approximately 40 km inland from the Gulf of Mexico (Fig. 1). The area is noted for its seafood, and shrimp and crabs are shipped from there to other states.

Cholera was first recorded in Louisiana in 1832, and the last known case occurred in 1873. The United States had only one culture-proved case of nonlaboratory, domestically acquired cholera between 1911[5] and 1978; a single unexplained case was discovered in Port Lavaca, Texas, in August 1973.[6]

On August 10, 1978, a 44-year-old man who lived in Abbeville, Vermilion Parish, Louisiana, and had no history of foreign travel became ill with diarrhea, a temperature of 38.3°C, and nausea. He had copious watery bowel movements approximately hourly, his weight decreased by 5 kg, and he was hospitalized on August 13 because of dehydration. A presumptive vibrio species isolated from his stool was forwarded to state and federal laboratories and was ultimately identified by the Center for Disease Control on September 4 as *V. cholerae* O1, the organism that causes epidemic cholera.

Methods and Results

Epidemiologic Investigation

To determine whether other *V. cholerae* O1 infections were occurring, we began surveillance of sewage and of diarrheal illnesses in southwestern Louisiana. We surveyed sewage by periodically suspending rolls of gauze (Moore swabs)[7] for 24 to 48 hours in flowing sewage at the end points of 28 municipal sewerage systems in 22 municipalities (Fig. 1). In September, October, and November, *V. cholerae* O1 was isolated from sewerage systems in six municipalities, and persons with cholera were simultaneously or subsequently found in three of these cities and towns. We surveyed diarrheal disease by asking physicians to obtain rectal swabs from all patients with diarrhea, encouraging bacteriology laboratories to use thiosulfate citrate bile salts sucrose (TCBS) agar in culturing diarrheal stools, and providing Cary-Blair transport medium to laboratories, private physicians, and public-health units so that fecal swabs could be sent to state regional laboratories. Through surveillance of diarrheal illnesses, four additional hospitalized persons with cholera were found (Patients 2, 4, 5, and 6, Table 1).

The index patient and the four patients with cholera detected by surveillance were interviewed so that we could obtain detailed histories regarding the week before onset of illness and identify all persons who had been in close contact with the patients or who had shared meals with them. Rectal swabs from 65 such "contacts" led to identification of three symptomatic persons (Patients 7, 8, and 9) and three asymptomatic persons (Patients 3, 10, and 11) with *V. cholerae* O1 infections (Table 1). The 11 infected persons were from 12 to 69 years old and lived in five towns. In the month before infection, none had traveled out of state, and only one had taken antacids; none had had an operation involving the stomach. Onset occurred during a two-week period (September 14 to 27) corresponding with the beginning of surveillance in the second week of September (Table 1).

The 11 infected persons had only one food or beverage in common: crabs. Eight with symptoms had eaten boiled or steamed crabs two to five days before onset of illness, and three without symptoms had eaten them within nine days before culture. The crabs eaten by the 11 infected persons came from five lots caught in August and September at five sites up to 130 km apart in the marsh (Fig. 1). The crabs were alleged to have been boiled for 10 to 20 minutes (eight infections) or steamed for 20 to 35 minutes (three infections). Six infected persons ate the crabs within half an hour after cooking, and there was no evidence of post-cooking contamination of crabs eaten by three of these persons.

To determine whether eating crabs was significantly associated with cholera, we performed a matched-triplet case-control study. For the index infected person in each of the five clusters (Patients 1, 2, 4, 5, and 6), we systematically selected two neighborhood control subjects matched by sex and age (±5 years). The subjects in each triplet were asked about their consumption of crabs and five other foods in the five-day period before the infected person became ill. Control subjects were also asked about foods eaten in the five-day period before the questionnaire was administered. The only significant difference between exposures of infected persons and controls was consumption of crabs; none of the 10 controls had eaten

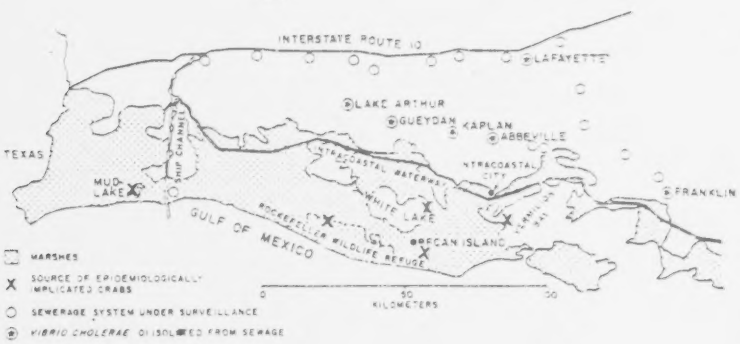

Figure 1. Sources of Epidemiologically Implicated Crabs and Municipalities with Sewerage Systems Tested for *V. cholerae* O1, Southwestern Louisiana, August-November 1978.

Table 1. Epidemiologic Characteristics of 11 Persons with *V. cholerae* El Tor Inaba Infections, Southwestern Louisiana, August-September, 1978.

Patients	1	2	3	4	5	6	7	8	9	10	11
Age (yr) & sex	44/M	52/F	15/F	69/M	19/F	58/F	52/M	56/M	12/M	47/M	42/F
Residence	Abbeville	Abbeville		Kaplan	Intracoastal City	Lafayette				Pecan Island	
Source of crabs	Rockefeller Preserve	Canal near Pecan Island		Mud Lake	Vermilion Bay	White Lake					
Date crabs caught	8/7	9/12		9/9	9/16	9/22					
Date crabs eaten	8/7	9/13		9/9	9/16	9/22					
Date of onset	8/10	9/15	Not ill	9/14	9/18	9/24		9/27		Not ill	Not ill

crabs in either time period, but all five infected persons had eaten crabs in the five days before they became ill ($P = 0.007$ by a method described by Miettinen[4]).

To determine whether other cases of cholera had occurred in Vermilion Parish in the recent past, we obtained single serum specimens in late September from each of 10 persons who had visited the Abbeville General Hospital emergency room at any time between June 1 and September 11, 1978, because of diarrheal illnesses without rash or temperatures higher than 39.9°C. Seventy-five control serum specimens were obtained from Abbeville residents stratified by age, sex, and location of residence to represent the population over the age of nine years. Two of 10 patients seen in the emergency room (onsets, July 1 and 2) and none of 75 survey subjects had three or more cholera antitoxin (anti-PF) units per milliliter[8] ($P = 0.013$ by Fisher's two-tailed exact test).

Environmental Investigation

Between September 12 and October 9, we attempted to recover *V. cholerae* O1 from seafoods and the environment in the sites from which the crabs had come and from the entire area between Vermilion Bay and Mud Lake (Fig. 1). We also looked for evidence of fecal contamination of the area. We cultured 110 live crabs from 60 geographic sites, approximately 400 shrimp from 41 sites, 27 oysters from four sites, frozen cleaned crabs and shrimp from the freezer of Patient 1, frozen cleaned crabs belonging to Patient 4, three refrigerated whole boiled crabs left over from those eaten by Patients 6 to 9, and 165 Moore swabs that had been submerged in canals, lakes, bays, and rivers for 24 or more hours. *V. cholerae* O1 was isolated from one of the three boiled crabs, from shrimp caught in a canal near Pecan Island, and from two Moore swabs — one from a canal near Pecan Island and one from a canal east of White Lake. Sewage commonly drained into canals flowing into the marsh. In 155 surface-water samples, 48 (31 per cent) of the fecal coliform counts exceeded 200 per 100 ml of water. The fecal coliform counts in the sites where the incriminated crabs were caught were approximately the same as the counts in other areas tested.

Laboratory Investigation

All specimens for culture were placed into alkaline peptone broth for six to 12 hours at 37°C and then plated to TCBS agar.[9] Fecal swabs were plated directly to TCBS agar. Suspect colonies were transferred to heart infusion agar (HIA). Colonies from HIA were screened with polyvalent O *V. cholerae* antiserum, and those agglutinating in the antiserum were further identified biochemically and serologically.[11] Isolates identified as *V. cholerae* O1 were tested for toxin production in the Y-1 adrenal-cell assay[12] and in a microtiter solid-phase radioimmunoassay.[13] Four *V. cholerae* O1 isolates were also tested for quantity of toxin production in the rabbit-skin assay.[9,14] All *V. cholerae* O1 isolates from patients, sewers, and the environment were *V. cholerae* biotype El Tor, serotype Inaba; they were toxinogenic by both assays, and hemolytic on sheep-blood agar. In the rabbit-skin assay, two strains produced distinctly more toxin in unshaken than in shaken cultures, as is typical of El Tor strains, and the other two strains tested produced approximately equal amounts of toxin under both growth conditions.

In a comparison of the hemolytic activity of the Louisiana *V. cholerae* O1 strains with that of El Tor biotype strains from elsewhere, 38 strains from Louisiana, a strain from the patient in Texas who had cholera in 1973, and 35 strains collected between 1961 and 1978 from Asia (22), Africa (eight), Europe (two), and Oceania (three) were tested with a tube dilution method described by Feeley and Pittman.[15] The strains from Louisiana and Texas had hemolysin titers of 1:16 or greater. Of the strains from the Eastern Hemisphere, four of seven collected in 1961 to 1963 and only one of 28 collected in 1964 to 1978 had hemolysin titers of 1:16 or greater, and the rest had titers of 1:2 or less.

All 38 isolates from Louisiana and the isolate from Texas (1973) were phage-typed at the Public Health

Laboratory in Maidstone, England, with use of the four classical and five El Tor cholera phages of Mukerjee[15] and eight experimental phages. All the strains from Louisiana and the one from Texas were of the same phage type: they were sensitive to El Tor phages 1, 2, and 5, and to five of the experimental phages. The pattern of phage sensitivities in the strains from Texas and Louisiana was not observed in tests by the Maidstone Public Health Laboratory of 1085 other strains of *V. cholerae* O1 found all over the world and isolated during 1964 to 1979.

In an effort to determine whether *V. cholerae* O1 can survive in crabs that are cooked, boiling and steaming experiments were carried out in duplicate with artificially infected crabs. We infected live blue crabs from Louisiana coastal waters by placing them for 10 hours in seawater containing 10^4 *V. cholerae* O1 from Louisiana per milliliter. After packing in ice for five or more hours, 26 live infected crabs were put one at a time in boiling water and cooked for two to 14 minutes, or put in a large covered pot and steamed for five to 30 minutes. *V. cholerae* O1 was isolated from all crabs boiled for two to eight minutes or steamed for five to 25 minutes but not from any crabs boiled for 10 to 14 minutes or steamed for 30 minutes. Crabs boiled for eight or steamed for 25 minutes were red, and the meat was firm and appeared well cooked.

Discussion

We suspect that *V. cholerae* O1 was introduced into the United States in 1973 or earlier and persisted along the Gulf Coast until 1978. The strongest evidence in favor of this hypothesis is the fact that the isolate from Texas in 1973 and all the isolates from Louisiana five years later were of a single phage type that is unique to the United States. In addition, the isolates from Louisiana and Texas were strongly hemolytic, unlike almost all other El Tor strains isolated worldwide in the past 15 years.[17] Finally, the fact that all the cases reported here could easily have escaped diagnosis suggests that clinicians and laboratories could have missed sporadic cases of cholera, even severe or fatal illnesses, because the disease was not known to be endemic and appropriate laboratory methods were not being used.

The mechanism by which *V. cholerae* O1 could persist for years along the Gulf Coast is unclear. Long-term persistence could occur through generation of a cycle in the marshes: fecal contamination of marsh water by infected persons, contamination of crabs by the water, consumption of inadequately cooked contaminated crabs, further human infections, and further fecal contamination of the marshes. Similar cycles involving other seafoods have been postulated in Portugal[18] and the Gilbert Islands.[19] In 1979, despite intensive surveillance of sewerage systems and persons with diarrheal illnesses in southern Louisiana, no toxinogenic *V. cholerae* O1 strains were isolated; although this result suggests that sporadic cases may be too rare to cause such a cycle to persist, it may have resulted from effective control measures (see below). Chronic carriers of *V. cholerae* O1 have been observed,[19,21] and a carrier in the area could make the cycle operate intermittently. It is conceivable that typical toxinogenic and virulent *V. cholerae* O1 can multiply in the environment and persist indefinitely without additional human fecal contamination. However, studies in India and Bangladesh have failed to support this possibility.[22,23] Careful surveillance and further ecologic studies will be required to determine the manner in which the organism persists.

Although raw or minimally cooked seafoods have been vehicles for cholera transmission,[18,19,24,25] the incriminated crabs in Louisiana were well cooked by traditional criteria. Since the lowest dose of *V. cholerae* O1 of the classical biotype that causes diarrhea in volunteers fed the organism in water is 10^8 vibrios,[26] the presumably small number of surviving vibrios in freshly cooked crabs should pose little risk. However, several factors may have contributed to infection of persons eating crabs. First of all, the infected persons may have had defective production of gastric acid, which is an important barrier to *V. cholerae* O1 infection[26-28]; this possibility was not investigated. Recent studies of volunteers at the University of Maryland have shown that when given with antacids, inocula of *V. cholerae* O1 of the El Tor biotype containing as few as 10^3 vibrios cause high attack rates of mild diarrhea (Levine MM: personal communication). Secondly, ingestion of *V. cholerae* O1 in food apparently lowers the infectious dose: studies in volunteers have shown that severe diarrhea can be induced by 10^4 *V. cholerae* O1 of the El Tor biotype given without antacids in a standard meal but not by the same dose given with water alone (Levine MM: personal communication). Thirdly, *V. cholerae* O1 adsorbs to chitin and is protected from acid by this adsorption[29]; small inocula may successfully traverse the gastric acid barrier adsorbed to small pieces of chitin-containing crab exoskeleton. Finally, in the crabs that were not eaten at once after cooking, the surviving vibrios may have multiplied; *V. cholerae* O1 can multiply in other foods[30,31] and in chitin suspensions.[19]

Since the results of the investigation suggested that large areas of the marsh harbored small numbers of *V. cholerae* O1, the state urged the public to boil crabs from the marsh for at least 15 minutes and required commercial establishments to steam crabs under pressure or to boil them for 15 minutes. Construction and improvement of sewage-treatment facilities in southwestern Louisiana was accelerated. To protect persons in other states, Louisiana cultured crabmeat from crab-processing plants, and the United States

Food and Drug Administration cultured 1110 live crabs from shipments leaving the state; all cultures were negative. Louisiana has maintained surveillance of selected sewerage systems and of persons with diarrheal illnesses for *V. cholerae* O1, and the Center for Disease Control has urged other Gulf Coast states to do the same. Physicians should be alert for the disease and ask their laboratories to look specifically for *V. cholerae* O1 when patients have severe watery diarrhea.

We are indebted to the patients' private physicians, the staff of Abbeville General Hospital, the physicians, nurses, sanitarians, engineers, and microbiologists of the Louisiana Department of Health and Human Resources, and the staff of the Epidemiologic Investigations Laboratory Branch, Center for Disease Control, for assistance, and to H. L. Smith, Jr., Ph.D., Jefferson Medical College, Philadelphia, for *V. cholerae* O1 strains.

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CHOLERA ON A GULF COAST OIL RIG

JEFFREY M. JOHNSTON, M.D., DEBORAH L. MARTIN, R.N., M.N., JAMES PERDUE, B.A., LOUISE M. MCFARLAND, DR.P.H., CHARLES T. CARAWAY, D.V.M., M.P.H., EDWIN C. LIPPY, M.S., P.E., AND PAUL A. BLAKE, M.D., M.P.H.

Abstract A single case of severe diarrhea on a floating Texas oil rig was followed two days later by what proved to be the largest outbreak of cholera in the United States in over a century. After isolation of toxigenic *Vibrio cholerae* El Tor Inaba of the typical United States phage type from the index patient's stool, the ensuing investigation detected 14 additional cases of cholera and one asymptomatic infection serologically. Infection was associated with eating rice on the oil rig on a particular day ($P = 0.03$) when an open valve permitted the rig's drinking-water system to be contaminated by canal water containing sewage (including that from the index patient) discharged from the rig. The rice had been rinsed in the contaminated water after cooking, and before being served it had been maintained at a temperature that allows *V. cholerae* 01 to multiply. Toxigenic *V. cholerae* 01 is persisting in the United States, and large common-source outbreaks of cholera can occur if proper sanitation is not maintained. (N Engl J Med 1983; 309: 523-6.)

THE first known case of cholera acquired in the United States since 1911 occurred in a resident of the Gulf Coast of Texas in 1973.[1] In 1978, 11 more *Vibrio cholerae* 01 infections were detected in southwestern Louisiana,[2] and in early summer 1981, two cases of cholera were identified in southeastern Texas.[3] The vehicle of transmission in Louisiana[2] was undercooked locally harvested crabs, and in Texas it was unknown.[3] All toxigenic *V. cholerae* 01 isolates in Louisiana and Texas have been of biotype El Tor and serotype Inaba, strongly hemolytic, and of a unique phage type, leading to the suggestion that the organism is endemic along the Gulf Coast of the United States.[2]

Although only a few *V. cholerae* 01 infections were detected in the United States, the persistence of the pathogen along the Gulf Coast indicated that there was a constant threat of potentially explosive water-related outbreaks of cholera if public or private water supplies became contaminated. In the fall of 1981, our investigation of a single case of cholera detected a cholera outbreak caused by a contaminated drinking-water system aboard a floating oil rig in Texas. The outbreak proved to be the largest involving cholera in the United States in over a century. The investigation showed that even typical cases of cholera are easily misdiagnosed, serologic methods are useful in investigating recent toxigenic *V. cholerae* 01 infections, household contacts of cases did not become infected, and large common-source outbreaks of cholera can occur in the United States.

CASE REPORT

On September 20, 1981, a 23-year-old man from Louisiana had profuse watery diarrhea, abdominal cramps, nausea, and vomiting. By the fourth day of illness, he was extremely weak and had orthostatic syncopal episodes. Nonetheless, he did not seek medical attention until eight days after onset. A stool specimen was obtained for culture at that time. He was not hospitalized and recovered at home on symptomatic therapy. *V. cholerae* was isolated from the stool, identified by the Louisiana health department laboratory as *V. cholerae* 01 serotype Inaba, and subsequently determined at the Centers for Disease Control to be of the El Tor biotype.

Preliminary investigation by the Louisiana and Texas health departments found that the illness began five days after the patient began a seven-day tour of duty aboard a barge-type oil rig on a marshland bayou south of Port Arthur, Texas. Two crews lived on the rig on alternate weeks, and specialized workers made brief visits to the rig. The index patient said that most other employees who worked during his tour of duty (September 13 to 22) had also had a recent diarrheal illness, so a full investigation was begun.

METHODS

All persons who had visited or lived on the rig between September 14 and 28, 1981 (one week before and one week after the most likely date of common-source exposure as detailed below) were identified and interviewed. Stool or rectal swab and blood specimens were obtained from all who consented. Household contacts of rig workers who were subsequently determined to have had a recent *V. cholerae* 01 infection were interviewed in late October, and stool or rectal swab and blood specimens were obtained from all who consented.

The rig's two water systems (drinking water and untreated bayou water), sewage system, and galley were inspected. Fluorescein dye was used to trace sewage effluent. Galley personnel were interviewed regarding food sources and handling. Samples of frozen seafood and drinking water were obtained. On October 4 and 14, Moore swabs[4] were placed for 24 hours or more in the bayou surrounding the rig, the sewage effluent, the sewage-treatment tanks, the ballast-intake port, and the drinking-water reservoir.

Rectal swabs were transported in Cary-Blair medium and cultured for *V. cholerae* on thiosulfate citrate bile salts sucrose (TCBS) agar; stool specimens were plated directly on TCBS. Moore swabs were transported and enriched in alkaline peptone broth and cultured for *V. cholerae* on TCBS agar.[5] The isolate from the index case was tested at the Centers for Disease Control for toxin production by enzyme-linked immunosorbent assay (ELISA)[6] and Y-1 adrenal-cell assay.[7] Dr. John Lee of the Maidstone (England) Public Health Laboratory determined hemolysin production[8] and phage type.[9] Dr. James Kaper of the University of Maryland performed molecular genetic analysis with a probe to detect the genes responsible for production of heat-labile toxin.[10] The Centers for Disease Control measured serum vibriocidal antibodies[11] and antitoxic IgG antibodies in duplicate by microtiter ELISA,[12] using Calbiochem-Cholerogen and Cholerogen supplied by Dr. M. M. Levine.

An oil rig worker was considered to have had a recent *V. cholerae* 01 infection if the organism was isolated from his stool or if assays of his serum met the serologic criteria established by Clements et al. in studies of volunteers:[13] a reciprocal Inaba vibriocidal antibody titer of 320 or more and an antitoxin level of IgG by ELISA at least four

From the Centers for Disease Control, Atlanta; the Louisiana Department of Health and Human Resources, New Orleans; the Texas Department of Health, Austin; and the Environmental Protection Agency, Cincinnati. Address reprint requests to Dr. Johnston at the Centers for Disease Control, Epidemiology Program Office, Field Services Division, 1600 Clifton Rd., N.E., Atlanta, GA 30333.

The use of trade names in this paper is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services or the U.S. Public Health Service.

times greater than that of the negative control serum (P/N≥4) in both ELISAs. A rig worker was considered not to have been recently infected with *V. cholerae* 01 if his Inaba vibriocidal antibody titer was less than 1:160, if both antitoxic antibody assays yielded a result of P/N<4, and if he had not had diarrhea (three or more liquid stools in 24 hours) between September 14 and 28. Those falling into neither category were excluded from all analyses.

Results

Epidemiologic Investigation

Sixty-six of the 71 men (30 members of the rig staff and 41 visiting workers) known to have been aboard the rig between September 14 and 28 were located and interviewed. Stools and rectal swabs for culture (from 59 persons) and serum samples (from 62 persons) were obtained between October 4 and November 20. No vibrios were isolated from the stools or rectal swabs. By our definitions, 16 of 62 men (26 per cent) were infected, 29 (47 per cent) were not infected, and 17 (27 per cent) were excluded.

The 16 infected men had a mean age of 26.2 years (range, 19 to 42) and lived in Louisiana (13 men), Texas (1), Mississippi (1), and Alabama (1). Nine were rig employees and seven were service personnel. Only one had been asymptomatic; 15 had had symptoms compatible with cholera, including diarrhea (100 per cent), abdominal cramps (53 per cent), nausea (40 per cent), and vomiting (27 per cent). Eight had more than one liquid stool each hour for more than 24 hours. Three (20 per cent) of the 15 persons with symptoms sought medical attention, and two of these were hospitalized and given intravenous fluids, although cholera was not suspected. The median duration of illness was 5 days (range, 1 to 12).

All cases occurred in workers who were on the rig at least once during the period September 15 to 22. The onsets of illness occurred between September 20 and 25, with 87 per cent occurring on September 22 (six men) or 23 (seven men) (Fig. 1). All infected workers were on the rig on September 21, whereas at least three were off the rig on all the other days. Only for that day was presence on the rig associated with infection independently of presence on other days (P = 0.02, Mantel–Haenszel test).

Only one of four meals (supper) served on September 21 was associated with *V. cholerae* 01 infection (P = 0.01, Fisher's two-tailed exact test); all 14 infected persons with onset of illness after that date and the asymptomatic infected person ate this meal. Fourteen of these 15 infected persons and two of five uninfected persons recalled eating rice and gravy at supper (P = 0.03, Fisher's two-tailed exact test). The role of drinking water as a risk factor could not be evaluated because everyone on the rig drank water from the drinking-water system. Potential risk factors that were not found to be significantly associated with *V. cholerae* 01 infection included the amount of water consumed, rig duties, work shifts, antacid use, seafood consumption, gastric surgery, having blood group O, and vaccination status (Table 1).

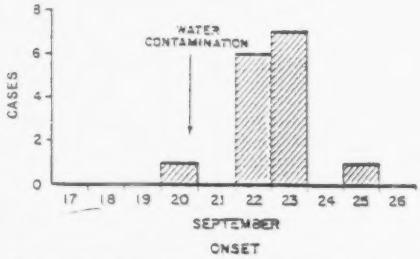

Figure 1. *Vibrio cholerae* 01 Infections According to Date of Onset of Diarrhea, Texas Oil Rig, September 1981.

Environmental Investigation

The nonpotable salt-water system pumped water for drilling and flushing from the bayou at 28,124 kg per square meter (40 lb per square inch) (Fig. 2). Fresh drinking water was pumped from a tank at 14,062 kg per square meter (20 lb per square inch) to bathrooms and galley fixtures. One commode was connected to both systems through two valves to allow use either on location (bayou water) or when under tow (fresh water); ordinarily, only one valve was open at a time. Shortly before noon on September 21, after many workers had complained that morning that the drinking water tasted salty, both valves to this commode were discovered to be open. The valves had been inadvertently opened simultaneously late in the evening of September 20, establishing a cross-connection. Because saline bayou water was under higher pressure, it entered the drinking-water lines. A check valve had prevented contamination of the drinking-water tank, so when the error was discovered, the fresh-water valve was closed, and the fresh-water system was purged for one hour. Drinking water obtained 13 and 23 days later had no detectable free chlorine, and cultures yielded many noncoliform bacteria.

Sewage from the rig was discharged into the bayou approximately 30 m (100 ft) upstream of the ballast-intake port (Fig. 2). Fluorescein dye flushed down a commode appeared in the sewage effluent and flowed along the side of the barge directly to the ballast-intake port.

Investigation of food-handling procedures found that dry rice was routinely boiled at 10 a.m., rinsed with cold water from the galley drinking-water tap after cooking, and then held in warming pans for the rest of the day to be served at both lunch and supper. The temperatures of food in the warmers during the investigation on October 13 ranged from 21 to 58°C; to keep the food moist during the eight hours between preparation and supper, temperatures were intentionally kept low, and tap water was added frequently. The cook recalled using the salty water on September 21 to prepare food and to reconstitute drinks.

Laboratory investigation

The *V. cholerae* 01 El Tor Inaba strain from the index patient was toxigenic and strongly hemolytic. The phage-sensitivity pattern was identical to the unique pattern demonstrated in previous U.S. isolates.[2] The strain's genetic material encoding cholera toxin formed the same distinctive pattern on agarose-gel electrophoresis as had that of previous U.S. isolates.[14] *V. cholerae* 01 was not recovered from the stools of any other ill or well persons obtained from two to eight weeks after the onset of illness in the index patient.

None of the 56 household contacts of the 16 infected persons had a diarrheal illness within one week after the infected persons returned home. Serum specimens from 43 such contacts did not have antibody titers that met the serologic definition of a recent infection. *V. cholerae* 01 was not isolated from the stool of 41 healthy contacts or from water, sewage, food, or the environment.

Discussion

Although the source of infection for the index patient was unknown, it was clearly not the result of recent importation of *V. cholerae* 01, because the organism isolated from the patient's stool was identical to all toxigenic *V. cholerae* 01 strains that have been isolated from domestically acquired cases and from the environment in the United States since 1973.[2,14,15] The ensuing outbreak resulted from a chain of preventable errors that began with the discharge of the index patient's stools in sewage from the rig into the bayou. Then, as shown by the dye study, bayou water containing sewage flowed to the intake for the salt-water system. A coincidental cross-connection on September 20 and 21 permitted contaminated water from the high-pressure salt-water system to enter the low-pressure drinking-water system. Although some workers may have been infected by drinking the water, we believe that rice contaminated by the water was probably the principal or only vehicle of transmission. First of all, infection was associated with eating supper on September 21 and with eating rice and gravy at that meal; all but one of the infected persons recalled eating the rice and gravy. Secondly, the infective dose of *V. cholerae* 01 biotype El Tor is relatively high,[16] and the rice was more likely than the water to have contained an infective dose. The organisms from the index patient's stools must have been greatly diluted by the time they reached the drinking-water spigots. However, the cooked rice was rinsed with the contaminated drinking water and held for most of the day on September 21 at temperatures that permit rapid multiplication of El Tor *V. cholerae* 01 in cooked rice.[17] Also, volunteer studies with the organism have shown that the infective dose is even higher when it is given with water than when it is given with food.[18]

Two observations suggest that the infecting dose in this outbreak was relatively high. The infection rate was high, with 14 (88 per cent) of 16 persons (excluding the index patient) who ate rice and gravy at supper on September 21 having serologic evidence of recent infection. Also, the proportion of infected persons who had symptoms was high: 14 (93 per cent) of the 15

Table 1. Evaluation of Potential Risk Factors for *V. cholerae* 01 Infection among Persons Present on the Oil Rig on September 21.*

Risk Factor	Infection Status†		P Value*
	Infected‡	Not Infected§	
Drank ≥6 glasses of water/day on rig	7/14	3/7	0.644
Ate seafood during previous 7 days	10/14	8/9	0.611
Worked day shift	12/15	7/9	1.000
Were service personnel	4/15	5/9	0.384
Never received vaccine	11/13	6/9	1.000
Had blood group O	7/13	2/7	0.374
Had gastric surgery	0/15	0/9	1.000
Used antacids	5/15	3/9	1.000

*Excludes index case, who had onset before September 21.

†Defined in text.

‡Number of infected persons with risk factor/number of infected persons for whom data were available.

§Number of uninfected persons with risk factor/number of uninfected persons for whom data were available.

*By Fisher's (modified exact) test.

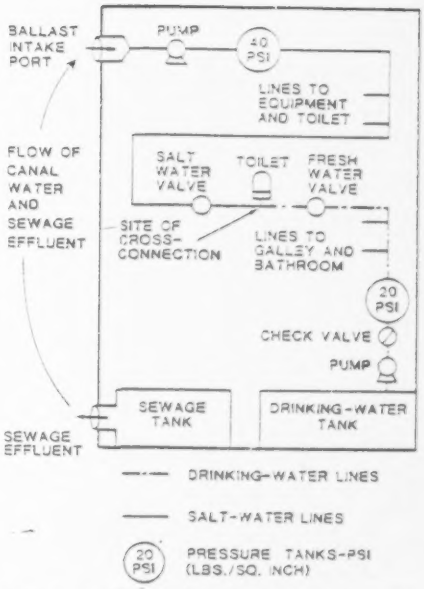

Figure 2. Fresh-Water and Salt-Water Systems and Sewage Discharge on Oil-Rig Barge.

persons infected when the cross-connection occurred had symptoms, giving a case-to-infection ratio of 1:1.1, as compared with ratios of 1:1.4 for the 1978 Louisiana infections[2] and 1:4.9 for infected persons in an El Tor *V. cholerae* 01 epidemic in Bangladesh.[18] Both factors — high infection rate and high proportion of symptomatic infections — have been associated in volunteer studies with a relatively high infecting dose.[16]

Cholera was not suspected in any of the cases; the isolation of *V. cholerae* 01 from a stool culture was unexpected, and without it the outbreak would never have been identified. Many more domestically acquired toxigenic *V. cholerae* 01 infections may have occurred than the 30 recorded since 1973.[1,2,15]

On September 22, the 16 infected men returned to their homes and 56 family contacts, but none of the contacts subsequently had a diarrheal illness, and none of the 43 contacts tested had serologic evidence of a subclinical *V. cholerae* 01 infection. Similarly, the 1978 Louisiana investigation of 44 close contacts of 11 infected persons found no evidence of secondary spread.[19] In countries with a high incidence of cholera, family members of persons with cholera are frequently found to be infected, but the source of their infections is unknown and controversial[20]; like the ill person, they may be infected by food or drink contaminated outside the home, or the case may have infected them through direct contact or indirectly by contaminating their food or water. The evidence so far suggests that transmission within households occurs rarely if ever in the United States.

Since the cluster of diarrheal illnesses in oil-rig workers was not recognized until more than two weeks after the onset in the index patient, stool cultures were not useful in identifying infected persons; thus, we had to rely on serologic assays. Recent studies have documented the specificity of assays for vibriocidal and antitoxic antibodies in convalescent-phase serum specimens in identifying infections with *V. cholerae* El Tor Inaba.[13,19] To minimize the likelihood of incorrectly identifying uninfected persons in the epidemiologic analysis as cases, we used a highly specific serologic definition of recent *V. cholerae* 01 infection.[13] We also used specific criteria for uninfected persons that left 27 per cent of the rig workers in an intermediate category that was not included in the analysis. Although there may have been some infected persons in the excluded category, the outbreak can be understood without them, and this investigation demonstrates the usefulness of serologic methods in the investigation of recent *V. cholerae* 01 infections.

The cholera outbreak resulted from a combination of factors, including the occurrence of sporadic toxigenic *V. cholerae* 01 infections along the Gulf Coast, failure to treat sewage adequately, the presence of a cross-connection, failure to chlorinate drinking water, and failure to maintain cooked food at temperatures high or low enough to prevent multiplication of *V. cholerae*. As long as toxigenic *V. cholerae* 01 persists in the United States, the threat of large community outbreaks of water-related or foodborne infection persists. Such outbreaks can be prevented, and are apparently being prevented thus far, through the installation and proper maintenance of water and sewage systems and by the use of elementary precautions in food handling.

We are indebted to the patients' private physicians and personnel of the state and local health departments of Alabama, Louisiana, Mississippi, and Texas for assistance in the investigation; to John V. Lee, Ph.D., for phage typing; to Donna D. Cruce, M.S., for antitoxic antibody testing; to Wallace E. DeWitt, M.S., M.P.H., for vibriocidal antibody testing; and to James Kaper, Ph.D., for molecular genetic analysis.

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COMPUTED TOMOGRAPHY OF THE CENTRAL NERVOUS SYSTEM

A symposium entitled "Update on Computed Tomography of the Central Nervous System" will be held at the Acapulco Princess Hotel in Acapulco, Mexico, February 25-March 2. The fee is $385.

Contact the Program Coordinator, Office of Continuing Education, Upstate Medical Ctr., State University of New York, 750 E. Adams St., Syracuse, NY 13210; or call (315) 473-4104.

PEDIATRIC DERMATOLOGY

The Ninth Annual Pediatric Dermatology Seminar will be held at the Carillon Beach Hotel in Miami Beach, Fla., February 25-28. The fee is $190.

Contact Dr. Guinter Kahn, 16800 N.W. 2d Ave., Miami, FL 33169; or call (305) 652-6600.

CLINICAL GENETICS

A symposium entitled "Clinical Genetics for Primary Care Physicians" will be held at the University of Wisconsin in Madison on February 26 and 27. The fee is $150.

Contact Sarah Z. Aniakson, Continuing Medical Education, 6638 WARF Bldg., 610 Walnut St., Madison, WI 53706; or call (608) 263-2856.

MOTOR SKILLS

A seminar entitled "Ender Nailing: A Motor Skills Course with Hans Ender, M.D." will be held at the University of California–Davis Medical Center in Sacramento on February 26 and 27. The fee is $200.

Contact Ardi Nieuwenger, Office of Continuing Medical Education, School of Medicine, University of California, Davis, CA 95616; or call (916) 752-0328.

CLINICAL SYMPOSIUM

St. Jude Children's Research Hospital will hold its Sixteenth Annual Clinical Symposium on February 26 and 27 in Memphis. Registration is limited. There is no fee.

Contact the Associate Director for Clinical Research, St. Jude Children's Research Hospital, Box 318, Memphis, TN 38101; or call (901) 522-0300.

CARDIOLOGY

A seminar entitled "Acute MI—The First Six Hours" will be held at the Tampa Marriott Hotel in Tampa, Fla., on February 26 and 27.

Contact the American Heart Assoc., Hillsborough County Chapter, P.O. Box 4833, Tampa, FL 33677; or call (813) 253-0023.

CANCER AND VITAMINS

The First International Symposium on the Modulation and Mediation of Cancer by Vitamins will be held at the University of Arizona in Tucson, February 23-26.

Contact Mary Humphrey, University of Arizona Cancer Ctr., Tucson, AZ 85724; or call (602) 626-6044.

OCCUPATIONAL SAFETY AND HEALTH

The Occupational Safety and Health Winter Institute will be held in Daytona Beach, Fla., February 22-26.

Contact Larry D. Hyde, Occupational Safety and Health Educational Resource Ctr., University of North Carolina, 109 Conner Dr., Suite 1101, The Professional Village (346A), Chapel Hill, NC 27514; or call (919) 962-2101.

CORRECTION

"Recurrent Genital Herpes: Reinfection or Reactivation" (vol. 305 [Nov. 26] 1981) In the reply by Corey, Holmes and Reeves on page 1547, the next to the last sentence in the second paragraph should have read as follows: "New sexual partners were reported by 16 per cent of patients who did not have recurrences, as compared with 14 per cent of those who did (P>0.05)." We regret the error.

SPECIAL REPORT

EPIDEMIOLOGIC ASPECTS OF THE CURRENT OUTBREAK OF KAPOSI'S SARCOMA AND OPPORTUNISTIC INFECTIONS*

SINCE June 1981, the Centers for Disease Control (CDC) has learned of an increased occurrence of Kaposi's sarcoma, *Pneumocystis carinii* pneumonia, and other serious opportunistic infections concentrated among homosexual men in the United States. After receiving the initial reports,[1-4] the CDC formed a task force to undertake surveillance for these disorders and conduct epidemiologic and laboratory investigations. This report describes these surveillance activities and summarizes current knowledge of the epidemiologic aspects of this outbreak.

SURVEILLANCE AND REPORTING METHODS

Case-report forms were completed for biopsy-proved cases of Kaposi's sarcoma in persons under 50 years of age without underlying immunosuppressive disease or therapy. Reports were also completed on all life-threatening or fatal opportunistic infections documented by biopsy or culture from patients with no known underlying illness or history of immunosuppressive therapy. The cases summarized below fit this case definition and were reported to the CDC between June 1 and November 10, 1981. For each case reported, an epidemiologist interviewed the attending physician by telephone and recorded both demographic data (age, race, marital status, sexual preference, and residence) and clinical information (illnesses, dates and methods of diagnoses, presence and dates of onset of signs and symptoms, history of predisposing conditions, and outcome of therapy).

To examine the incidence of Kaposi's sarcoma before 1980, we contacted epidemiologists associated with selected tumor registries in New York, California, and Georgia. Information was obtained from the National Cancer Institute Surveillance Epidemiology and End Results registries in the San Francisco Bay and Atlanta areas through 1979. Additional data were provided by the New York State Tumor Registry, the New York University Coordinated Cancer Registry, and the University of California Tumor Registry.

Task-force epidemiologists or officers of the CDC's Epidemic Intelligence Service actively surveyed physicians in 15 major metropolitan areas in the United States by letter and telephone to inquire about Kaposi's sarcoma in persons under 50 years of age or opportunistic infections in patients without a known predisposing factor since January 1979. At a minimum, heads of infectious disease, dermatology, oncology, and pathology departments from all major hospitals in these communities were contacted. In several of the metropolitan areas, physicians who served large numbers of homosexual men were known by the staff of clinics for sexually transmitted diseases or by other healthcare personnel. When we obtained

*Reprint of the Centers for Disease Control Task Force on Kaposi's Sarcoma and Opportunistic Infections.

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the names of these physicians, we attempted to contact them as well. In early August 1981, a formal request was made to all state health departments to notify the CDC of illnesses suspected of fitting the case definition. Several of these agencies have begun active surveillance.

Since November 1967, the CDC has been the sole United States supplier of pentamidine isethionate for the therapy of *P. carinii* pneumonia. Although trimethoprim-sulfamethoxazole has replaced pentamidine as the initial therapeutic agent, many patients still require pentamidine therapy. Routinely collected data on the patients' underlying conditions were reviewed from January 1, 1976, to November 10, 1981.

Results

There were 159 documented cases of Kaposi's sarcoma, *P. carinii* pneumonia, and other serious opportunistic infections reported to the CDC between June 1 and November 10, 1981 (Table 1). Sixteen additional cases have been excluded because of possible predisposing illnesses or systemic immunosuppressive therapy. The majority of the cases were detected through follow-up of reports to the CDC and requests for pentamidine or through active surveillance in New York City and California. Active surveillance in 15 metropolitan areas outside New York and California revealed no cases fitting the case definition that had not been reported previously. Searches of available tumor registries in New York, California, and Georgia indicated that Kaposi's sarcoma was an uncommonly reported cancer in these areas, rarely occurring in persons under the age of 50. No increased incidence of Kaposi's sarcoma was noted through 1979. From January 1, 1976, through June 1980 there was one questionable request to the CDC for pentamidine isethionate to treat an adult without an underlying disorder. From July through December 1980, there were nine such requests, all of which are included in this report. At this writing in 1981, 42 requests for pentamidine have been filled for men without underlying disorders. This represents 37 per cent of all the requests for pentamidine for the treatment of adults in the United States in 1981 (42 of 114 requests).

Table 1. Outcome of Cases of Kaposi's Sarcoma, *Pneumocystis carinii* Pneumonia, and Other Serious Opportunistic Infections Reported to the Centers for Disease Control from June 1 to November 10, 1981.

Disease	No. Alive	No. Dead	Total No.	% Dead
Kaposi's sarcoma	62	11	73	15.1
P. carinii pneumonia	24	37	61	60.7
Both	8	7	15	46.7
Other infections	4	6	10	60.0
Total	98	61	159	38.4

The high mortality rate among the patients with *P. carinii* pneumonia accurately reflects the severity of their illness as well as the general debilitation of many of these men. Among 76 men with *P. carinii* pneumonia, 30 (39.5 per cent) died of the initial infection. Of 46 survivors, 13 subsequently died, including four of the eight who had recurrent *P. carinii* pneumonia. The remainder of the subsequent deaths were attributed to Kaposi's sarcoma or to other opportunistic infections. Forty-three of 76 initial episodes of *P. carinii* pneumonia and all eight recurrent episodes required therapy with pentamidine. Among the 15 patients with both Kaposi's sarcoma and *P. carinii* pneumonia, Kaposi's sarcoma was diagnosed first in six, *P. carinii* pneumonia was diagnosed first in six, and the diagnoses were made during the same month in the remaining three. In some patients, the diagnosis of *P. carinii* pneumonia preceded that of Kaposi's sarcoma by six months or longer.

The 10 patients with other serious opportunistic infections included four with progressive or disseminated herpes simplex virus infections, three with toxoplasmosis of the central nervous system, one with cryptococcal meningitis, and two with disseminated cytomegalovirus infection. Over 40 per cent of the remaining 149 patients with Kaposi's sarcoma, *P. carinii* pneumonia, or both were reported to have other serious opportunistic infections, including 10 of 73 patients with Kaposi's sarcoma alone, 42 of 61 with *P. carinii* pneumonia alone, and 12 of 15 with both Kaposi's sarcoma and *P. carinii* pneumonia. Patients with *P. carinii* pneumonia alone were significantly more likely to be reported as having opportunistic infections than were those with Kaposi's sarcoma alone ($P<0.00001$ by Fisher's exact test). These infections include 24 clinically important cytomegalovirus infections confirmed by virus isolation or biopsy, six progressive or disseminated herpes simplex virus infections, five cryptococcal meningitis infections, 12 invasive gastrointestinal candida infections, seven disseminated mycobacterial infections (two with *Mycobacterium tuberculosis* and five with other species), and 10 other infections. These data are incomplete; they reflect only the coexisting infections that were well documented and were reported to the CDC.

Data generated by CDC surveillance indicate a secular increase in the number of reported cases by month of onset, month of confirmed diagnosis, and month of death (Fig. 1). The patients with both Kaposi's sarcoma and *P. carinii* pneumonia are represented in the diagnosis curve according to their first diagnosed illness. A considerable delay occurred between the initial onset of symptoms and diagnosis in both the Kaposi's sarcoma and *P. carinii* pneumonia groups. For Kaposi's sarcoma, the time from the onset of symptoms to diagnosis ranged from one to 30 months (median, 5.5); for *P. carinii* pneumonia, the range was one to 18 months (median, 3.5). Fifty-three per cent of the patients (84 of 159) had the onset of their illness after January 1981, whereas 88 per cent became ill after January 1980. Seventy-five per cent of the cases (119 of 159) were diagnosed during 1981, and 74 per cent of the deaths (45 of 61) occurred during 1981. The decline in the onset curve probably reflects the average three to six-month delay from the onset of symptoms to diagnosis. Late declines in the diagnosis and death curves may represent delay in reports to the CDC.

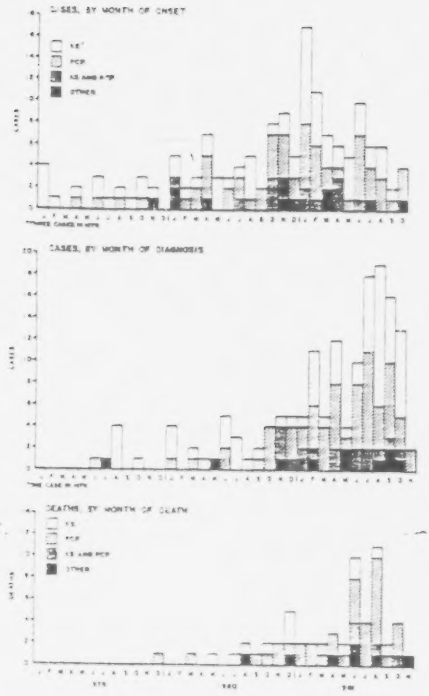

Figure 1. Incidence of Kaposi's Sarcoma (KS), *Pneumocystis carinii* Pneumonia (PCP), and Other Opportunistic Infections in the United States, 1979–1981.

Table 2 shows selected signs or symptoms in patients with Kaposi's sarcoma, *P. carinii* pneumonia, or both. The frequency of lymphadenopathy, fever, and weight loss in the group with Kaposi's sarcoma attests to the often generalized nature of the disease. In each group, many patients were reported to have had a prodromal illness lasting for weeks to months and characterized by weight loss, lymphadenopathy, fever, and diarrhea. This prodrome was more consistently present and severe in patients with *P. carinii* pneumonia.

All but one of the 159 reported cases occurred in men. Ninety-two per cent of these men (136 of 148) were reported to be homosexual or bisexual when sexual preference was known (Table 3). Patients' ages ranged from 15 to 57 years, with a median of 35. Eighty-two per cent of the men were in the 25 to 44-year-old group. Seventy per cent of the men were white (not Hispanic), 16 per cent Hispanic, and 14 per cent black. There were no significant differences in age or race between the disease categories.

Although cases were reported from 15 states, the District of Columbia, and two foreign countries, over three fourths of the patients were living in New York City, San Francisco, or Los Angeles at the time of diagnosis (Table 4). Since over half the cases were reported from the New York City metropolitan area, we compared the residence of patients whose onset of symptoms was early with that of patients whose symptoms began later in the epidemic. There was no significant difference in residence in metropolitan New York City between patients whose symptoms began before January 1, 1980 (17 of 24, 70.8 per cent), and those whose symptoms began after that date (70 of 135, 51.9 per cent) ($P>0.10$).

Discussion

The current outbreak of Kaposi's sarcoma, *P. carinii* pneumonia, and other opportunistic infections is highly unusual. Kaposi's sarcoma is a rare, malignant neoplasm, predominantly affecting elderly men and seldom causing death.[1] Although precise rates are unavailable, the annual incidence in the United States has been estimated to be 0.021 to 0.061 per 100,000 population.[6,7] In one large series, Safai et al. reported a 3:1 male-to-female ratio and a mean age of 63 years among patients with Kaposi's sarcoma.[8] Precise incidence estimates specific for sexual preference are not available, because the number of homosexual men living in cities where Kaposi's sarcoma has occurred is unknown. Nonetheless, the highly localized occurrence of 88 cases among men under 50 suggests at least a 100-fold increase in age-specific risk among homosexual men in the cities reporting cases, as compared with previous estimates of incidence. Although *P. carinii* causes several hundred cases of severe pneumonia in the United States annually, these cases were previously found almost exclusively in patients whose immunity was severely compromised by underlying disease, immunosuppressive therapy, or both.[9,10] After reviewing requests for pentamidine in the period from 1967 to 1970, when pentamidine was the only recommended treatment for *P. carinii* pneumonia, Walzer et al. discovered only one case of confirmed *P. carinii*

Table 2. Signs or Symptoms Reported in Patients with Kaposi's Sarcoma, *P. carinii* Pneumonia, or Both.

Sign or Symptom	% with Sign or Symptom		
	Kaposi's Sarcoma (n = 77)	*P. carinii* Pneumonia (n = 51)	Both (n = 15)
Skin or mucosal lesions	90.9	9.8	86.7
Lymphadenopathy	49.6	25.5	40.0
Fever	53.0	53.4	86.7
Weight loss	7.2	7.8	93.3
Diarrhea	4.5	14.8	40.0
Dyspnea	5.2	88.2	100.0
Oral thrush	4.5	4.1	26.7

Table 3. Sexual Preference of Men with Kaposi's Sarcoma, *P. carinii* Pneumonia, or Other Serious Opportunistic Infections Reported to the CDC.

Disease	Homosexual or Bisexual	Heterosexual	Unknown	Total
	no. of patients			
Kaposi's sarcoma	66	2	5	73
P. carinii pneumonia	49	9	3	61
Both	15	—	—	15
Other infections	6	1	2	9
Total	136	12	10	158

pneumonia in a patient without a known underlying condition.[7] Our recent review of requests for pentamidine confirms the rarity with which this disease has been previously diagnosed among adults without underlying conditions.

The simultaneous occurrence of Kaposi's sarcoma and *P. carinii* pneumonia among homosexual men of the same age and racial groups who live in the same geographic areas strongly suggests the occurrence of a single epidemic of underlying immunosuppression in these men. As noted previously, *P. carinii* pneumonia is typically a disease of immunocompromised patients. The incidence of Kaposi's sarcoma is greatly increased among recipients of renal allografts[9-12] and others receiving immunosuppressive therapy.[13-15] The natural history of the currently reported cases of Kaposi's sarcoma among these homosexual men is similar to that among transplant recipients, in that it more frequently involves the visceral organs and has a poor prognosis.[12,15a] When Kaposi's sarcoma occurs in allograft recipients, the tumor often spontaneously regresses with cessation or reduction of immunosuppressive therapy.[10,12]

The high mortality rate among young men with these disorders indicates a serious public-health problem. The magnitude of the current epidemic is understated by the data presented on biopsy-confirmed cases of Kaposi's sarcoma and *P. carinii* pneumonia. Young men presenting with interstitial pneumonia without an underlying disorder may not have received a definite diagnosis or specific therapy for *P. carinii* pneumonia; others may have received empirical therapy with trimethoprim-sulfamethoxazole. The rather benign, inconspicuous appearance of many of the skin and mucous-membrane lesions of Kaposi's sarcoma in these men suggests that this disease may also be underdiagnosed.

If immunosuppression is the underlying cause of these conditions, then Kaposi's sarcoma and *P. carinii* pneumonia may represent the "tip of the iceberg" including other conditions that are less readily recognized or have longer latency periods. While investigating this outbreak, we have received numerous physicians' reports on young homosexual men with nonfatal opportunistic infections, unexplained prolonged lymphadenopathy, or lymphoreticular neoplasias. Although sporadic case reports of lymphoreticular neoplasms are difficult to interpret, these reports are a cause for concern, since Safai et al. have noted that Kaposi's sarcoma is frequently associated with other primary tumors.[6] In their series, 37 per cent of the patients with Kaposi's sarcoma had other primary cancers; specifically, the authors noted a 20-fold increase in lymphoreticular neoplasms. Clinicians caring for homosexual men should be alert for signs and symptoms of other infections and neoplasms associated with immunodepression, in addition to Kaposi's sarcoma and *P. carinii* pneumonia.

Although it is possible that the concentration of reported Kaposi's sarcoma, *P. carinii* pneumonia, and other opportunistic infections among homosexual men living in New York and California represents a reporting art fact, we consider this possibility unlikely. Most of the reported cases were from tertiary-care facilities — the same type of facility included in our survey of 18 cities. If the geographic clustering of cases is in fact real, it suggests that risk factors for these diseases are not randomly distributed in the homosexual community.

Giraldo et al. first suggested an association between Kaposi's sarcoma and cytomegalovirus infection when they isolated cytomegalovirus from one of eight tissue-culture cell lines from patients with Kaposi's sarcoma.[16] They subsequently demonstrated a serologic association of Kaposi's sarcoma with cytomegalovirus in American and European patients, but not in African patients.[17,18] Finally, they found that three of eight tumor-biopsy samples were positive for cytomegalovirus DNA by DNA-DNA reassociation kinetics.[19] Cytomegalovirus is often associated with *P. carinii* pneumonia in immunosuppressed hosts, especially among renal-transplant recipients.[20] Furthermore, cytomegalovirus induces transient abnormalities in cellular immune function in otherwise healthy persons.[21] Since serologic evidence of cytomegalovirus infection and active shedding of cytomegalovirus in the urine have been shown to be more common among homosexual men than among heterosexual men of the same age,[22] further investigation of cytomegalovirus in the cases reported here is important. On the other hand, cytomegalovirus infection is very common in the United States and has not been

Table 4. Metropolitan Area of Residence at the Time of Diagnosis in Patients with Kaposi's Sarcoma, *P. carinii* Pneumonia, or Other Serious Opportunistic Infections.

Disease	New York City	San Francisco	Los Angeles	Other	Total
	no. of patients				
Kaposi's sarcoma	40	12	4	[illegible]	73
P. carinii pneumonia	34	5	[illegible]	[illegible]	61
Both	7	2	[illegible]	4	15
Other infections	6	0	[illegible]	[illegible]	10
Total	87	19	[illegible]	[illegible]	159

shown to have such devastating effects on other populations. Since reactivation of cytomegalovirus is common among immunocompromised hosts, the role of this virus will not be easily defined in this outbreak.

In a recently published study, Masur et al. described 11 cases of *P. carinii* pneumonia in immunocompromised men without underlying disorders or therapy.[22] Although six of these men were homosexual, five others were reported to be drug abusers (using heroin, methadone, alcohol, or cocaine). Opiate addiction has been associated with alterations in cellular immune status in vitro,[24,25] but it had not previously been associated with *P. carinii* pneumonia.

The interest in a causal role for inhalants containing amyl nitrite or isobutyl nitrite or both ("poppers," as they are commonly called) stems from the hypothesis that they are used as sexual stimulants or recreational drugs by some homosexual men. In a recent survey of 420 men attending clinics for sexually transmitted diseases in New York, San Francisco, and Atlanta, we found that 86.4 per cent of homosexual and bisexual men (242 of 279), as compared with 14.9 per cent of heterosexual men (21 of 141), reported the use of nitrite inhalants within five years. However, the frequency of nitrite use was closely correlated with the number of sexual partners reported during the previous month. This suggests that the use of nitrites may be associated with other hypothetical etiologic factors, such as sexually transmitted infections, antimicrobial agents for treatment or prevention of these infections, types of sexual behavior, attendance at places where partners are encountered, and perhaps the use of other drugs. Studies undertaken to determine what role (if any) nitrites may have as risk factors for Kaposi's sarcoma and *P. carinii* pneumonia and immunosuppression must carefully consider the confounding effects of these other variables.

In collaboration with investigators in New York, California, and Georgia, the CDC task force is completing a national case-control study to identify risk factors for Kaposi's sarcoma and *P. carinii* pneumonia among homosexual men. We are continuing surveillance for these disorders and conducting other clinical and laboratory investigations.

This sudden, highly focal occurrence of Kaposi's sarcoma and *P. carinii* pneumonia provides an opportunity to investigate the relations among life style, environment, host immune responses, and oncogenesis and suggests the potential for prevention of these diseases if risk factors can be identified.

Note added in proof: Between November 10, 1981, and January 13, 1982, 57 additional cases were reported, bringing the total to 216 (89 cases of Kaposi's sarcoma, 91 of *P. carinii* pneumonia, 18 of both, and 18 of other infections). At least 88 (40.8 per cent) of these patients have died.

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AN OUTBREAK OF LEGIONNAIRES' DISEASE ASSOCIATED WITH A CONTAMINATED AIR-CONDITIONING COOLING TOWER

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Abstract In August and September 1978, an outbreak of Legionnaires' disease occurred in Memphis, Tennessee. Of the 44 ill, 39 had been either patients, employees, visitors, or passers-by at one Memphis hospital (Hospital A) during the 10 days before. Assuming an incubation period of between two and 10 days, the onset of cases correlated precisely with the use of Hospital A's auxiliary air-conditioning cooling tower. *L. pneumophila* was recovered from two samples of water from the tower.

Infection appeared to have occurred both outside and within the hospital. A significant association was demonstrated between acquisition of Legionnaires' disease and prior hospitalization in those areas of Hospital A that received ventilating air from air intakes near the auxiliary cooling tower. Tracer-smoke studies indicated that contaminated aerosols from the tower could easily reach these air intakes, as well as the street below, where four passers-by had been before they contracted Legionnaires' disease.

This represents a common-source outbreak in which the source of *L. pneumophila* infection and airborne transmission were identified. (N Engl J Med 302:365-370, 1980)

SINCE the dramatic summer of 1976, when Legionnaires' disease was first recognized,[1,2] investigators have attempted to discover an environmental source of the causative bacillus and to elucidate the agent's mode of transmission. During an epidemic investigation in Bloomington, Indiana, in mid-1978, the agent was recovered from water in an air-conditioning cooling tower and a nearby stream.[3] However, because the air-cooling system was not in operation during parts of the outbreak, these isolates could not be epidemiologically related to the cases.

In August and September 1978, an outbreak of Legionnaires' disease occurred in Memphis, Tennessee, that was focused on one hospital. The ensuing investigation revealed the source of the agent to be a contaminated air-conditioning cooling tower and associated this source with the occurrence of disease.

BACKGROUND

Memphis–Shelby County has a population of 750,000. Until the outbreak, Legionnaires' disease had not been confirmed in the city or elsewhere in west Tennessee, despite its endemicity in other parts of the state (Tennessee Department of Public Health: unpublished data).

The city is served by eight hospitals. Hospital A is an acute-care complex in central Memphis comprising three connected buildings. The facility has 1730 beds and a staff of 4790. Occupancy during August and September 1978 averaged 82 per cent, with a mean patient stay of 8.8 days; most patients are older than 15 years of age. The hospital receives countless visitors daily; a number remain overnight in patient rooms and waiting areas.

After heavy rains on August 8, 1978, a flash flood inundated central Memphis, including the ground floor of Hospital A (other hospitals were not involved). Patient-care areas were not affected, and the water was cleaned up within hours. However, pumps for the main cooling towers were inactivated, causing a temporary loss of air-conditioning. An auxiliary cooling tower, not operated for nearly two years, was used from August 8 until September 7, when the main units were fully restored. Unlike the main units, this recently filled tower had inadvertently not received chemical treatment of its water. There had been no recent renovations, construction, or earth-moving in the vicinity of the hospital.

METHODS

Diagnosis and Case Finding

A working clinical definition of suspected Legionnaires' disease incorporated three criteria: temperature of 39.2°C or higher, radiographic evidence of pneumonia, and no bacterial isolate of convincing clinical importance.

The diagnosis was confirmed by a fourfold or greater rise in indirect fluorescent antibody (IFA) titer to 128 or higher.[4] Tests were performed (either at Baptist Memorial Hospital in Memphis or at Tennessee State Public Health Laboratory in Nashville) using Philadelphia 1 (serogroup 1) antigen provided by the Center for Disease Control (CDC), Atlanta, Georgia. (Post-mortem tissue samples were sent to CDC for direct fluorescent antibody staining[4] but did not identify any further cases.) When no acute-phase serum specimen was available, a presumptive diagnosis of Legionnaires' disease was made on the basis of a convalescent-phase IFA titer of 256 or more in cases that were clinically consistent. Also, when no acute-phase serum was available, a case was considered suggestive if it fully met the clinical case definition and has a convalescent-phase IFA titer of 128.

Prospective surveillance for patients meeting the clinical criteria was established in early September at all eight Memphis hospitals and was continued until mid-October. Intensive retrospective casefinding was conducted through review of admissions and medical records from July through September at Hospital A and at two large hospitals nearby.

When possible, acute and convalescent-phase serum specimens or post-mortem lung tissue were tested from all patients meeting

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the clinical case definition; Hospital A patients with milder pneumonia or fever of unknown cause from August through October; and Hospital A employees who had been on sick leave at least three days in August or September with fever or respiratory disease. A total of 76 persons meeting the clinical definition of Legionnaires' disease and over 75 persons with milder illness were examined. Finally, all confirmed cases occurring from July through October 1978 that were reported to the Tennessee Department of Public Health were investigated for any Memphis association.

Surveys and Studies

Patients or knowledgeable relatives (rarely only the physician and medical charts) were interviewed concerning their exposure to flood water and their geographic, occupational, and social activities during the two weeks before onset of illness. Particular attention was paid to associations with any Memphis hospital; in these cases, information was sought regarding areas and rooms visited or stayed in, entrances used, frequency of visits, duration, dates, and the like. Medical records were examined to confirm any hospital associations.

Three case-control studies were conducted.

The first study (Study 1) was performed to determine whether exposure to Hospital A or any other hospital during the 10 days before the onset of illness was associated with risk of Legionnaires' disease. For those patients admitted to a hospital after Legionnaires' disease developed, the next age-matched (±5 years) and sex-matched admission to the same hospital was selected as the control. For those cases where Legionnaires' disease developed in a patient already hospitalized for another illness (only found at Hospital A), a sex-matched and age-matched patient control was selected randomly from the hospital census on the date of onset of Legionnaires' disease, and associations were sought that existed at least two days previously, i.e., before the apparent minimum incubation period of Legionnaires' disease.[1] Findings were compared by McNemar matched-pair analysis.

Two further case-control studies focused on the subset of patients with Legionnaires' disease who had been in Hospital A for another illness at some time during the 10 days before the onset of Legionnaires' disease. In both studies, controls were inpatients at least 15 years old and without pneumonia, admitted on the same day as the respective patient with Legionnaires' disease on his most recent admission before onset of Legionnaires' disease. Data in both studies were analyzed by the Mann–Whitney U test or by the Pike and Morrow modification of the Mantel–Haenszel test for multiple matched controls.[3]

In Study 2, which examined a variety of personal risk factors, four controls were chosen per case, were matched only for time of admission, and comprised the two patients admitted immediately before, and the two immediately after, the case. Factors examined included age, sex, room and building where hospitalized, and dates and duration of hospitalization.

Study 3 focused on underlying disease and precise area of hospitalization. Two controls were drawn for each case, the nearest preceding and succeeding admissions matched for sex, age (±5 years), and building where hospitalized. Risk factors examined included race, history of chronic lung disease, cancer and certain other diseases, immunosuppression, hospital room, and dates and duration of hospitalization.

A preliminary examination of Hospital A's cooling towers was performed by R. T. Kelly, M.D., of Baptist Memorial Hospital, Memphis, who, with W. A. Rightsel, Ph.D., inoculated guinea pigs with water from the auxiliary cooling tower. A detailed engineering and environmental examination of the hospital was conducted by one of us (G.F.M.). Air currents around the hospital complex were analyzed by tracer-smoke studies. Samples of water and organic matter from the cooling towers and ventilation systems were collected and analyzed at CDC for the Legionnaires' disease agent.[4] Samples from cooling towers at two sites not associated with Legionnaires' disease (Hospital B 3 km southeast and the local health department 2 km northwest) were similarly processed.

Results

Forty-seven cases of Legionnaires' disease were found that related to Memphis–Shelby County between June and October 1978; 23 of these were confirmed, 18 were presumptive, and six were suggestive. Seven patients died, including two confirmed, three presumptive, and two suggestive. Clinically, the disease was of the severe type observed in Philadelphia in 1976,[1] with pneumonia demonstrated in 96 percent and temperature of 39.2°C or higher in 89 percent.

The epidemic curve (Fig. 1) shows a marked clustering of 44 cases in August and September. The distribution of suggestive cases paralleled that of the more securely diagnosed.

Implication of Hospital A

Forty-seven patients with Legionnaires' disease who had some Memphis association between June and October were found at 13 hospitals in Tennessee and Mississippi. Thirty-nine patients (85 per cent) had an association with Hospital A during the 10 days before onset of their illness: 16 as patients (three continuously for over two weeks before onset); eight as employees; 11 as visitors (five regularly stayed overnight); and four as passers-by on an adjacent street but not actually in the hospital. Only eight Memphis-associated patients between June and October had had no recent previous association with the hospital, and three of these became ill outside the epidemic months of August and September (Fig. 1). There was no association found with exposure to any other Memphis hospital or with direct exposure to flood-water.

Of the August-September patients with Legionnaires' disease, 24 of 44 had been either employed or a patient at Hospital A before onset. This incidence was significantly greater than that of the Study 1 controls: seven of 44 (chi-square = 13.76 by matched-pair analysis; $P<0.001$). Relative risk was estimated as 9.5 (11 for previous hospitalization, 8 for employment). Estimated differential attack rates are presented in Table 1.

Implication of the Auxiliary Cooling Tower

As shown in Figure 1, hospital-associated cases had onsets of illness that clustered between mid-August and mid-September. Non-associated cases extended from June to October; these were more frequently identified during and at the end of the epidemic period and probably reflected heightened medical awareness. The occurrence of hospital-associated cases corresponds precisely with the use of Hospital A's auxiliary air-conditioning cooling tower, assuming an incubation period of two to 10 days.[1] All 39 Hospital A-related patients with Legionnaires' disease had been in or near the hospital while the cooling tower was in use. All had onsets between the dates that would be predicted — August 10 to September 17.

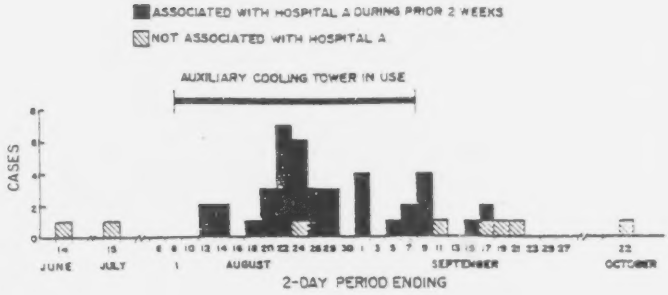

Figure 1. Cases of Legionnaires' Disease by Date of Onset and by Association with Hospital A.

— if the cooling tower were directly associated with transmission of Legionnaires' disease; in contrast, only three of the eight non-hospital-associated cases had onset of Legionnaires' disease during this period ($P<0.000001$ by Fisher's exact one-tailed test).

Shortly after the outbreak, water from the auxiliary cooling tower was found by guinea-pig inoculation to contain *Legionella pneumophila* serogroup 1. The recovery was first performed in the Baptist Memorial Hospital microbiology laboratory and was confirmed with a subsequent water sample processed at the CDC. One control specimen from a cooling tower on Hospital B, which was not associated either with the outbreak or with "sporadic" cases, was also positive both for serogroup 1 and for a non-typable serogroup. Specimens from the other control site were negative.

The auxiliary cooling tower was located on the eastern side of Hospital A (Fig. 2) at the second-story level. Water in the cooling tower had no direct connection with air in the ventilating systems. However, in normal operation the tower released a forceful aerosol ("drift") of its warm water into the surrounding atmosphere.

Table 1. Estimated Attack Rates for Legionnaires' Disease, according to Nature of Association with Hospital A during Outbreak Period (August 11–September 21, 1978).

Association	Number of Persons at Risk	Number of Cases	Attack Rate (per 1,000 at risk)
Employee	4,790	8	1.7
Patient	6,570*	16	2.4
Visitor			
Overnight	1,480†	5	3.4
Daytime only	32,850‡	6	0.2
Memphis–Shelby County, not hospital-associated	750,000§	5	<0.01

*Derived from census and admissions records.
†Mean of 262 visitor cots signed out per night + 10% estimated with own cot + 30 visitors) × 41 days ÷ 5.5 days mean patient stay.
‡Estimated as five visitors per patient.
§1975 Census estimate for Memphis–Shelby County.

Environmental examination of the hospital revealed a complex network of noncommunicating ventilation systems that provided cooled air to separate parts of the hospital's three buildings. Outside air was drawn in through large intakes located on various parts of the hospital. It was then filtered, cooled as it passed over pipes containing refrigerant (which itself transferred heat to water from the cooling tower), and was forced into the particular rooms, corridors, or nursing stations for which it was destined. After circulation within a room or corridor, air entered an exhaust vent there, passed through the exhaust system and was released to the outside. Because vents and intakes were properly located, exhausted air did not recirculate into the building. Thus, air from a particular intake reached specific interior areas and, aside from some air mixing through doorways, constituted the major proportion of ventilating air for those places.

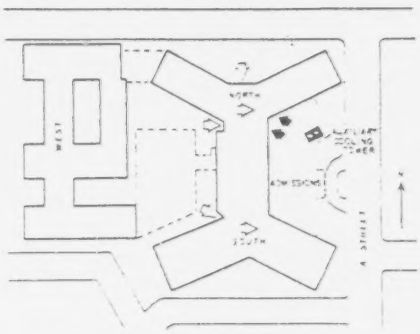

Figure 2. Schematic Diagram of Hospital A.
Black arrows indicate air intakes near cooling tower; white arrows indicate remote air intakes.

Table 2. Differential Attack Rates for Legionnaires' Disease, According to Building Where Patients Were Hospitalized before Onset and Source of Ventilating Air.

Building	Source of Ventilating Air	Number of Cases	Bed-Months at Risk*	Attack Rate (per 100 bed-months)
South	Top	2	259	0.8
	West	1	510	0.2
West	West	1	283	0.4
North	Top	3	311	1.0
	North	1	81	1.2
	East †	8	288	2.8 ‡

*During period of use of auxiliary cooling tower, Aug. 8–Sept. 7, 1978.

†Air intakes face auxiliary cooling tower.

‡Significantly higher than rate for other areas combined (chi-square = 10.61; P<0.01).

On certain floors of the north building as many as three separate external air supplies reached three different groups of rooms or corridors.

As shown in Figure 2, most of the air intakes at the hospital were on the north, west, south, or top of the 19-story complex, away from and shielded by the building from the auxiliary cooling tower. However, two intakes (black arrows), which gathered air for certain patient rooms on eight floors in the north building, were located 3½ stories high on the eastern side of the hospital, only 15 meters from the tower and about one-half story above its top. Tracer smoke released at the cooling tower (no longer in operation) hovered on the eastern side of the building directly by the two intakes, rose partway up the building, and gradually dissipated across and along A Street, not visibly reaching the hospital's other air intakes. Thus, several areas in and near the hospital seemed most likely to be exposed to aerosols from the cooling tower: those rooms in the north building supplied by the two eastward-facing air intakes, the main hospital entrance on A Street, and A Street itself.

Four patients with Legionnaires' disease had been on A Street immediately outside the hospital during the 10 days before onset of their illness, but not actually in the building. Most hospital employees or visitors in whom the disease developed had walked on A Street and used the entrance there. Within the hospital they walked through many parts of the complex. The principal place of work or visiting, however, was the north building for eight persons, the south building for eight, both buildings for two and the west building for one.

The patients who were hospitalized for other reasons before onset of Legionnaires' disease had been much less mobile and were better sentinels in the search for high-risk areas of the hospital. Patient areas were grouped according to the intake location of their ventilating air. Table 2 presents the air source-specific attack rates. The north building, the only building that received some ventilating air from the air intakes near the auxiliary cooling tower, had a significantly higher attack rate than did the other two buildings combined (chi-square = 7.16; P<0.01). The attack rate for those specific rooms within the north building that were ventilated with air from near the auxiliary cooling tower was significantly higher than the rate for the other areas of the hospital (chi-square = 10.61; P<0.01).

These rooms were also implicated by case-control Study 2 (Table 3). Patients with Legionnaires' disease were significantly more likely than controls to have been hospitalized in the north building before onset, particularly in those rooms receiving air from near the auxiliary cooling tower. In case-control Study 3 (Table 3), eight of the 12 patients with Legionnaires' disease (67 per cent) from the north building had been in rooms ventilated from near the cooling tower, as compared with seven of 24 (29 per cent) for the matched controls who had been hospitalized in the same building. Although the small numbers preclude the achievement of statistical significance by the rigorous multiple matched-control analysis, the data are consistent with the previous results.

Greater length of hospitalization before onset of Legionnaires' disease also was a significant risk factor

Table 3. Area of Hospitalization before Onset of Legionnaires' Disease — Comparison of Cases with Two Control Groups.

Source of Data	North Building		Other Buildings		Room Receiving Air from Near Auxiliary Tower		Room Receiving Air from Other Sources		Estimated Relative Risk	Significance*	
	Cases	Controls	Cases	Controls	Cases	Controls	Cases	Controls		Chi-square	P value
Case-control Study 2†	12	27	4	37					4.1	11.34	0.001
Case-control Study 2†					8	11	3	53	4.8	6.48	0.01
Case-control Study 3‡					8	7	4	17	4.9	3.02	0.08

*Pooled data presented for summary purposes; analysis performed by Mantel–Haenszel test for multiple matched controls.

†Four controls per case, matched only for time of original admission.

‡Two controls per case, matched for time of original admission, age ±5 years, sex, and building where hospitalized; comparison of cases and controls from north building only.

In Study 2, mean hospital stay before onset was 18.2 days for cases, whereas mean total stay for controls was 6.9 days ($P<0.0001$ by the Mann–Whitney U test). Mean stay in hospital while the auxiliary cooling tower was in use was 12.3 days for cases but only 4.6 days for controls ($P = 0.0003$). The differences remained significant in Study 3, where controls were matched for age and sex, as well as building where hospitalized: 18.2 days' mean stay before onset for cases and 9.2 days for controls ($P = 0.004$); 12.3 days during use of the auxiliary cooling tower for cases and 6.3 days for controls ($P = 0.013$).

Other Possible Risk Factors

Hospitalization-associated patients with Legionnaires' disease ranged from 24 to 82 years of age (mean, 57.9), as compared to 47.6 for controls in Study 2 — a difference of borderline significance ($P = 0.054$ by Mann–Whitney U test). Among the hospitalization-associated cases there were 11 men and five women, as compared with 28 men and 36 women for controls in Study 2 — a significant difference (chi square = 4.75 by the Mantel–Haenszel test; $P = 0.03$). In other studies, controls were matched for age and sex. Race was not found to be associated.

There were no significant differences between cases and controls in Study 3 for history of chronic lung disease, cancer, arteriosclerotic cardiovascular disease, diabetes mellitus, or immunosuppression therapy.

Incubation Period

Four patients with Legionnaires' disease had only a single exposure to Hospital A, suggesting incubation periods of four days, five days, and seven days (two patients). If exposure is considered only during the period of use of the auxiliary cooling tower, all hospital-associated cases could be explained by an incubation period of three to nine days, consistent with the range found in Philadelphia.[1]

Discussion

This was a clear-cut outbreak of Legionnaires' disease, brief but intense, narrowly confined to one geographic point in a city recognized to have a low background endemicity. Transmission appeared to have taken place both inside and immediately outside Hospital A and was limited to the period when an auxiliary cooling tower was in use. The only identified exposure history that was shared by the various hospital-associated cases was physical presence in or near the hospital and breathing the air. The temporally implicated cooling tower produced an aerosol of water that twice was shown to harbor *L. pneumophila*. A tracer-smoke study demonstrated that aerosols from the cooling tower could reach two nearby air intakes and the street below. There were cases associated with that portion of the street; and within the hospital, those areas ventilated with air from near the cooling tower were specifically linked with acquisition of Legionnaires' disease.

The epidemiologic and microbiologic findings therefore implicate the auxiliary cooling tower as the source of the agent, and strongly suggest an airborne mode of spread. A smaller outbreak at a country club in Atlanta[7] has since been associated with a contaminated evaporative condenser, which is similar to a cooling tower. The Memphis findings are reminiscent of the contaminated ventilating system linked to the transmission in 1968 of Pontiac fever, another form of legionellosis,[8] although many epidemiologic and clinical features differ.

How did the auxiliary cooling tower become contaminated, and what was the ultimate source, or reservoir, of the agent? The ecology of *L. pneumophila* is still obscure. It has, however, been isolated with increasing frequency from thermally polluted water in cooling towers,[1,8,9,10] evaporative condensers,[7-10] and from streams and mud.[8,9,10] Many of these sites, like our positive finding at control Hospital B, have not been associated with recognized illness. The organism may indeed be ubiquitous, emphasizing the importance of epidemiologic, as well as environmental, investigation.

Whatever its reservoir, *L. pneumophila* may be able to contaminate a cooling tower by the airborne route. Huge volumes of outside air are drawn through the tower and have intimate contact with the water therein to effect heat exchange.[11] Dust and other particulates are transferred from the air to water; in effect, the incoming air is "washed." It seems reasonable that airborne microorganisms could thus be introduced into the tower. Moreover, cooling towers are open structures, exposed to the droppings and detritus of insects, birds, and possibly other animals. Whether *L. pneumophila*, once introduced, actually can propagate in a cooling tower or simply collects there remains unclear. Presumably, however, it can at least survive in a cooling tower, because it remains viable as long as a year in tap water.[12] The powerful aerosol created as a byproduct of tower operation would seem a capable means of polluting the local atmosphere with microbial contaminants of cooling-tower water. In most of these respects evaporative condensers are similar.[11]

Regardless of how the agent was introduced, the implicated tower at Hospital A was probably contaminated before operation, because hospital-associated cases appeared promptly within three days of its being turned on. The tower had been kept "drained" until one week before use (it had been filled for anticipated flushing of the equipment). However, it communicated with an extensive network of pipes and tubing deep within the building, in which some water remained.

The implication of a contaminated cooling tower as a common point-source and the association of evaporative condensers with two other legionellosis outbreaks[7,8] raise the intriguing question of the role of thermally polluted, aerosol-producing equipment in both legionellosis outbreaks and sporadic cases. Such equipment would seem well suited as amplifying systems for the organism, if not the actual reservoirs. Cooling towers and evaporative condensers are common around commercial and institutional buildings. Their exhausts and aerosols focally infiltrate the breathing air of most urban and industrial areas during warm weather. Their increased and almost universal use in the past several decades corresponds roughly with the recognition of outbreaks of legionellosis, both Legionnaires' disease and Pontiac fever, since the 1960's. Moreover, the seasonal pattern of their use — maximal in midsummer to late summer — corresponds with the seasonality of sporadic cases of legionellosis[13] and with the timing of nearly all the recognized outbreaks. Heat-exchange equipment, however, probably does not constitute the only source of infection. Sporadic cases have occurred throughout the winter months, though with decreased frequency,[12] and in at least one outbreak in this country there apparently was no air conditioning in the vicinity.[14]

Inadvertently, and perhaps serendipitously, the water in Hospital A's auxiliary cooling tower was not subjected to routine chemical treatment. Conventional treatment at the time was for industrial convenience — protection against corrosion and against clogging by algae, slime, and other nuisance microorganisms. Some biocides may have the unanticipated benefit of suppressing *L. pneumophila*, suggesting a means of prevention and control. If demonstrated effective against the agent of Legionnaires' disease, some of these compounds may become part of prudent management of aerosol-producing equipment.[15]

Many persons participated and assisted in the investigation. We acknowledge the contributions of R. T. Kelly, W. A. Rightsel, F. H. Portera, K. F. Hood, T. P. Smith, C. N. Lee, B. J. Thomas, S. Sturdevant, and the medical, nursing, serology, microbiology, engineering and medical-records staffs, and administration of the Baptist Memorial Hospital, Memphis; the infection-control personnel at the Methodist Hospitals, the City of Memphis Hospital, the St. Joseph's Hospitals, and the Veterans Administration Hospital, Memphis; G. S. Lovejoy, Z. Boyle, and the Environmental Section, Memphis–Shelby County Health Department; S. Eakin, J. H. Grayson, and the Serology Laboratory, Tennessee Department of Public Health; G. K. Morris, P. Skaliy, and the Epidemiological Investigations Laboratory Branch Bacterial Diseases Division, Bureau of Epidemiology, Center for Disease Control, Atlanta, Ga. Finally, we wish to thank R. H. Hutcheson, Jr., of the Tennessee Department of Public Health, and the following persons from the Center for Disease Control, for their help: A. W. Hightower, S. M. Martin, J. R. Allen, R. E. Dixon, C. V. Broome, S. I. Music, J. L. Conrad, and D. W. Fraser.

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Mr. ROE. Please proceed.

TESTIMONY OF PRISCILLA A. CHAPMAN, NEW ENGLAND CHAPTER, SIERRA CLUB; AND MARIAN K. AGNEW, PRESIDENT, THE CENTER FOR ENVIRONMENTAL STRATEGY

Mr. ROE. We do want to welcome both of you to our committee. Suppose we start out with Ms. Chapman?

Ms. CHAPMAN. Thank you very much, Mr. Chairman.

Mr. Chairman, members of the subcommittee, I am Priscilla Chapman, I'm the executive director of the New England chapter of the Sierra Club. Our chapter office is located in Boston, Mass.

On behalf of the New England Sierra Club, I wish to express strong and enthusiastic support for Representative Howard's bill, H. R. 3282, to reauthorize the Federal Water Pollution Control Act.

I'm speaking for over 13,000 Sierra Club members in our chapter's area who want to see the progress which has already been made in cleaning up our Nation's waterways vigorously continued until the act's stated goals have been achieved.

While progress has been made in restoring water quality in New England, there is yet a considerable way to go. As of January 1980, according to the 1982 report of the region 1 EPA Administrator, 67 percent of our major stream areas met the fishable-swimmable goals of the Clean Water Act.

EPA region 1 projects that 82 percent will have met that deadline by the end of this year.

In Massachusetts, in 1980, 45 percent of our 1,715 river miles had met the standards; and region 1 predicts that 60 percent may be cleaned up by the 1983 deadline.

I happen to live near the shores of one of the rivers in southeastern Massachusetts that's in the 40 percent that is not going to make it; so it's very important to me.

Failures to meet the goals in certain areas are accounted for by problems of combined sewer overflows, runoff from streets, industrial areas, farms, and construction sites, delays in bringing treatment plans online, and concentrations of toxics in bottom sediments.

The New England chapter would like to emphasize four areas in particular where it is crucial that the Clean Water Act be maintained or strengthened—at least maintained—in order to continue the progress we have already made.

The first area that I want to highlight is our opposition to the substitution of opt-out pretreatment programs for the requirements to meet Federal pretreatment standards.

Since Mr. Garabedian already went into a great deal of detail on this point, I'm not going to talk about this at any great length.

I do want to simply point out that Massachusetts, as you probably know, is dealing with the provisions of proposition 2½ which puts certain limitations on the budgets of cities and towns.

Therefore, many of our industrialized towns and cities do not have the capability of formulating standards for all the toxic substances which are being discharged into their municipal sewers.

In fact, several communities in Massachusetts have been experiencing problems with the operation of their treatment plants; and

these problems are known or at least strongly suspected to be caused by industrial toxic pollutants and effluent entering the plants.

A good example of this is on the north shore of Massachusetts, the South Essex sewage district plant, which discharges into Salem Harbor, has been having great problems caused by the effluent containing chromium. In fact, this problem led to a shutdown of the plant and for a considerable period of time this plant was bypassing the sewage, and untreated sewage was being discharged in large quantity into Salem Harbor.

You are probably familiar with the great problems of pollution in Boston Harbor and a large portion of these problems are accounted for, also, by toxics from untreated industrial discharges being discharged into that body of water.

A number of communities are trying to deal with the sludge disposal problems that are created if toxics are not removed to acceptable levels.

For all these reasons we believe that strong pretreatment programs are clearly needed, and they should not be abandoned to the uncertainties of limited municipal personnel and constricted local budgets and pressures from local industries on cities who set up lax programs.

We also don't want to see the delays which are likely to result when cities are just going through the application procedure for opt out.

No. 2, we support the provision in H.R. 3282 which requires the EPA Administrator to identify and develop specific control strategies for toxic hotspots in nonattainment areas.

In my written testimony I refer to one area in particular, the Narragansett Bay in Rhode Island, that has already had a significant amount of activity on the part of Rhode Island and the Governor's task force, which recommended that their regulations for installing toxic systems be strengthened; and that has been done.

They also have a State regional sewer authority which has been trying to clean up the Narragansett Bay, among other things.

Despite these actions, the Narragansett Bay still remains a very large problem because it is a toxic hotspot, and we believe the provisions of Representative Howard's bill would apply to this situation.

No. 3, the chapter enthusiastically endorses the proposed amendments in H.R. 3282 to the 301(h) waiver requirements which would require primary treatment and pretreatment of toxics equivalent to levels of secondary treatment before granting waivers from secondary treatment.

These amendments would also prohibit waivers for discharge into estuarine waters.

These provisions would have specific application to a number of situations in Massachusetts which the New England Sierra Club has been looking into.

A few years ago we opposed the waiver application for Boston Harbor, which was submitted by the Metropolitan District Commission; and we are now studying with great concern similar applications submitted by Lynn, South Essex, New Bedford, and Fall River.

Based on the information found in these applications, it appears that all of those proposed waivers, if granted, would have potentially significant adverse effect on water quality in the respective estuarine areas.

It would also have significant adverse effect on populations of shellfish, fish, and other aquatic life.

These effects would primarily result from unacceptable levels of dissolved oxygen in the effluent and also toxic constituents in the discharge.

In the case of the waiver application for Boston Harbor, Sierra Club also has serious questions about the information which was presented on tidal flows and current movements, and the conclusions that were drawn from this information, about the probable mixing of the effluent in the receiving waters, and probable concentrations of pollutants in the bottom sediments.

We have also raised questions about the MDC's inadequate consideration of the effects of this waiver on Cape Cod Bay.

Requiring Boston and other communities mentioned above to comply with the provisions of the amendments proposed to the 301(h) waivers would result in these communities extending their outfalls beyond the bay areas, to areas where greater degrees of mixing of discharged pollutants would be expected to occur in order for these municipalities to obtain waivers.

Such extensions would be likely to increase the potential of bioconcentration and sediment buildup. In addition, because these municipalities would be required to satisfy strict primary treatment standards, pretreatment equivalent to the toxic removal of secondary, there would likely be a decrease in the levels of toxic and other pollutants in the effluent.

Thus, waivers of secondary treatment might prove in most cases environmentally acceptable.

Savings to these municipalities are still likely to result. The National Wildlife Federation has estimated that the cost of extending their outfall beyond the bay line would be around $140 million. This would be significantly less than the projected capital and operation and maintenance costs of building a secondary treatment plant.

Our last point, No. 4, the New England Sierra Club urges the subcommittee's serious consideration of the problems of pollution from nonpoint sources.

We support Representative Oberstar's proposed amendment to address these problems, but would like to suggest some additional provisions.

Increased control and elimination of point-source discharges under the provisions of the Clean Water Act have made it possible to identify, characterize, and quantify pollution from nonpoint sources.

Under sections 208 and 304(b) of the Clean Water Act, States have performed inventories of nonpoint pollution and some States have described control strategies.

In fact some of these analyses have been completed in great detail. What is still lacking, however, is an across-the-board requirement for States to implement these plans.

A 1977 report by the Massachusetts Division of Water Pollution Control on nonpoint source pollution described the types of pollution entering each river basin in our State, and it demonstrated a wide range of sources, from agricultural runoff, landfill leechate, pesticides, and erosion from forest and construction sites, to septic seepage, runoff of oil and road salt, urban industrial site runoff, and also many problems with combined sewer overlfows, particularly in our cities which have very old water and sewer systems.

More recent reports have been able to quantify the amount of pollution resulting from nonpoint sources.

For example, a recent study of the stretch of the Housatonic River near Pittsfield, Mass., was able to demonstrate how river pollution resulting from runoff can be measured by subtracting the pollutant load measured at the discharge point of local industrial sources from the total load measured downstream in the receiving waters.

Some of the projects generated under the national urban runoff program have shown that nonpoint source pollution control for urban areas need not be expensive propositions, particularly if control strategies such as catch basins, grass covers, and street sweeping are utilized in targeted areas of a city where the largest amount and the most harmful forms of runoff could be expected to occur.

Other studies have examined problems of combined sewer overflows and have suggested that better maintenance of sewer systems and certain kinds of repairs are likely to result in the decrease of sewer overflow, without necessarily spending the huge sums of money that would be necessary to replace the entire systems.

Characterization of these problems and identification of strategies, however, have not necessarily resulted in solutions.

Just this last January the Massachusetts Division of Water Pollution Control completed development of the ground water program based on their 208 findings; and this plan called for specific actions by the State. However, at this point this program seems to have been put on the back burner for lack of funding and for lack of a mandate which the States must go forward with.

Also one of the projects under the national urban runoff program has concluded that urban runoff is a major contributor to the problems in Boston Harbor. Once again, the project provided specific recommendations; but these recommendations have been neither funded nor implemented.

Restrictions on State and municipal budgets have diverted funding and personnel away from areas where control action is not mandated.

My own State's lack of a comprehensive nonpoint source control program was highlighted for me last summer when I observed a State-owned vehicle liberally spraying herbicides on trees bordering my own public drinking water supply.

Despite the fact that nonpoint sources have been extensively described, many of the problems remain uncontrolled.

New England Sierra Club does not at this time urge the committee to require uniform control strategies for each State. We recognize the wide diversity of problems in individual States and regions and the widely differing strategies needed to address them.

Representative Oberstar's amendment would allow States the flexibility needed to develop programs more effective for that State.

We believe it is necessary, however, to add deadlines by which the States would implement their programs, and the requirement that EPA step in and administer a program if the State defers; thus providing an enforcement mechanism.

We also urge that funding be provided the State as well as technical assistance from EPA, and that funding should be available for use to repair sewer systems as well as other purposes.

Thank you very much for this opportunity to testify. We hope that the subcommittee will express strong support for H.R. 3282 and Representative Oberstar's amendment.

Mr. ROE. Thank you very much.

We will recess for 10 minutes while we go to vote, it's the Conable Amendment; we will be right back after that.

[Recess.]

Mr. ROE. All right, well, why don't we proceed, Ms. Agnew?

Ms. AGNEW. Thank you, Congressman Roe, and distinguished members of the staff.

Before I begin, perhaps I should reiterate to you my experience both here in Washington's metropolitan area and in the surrounding communities.

The Center for Environmental Strategy, whom I represent today, was put together in about 1975, to serve, primarily as plaintiff on Potomac River water cases; you know, we've been trying to tighten up the NPDES permits to include nutrient removal, because of the water quality limited estuaries; also to find some solutions for our mounting sludge problems.

Subsequent to that time I've worked with citizens groups in Tucson, and—after going to law school—have become a community consultant for small communities to try to help them understand their problem in the first place; work their way through the bureaucracies at the State and Federal level; and either to get Federal grants, if they need them; or to figure out a way to solve their problems themselves—which sometimes is possible.

You have consistently, Mr. Chairman—almost ever since I have come to hearings before you, asked the same question; which is: What do we do now? If you don't like it, what do you want to do about it?

So I think that's what I came here today to tell you.

And I will go through my testimony because it's quicker and easier to do that, and I hope that anything that is not clear will be clarified.

I offer for your consideration a minor amendment to title II, section 201(g)(2) to improve the practical application of that section.

You will remember, 201(g) requires grant applicants to study and evaluate alternative waste treatment techniques providing for water reclamation or recycling or eliminating pollutant discharges.

We all know that the elimination of pollutant discharges is exactly what the 1972 act required.

This section says that the Administrator shall not make grants unless the grant applicant has satisfactorily demonstrated—as it is presently written—it says, alternative waste management techniques have been studied and evaluated, and so on.

I propose inserting an amendment prior to that, that the Administrator not be allowed to give grants until a request for competitive proposals, an RFP, for all reasonable alternative waste management techniques, which fulfill the goals and objectives of title I, and the purpose of title II, has been advertised in at least three national newspapers, and at least three trade journals which are widely circulated within the water pollution control industry.

This proposed amendment, in addition to the 1972 amendments, brings section 201(g)(2) up to date.

More than 10 years ago when this section originally was written, reclaiming and recycling of water and elimination of pollutant discharges was anticipated.

As I remember, Mr. Congressman, you or Congressman Howard said that the act "bet on the come"—it was a betting term; and I just want to tell you today that in the last 10 years the "come" is here. There are lots of good alternatives out there; but the problem is simply informing and educating the local communities on what the alternatives are.

Today good alternative technology is a reality.

Many communities around the country have already constructed cost-effective clean systems, and many more are planned.

I cite Muskegon, Michigan, of course, at 45 million gallons a day, Colorado Springs, Lubbock, Tex., Nantucket, Fulton County, Ga., and so on and so forth.

The most pressing major problem remaining is informing community leaders who are shopping for effective low-cost treatment technology about what is available for them.

Typically, they are not told accurately about alternatives to conventional treatment which are competitively advantageous.

They are usually given only limited options recommended by their local engineer.

These communities routinely hire an engineering firm to oversee the streets, sidewalks, sewers, and so on. And my experience has been that when they need to construct a new sewer treatment plant, they say to the local engineer: build us a sewage treatment plant.

So he goes to his catalog and it's a Sears Roebuck catalog of component parts, and he says, I'll take, you know, so many tanks and so many pumps and so on and so forth; and that's the kind of treatment that he provides for them.

That has created tremendous problems, because, again, it's a kind of a patchwork add-on system.

Decisionmakers, the politicians who have to pass on this, naturally take the word of their local engineer. They don't have a complete understanding about what's happening in technology and what's available; and they don't understand the new approach to sewage treatment, recycling and reutilization of the energy in sewage.

Sewage is truly black gold. Sewage has tremendous economic potential for a community to take advantage of the biological and chemical energy.

They don't understand that, but they learn very fast.

They don't really have any choices from which to pick the best alternative.

Moreover, when recycling alternatives are enumerated by the local engineer, they are usually misrepresented or undervalued. Costs are inaccurately presented and inflated.

Those who have had experience with conventional systems only, understandably, cannot and will not be in favor of their competitors.

As a result, in the usual environmental impact statement alternatives become strawmen—systems to be evaluated and dismissed as unacceptable for one reason or another.

To date the market has been largely controlled by the hardware and chemical manufacturers, consultants, academics, and the construction grants bureaucracy within both the States and the EPA—that's one of the biggest problems we have today.

Less than 10 percent of EPA grants have been spent on the kinds of alternative technology, slow-rate irrigation which meets the recycling and no-discharge requirements of the act.

The time has come to break open the competitive process and to require—by law—that the most recent, inexpensive, and effective technology be presented to those who have to determine how to spend community tax dollars, and who have to live with the results.

After all, the Federal Government only pays a certain percentage of capital; it does not contribute a penny toward ongoing operation and maintenance costs.

Sludge is the biggest problem we've got to deal with—as we've got to do here in the District of Columbia.

Requiring requests for proposals prior to the step I process can accomplish this end.

A practical example illustrates this point:

Public officials in Stevens City, Va., were ordered to improve their wastewater facilities.

They refused to join a large regional system because of costs. An RFP was circulated and received nine proposals.

After presentations by the responding consulting firms, they chose a slow-rate irrigation system which will recycle their sewage problem into a revenue-producing asset as part of an overall development plan.

Recycling wastewater will, therefore, become a net benefit to the community as well as saving tax dollars.

The system chosen is, in fact, so inexpensive that the city fathers decided to finance construction themselves without asking for Federal funds. Yesterday, nearly a half-million dollars bond referendum was passed by the citizens of Stevens City, by an 80-percent margin.

Now, that's a model for the Nation.

Incidentally, Pat Ledford who represents the Washington office of the engineering firm who is designing the Stevens City facility is here; if you want to ask anything about how this occurred, citizen participation in it—she'll be glad to answer questions.

By contrast, officials of the city of Rehoboth, Del., are planning to build a conventional plant discharging to the Lewes-Rehoboth Canal.

The final environmental impact statement discarded alternatives which limited the decision process to unimaginative and costly projects.

The canal is used extensively for swimming and fishing, crabbing and other water-related activities.

The site chosen is a recently inactivated landfill in a salt marsh. It is actively outgassing methane, a highly flammable gas.

State officials have submitted a request to EPA for permission to lower the water quality standards in the canal by more than half, well below the lethal limit for many species of fish, in order to accommodate the sewage plant discharge.

They did this under the regulations preceding those which have just been promulgated; and to my knowledge, the region III Administrator has not signed off on those.

They maintain that, in spite of the discharge, the uses of the canal will not be changed.

If built as planned, the plant will hasten the eutrophication of Rehoboth Bay—it provides no nutrient removal—continue to pollute the canal, and thereby limit its use to the community.

Extremely high ongoing operational costs for treatment and sludge disposal will be incurred. The Rehoboth plant also doesn't take any notice of the surrounding area's very, very bad overflowing septic tank problems.

The plant also may become the first federally funded exploding sinking sewage treatment facility in the country. All efforts made by citizens so far—and we started working on this last summer—to persuade officials to stop this outrageous project and circulate an RFP for a better and cheaper alternative, have failed. My comments on the Rehoboth STP EIS have also been given to this committee.

As I worked with the citizens over there—and I did this voluntarily, because Rehoboth happens to be my summer watering hole—and I sail on the bay and swim in the area; and I am appalled at what is going on.

The more we looked at this, the more we began to realize that, you know, it's completely surrounded with agricultural land. And in doing a little research, I discovered there were some large farmers who really are very much interested in reutilizing the nutrients in the waste water, and taking it.

But because the proper mix of component parts have never been created or put together—in other words, the sewage problem had never been viewed holistically—this had never occurred.

I think it is because of the myopia of the conventional approach that it is cut off from occurring; you have to skip over that segment of the process and go back to the people who have to pay for it—who are just normal citizens like you and me—and say: does this make sense to you?

By not circulating an RFP, local officials never really understand that there are better ways to go.

It has become abundantly clear, therefore, that the conventional pollution control industry cannot be allowed to continue to resist the changes mandated by amendments to the Clean Water Act since 1972.

Millions of dollars allocated for the innovative alternative set-aside have been wasted because they have not been spent on thse low-cost effective projects.

Meanwhile, our rivers and lakes are becoming clogged with algae, and the nutrients—nitrogen and phosphorus—are discharged in ever greater amounts.

Algal contamination of our raw water sources is causing ever higher levels of trihalomethanes in finished drinking water after chlorination.

For example, we talk of toxics in our water supply—are nutrients toxics?

Yes. The answer is, of course, they are—after they're hit with chlorine, they are highly carcinogenic. This is what the Clean Drinking Water Act is about.

It you consider the position of our major east coast cities, which do not have protected water supplies—like Washington, D.C.—we get the cumulative effects in our drinking water supplies of all of the nutrient discharges from the entire Potomac River watershed, which is vast.

This is the reason we have those algal blooms in the impoundments upstream, behind the Little Falls Dam, Great Falls Dam; and this is why we get the high levels of trihalomethanes in the summertime in our District of Columbia drinking water.

As you know, Boston has a protected water supply; but it's overdrafted; and they'll probably be going to the Connecticut River.

New York City has a protected water supply, but it's over drafted; and they'll probably be going to the Hudson River.

Baltimore has a pretty good water supply. But even those areas that have protected water supplies are being encroached upon little by little by little. There is more demand for water.

But unless we keep the nutrients out—and the only systems that can do that are nonconventional systems—the alternative systems, where plants actually remove the nitrogen and phosphorus as part of the perfectly normal cycle of uptake—our water supplies will be destroyed. This is the reason it is imperative that we look at this problem as a whole throughout the river basin.

Furthermore, the conventional separation approach to treatment is causing enormous sludge problems, both as to cost and as to disposal.

Witness the fact that as the Potomac is temporarily cleaner, the high-rise mountain of sludge at Blue Plains grows taller. No one knows what to do about getting rid of it.

You've probably seen that recently on television.

Likewise, our beautiful and enormously productive estuaries are dying because of nutrient enrichment. This can be stopped only by preventing point-source discharges and non-point-source leaching upstream.

Here again, technology is well advanced by scientists outside the conventional sanitary and civil engineering professions, taking a holistic approach to the problems.

If local communities were fully aware of the effectiveness of these technologies, the benefit to both the local community and its downstream neighbors, they would certainly take full advantage of it.

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Limited options are simply costing too much, environmentally and financially.

It's time to turn loose the American free-enterprise system and let the public know the wide range of promising new ideas available now.

This can be done by amending section 201(g)(2) to include a competitive search for creative and effective alternatives before any project can be federally funded. And I mean before the step-1 process. Because that step 1 is when you determine whether you are going to go for an alternative or you are going to go for conventional treatment.

So this has to be before sub-1.

That is my proposal for an amendment.

I also have another proposal for a deletion in H.R. 3282—would you like me to go on with that?

Mr. ROE. Yes, please.

Ms. AGNEW. Section 319 of H. R. 3282 proposes resurrecting the conference notion which was the only means of planning for watersheds before the 1972 amendments.

It was ineffective then; it will probably be even more ineffective now, because the authority given the conferees will duplicate and/or compete with programs started more than 10 years ago and currently in effect under the current legislation. Section 319 authorizes the conferees to make river basin master plans and to implement them by recommending priority corrective actions addressing point and nonpoint sources of pollution, monitoring, developing water quality and toxicity standards, effluent limitations, and to develop best management practices.

Admittedly, these are positive actions which must certainly be taken to protect the estuarine regions of the coast.

However, sections 303(e) and 209 of the act already demand both State and river basin plans.

Areawide waste management was supposed to have been addressed pursuant to section 208.

Admittedly, most of these programs have failed. The reason for that failure is easy to see: River basin planning starts with land use planning—the source of water pollution.

If and when public officials are convinced that they have to start making decisions about what happens between the raindrop and the river, planning will begin in earnest.

Until then, it won't.

Until then, spending nearly a quarter-billion dollars on another duplicative bureaucracy will not speed up the process.

Estuarine problems don't start in the estuaries. They start upstream in the watersheds.

Throwing more money at a program that has not worked usually doesn't get results.

On the other hand, cutting budgets unless some progress is made, might get some successful results.

If EPA would only say that no projects would get Federal grants unless and until the planning process produced projects which will remove nutrients, cleanup of all estuaries would begin immediately.

Cleanup of our surface raw-water sources would certainly be an important additional benefit because it would substantially reduce the amounts of cancer-causing trihalomethanes in our finished drinking water.

Before adding more financial fuel to the fire, please consider the words of Mr. Bill Roulette, a Tilghman Island waterman and chairman of the Izaac Walton League's Chesapeake Bay Committee—and I added the article as an appendix these are his words, not mine:

> We all screwed up the Chesapeake Bay because we are too selfish, and lazy and too dominated by self-seeking land grabbers. Now we are playing with something bigger than all of us put together. The facts are known and the facts are constantly ignored. It kills me to hear people say, "we are interested in cleaning up the Bay." If they were really interested, they would not allow the bureaucrats to run wild. It's just the mouthings of the politicians; it doesn't amount to a hill of pins. The thing that's so aggravating is that we have all these high-priced studies and nobody has done a thing.

The thing recommended here is an amendment to the act which will start the competitive, creative, American free-enterprise system started on the local level cleaning up local systems in the areas where pollution originates, confining disposal of pollutants so they will not migrate to cause water or other pollution, and allowing more efficient use of the chemical energy contained in waste water to offset costs of treatment.

Land treatment, slow-rate irrigation, the most effective alternative technology in most cases, establishes the relationship between the volume of wastes generated by numbers of people, both municipal and industrial, and the amount of land required to reconvert these wastes into useable energy.

As such, it is primarily a land-use planning tool.

I have given you a couple of other things which are an addendum to this testimony:

One is a 1979 report from the House Appropriations Subcommittee on Surveys and Investigations, which looked at sewage treatment facilities all around the country and found that they had failed, generally, in many ways to meet their permitted effluent limitations.

Part of that is also one of the first GAO reports. There are many studies by the General Accounting Office since, and a very good recent series that came out of the IG's office in EPA on various cities around the country.

I didn't include those because it would have been a stack of documents that would have been duplicative of yours; your staff members can get them from the IG in EPA.

They clearly show that conventional treatment over what we euphemistically call sloppy secondary—which is 30 milligrams per liter of suspended solids, and BOD-5—simply isn't achievable, in a word. If anybody talks about anything higher than that in a conventional treatment facility on an ongoing finely tuned well-tested basis, they are simply deceiving themselves.

We've spent $40 billion on these facilities so far under the Clean Water Act amendments. In my view, we have peaked if we continue to fund conventional sewage treatment plants.

From now on water pollution control will go downhill. I am pretty sure that will be the case in the Potomac River. Blue Plains is running 40 million gallons a day over capacity; the only reason the Potomac is getting cleaner is because the engineers have changed the discharge point to the Maryland side of the river. Blue Plains effluent is drifting down under the Wilson Bridge to Smoot Cove, an underground gravel pit which has underwater leaching from clear fresh water. The Asian clams have moved in. They are doing a great job of cleaning up that oxidation pond and the sewerage problem.

But the really astonishing thing is that a developer is now going to build a huge—huge—development, called Bay of the Americas on this bay, which has now become in effect, an extension of the Blue Plains sewage treatment plant.

So we're getting very close to the time when these things are all going to break apart.

Another one of my submissions to you are some reprints over time from the New England Journal of Medicine about outbreaks of waterborne diseases.

I think very shortly we will see these: cholera, for example.

There have also been, as I understand, in the Ocean City area, outbreaks of hepatitis, which were very carefully kept out of the paper. That would really cut down on the summer tourist business if people found out.

We're looking at AIDS, Karposi's Sarcoma; we're looking at Legionnaires' disease. It will be just a matter of time epidemiologically, if we continue to discharge our wastes, poorly treated, into our drinking water supplies, before the capability that we now have to resist is overcome.

I think the big field of water pollution is going to move very quickly into the field of public health and epidemiology.

Mr. ROE. Thank you.

We almost have to ask the same question we asked the lady from Indiana, you know—the States have to take an interest, communities, people——

Ms. AGNEW. That's correct, that's correct.

Mr. ROE. I sat on this committee before 1972 when we wrote this bill, right from the very beginning we've run into that.

A great deal of the problem has been funding reduction; but above and beyond that is: Why should the Federal Government be badgering the people of the States to do something about protecting the very life they lead?

That's about where we're at.

Ms. AGNEW. Well, Congressman Roe, I think that the problem—looking at it from the opposite end of the scale; you being at the top and the people in the local community being at the bottom—I think what stands in the way is the conventional water pollution control profession that has become an anachronism.

That is the profession of the sanitary and civil engineers who have traditionally had the responsibility for dealing with the problem.

As I say in my testimony, these people control the EPA construction grants program. They control the State programs.

Our biggest problem when a community wants to do something right, is the blockers in the State health department and the State water control boards.

These are people who realize that if they allow these systems to go forward, they'll be out of work; because they don't understand how it's done.

These systems are very sophisticated, they require multidisciplinary approaches of hydrology, soils, farming, cropping, and so on and so forth, not to mention the fact if you're going to get into recycling, energy into electricity, for example, you're going to have to know about digesters—there are just any number of kinds of things.

But what I'm saying is that there's a whole new crop of very inventive free enterprise types have popped up with excellent alternative technology. It's sort of like making changes in automobiles:

Detroit never got the message until all of a sudden all those little tiny cars came in from Japan because of the oil crisis.

Now, the same thing should happen to the sanitary engineering profession.

People in the local communities don't really care what it is they buy as long as the final product meets the requirements, the Federal requirements, which certainly should stay in place as long as it doesn't cost them too much.

When you are recycling and reutilizing chemical energy it won't, because they become a net benefit.

Mr. ROE. If it doesn't cost them too much?

Ms. AGNEW. Right.

Mr. ROE. You know, when my colleague and I were walking back after voting, we said to ourselves: how do we get across in writing the law, how do we get across the idea that it's what they're putting into that water that they're drinking?

All the political parties and Washington aren't going to solve it unless the people themselves show they care a little bit.

Mr. AGNEW. That's right.

But they want to solve the problem. And I'm saying that the reason they haven't been able to is because they don't know what excellent cost-effective alternatives are available.

Mr. ROE. That's part of it. And I think you made an eloquent presentation; that's part of it.

But let me tell you something:

The minute it costs 20 cents more because it's not something that you put in the icebox or under the stove or you can ride in it—you can't see it's there—and can't drive it, but it's there—and that testimony was given earlier—well, you know, you open the tap, and out the water comes, and you flush the toilet and it's gone. That's all you have to do with it.

But, by God, let me tell you—and listen, I've been mayor for a town and done every single office there, and the minute it's $2 more—and we've got case after case testified to here—the people scream bloody murder.

Your people in Massachusetts on the 2½ percent proposition, is it?—what do you want from us?

If that's their direction—and I don't mean to be rude or be misrepresenting you—but it's been a long day listening. [Laughter.]

You know, what do the people of Massachusetts want from the people of New Jersey or California or Oregon, if they're not willing to make an investment in the quality of their life, and put up their proportionate share to get the job done, why should they complain to everybody else?

That's what I'm trying to get at.

Who selects the priorities?

Now, I happen to believe, serving on many committees, I happen to believe that the water the people put in their bodies is determining the health of the Nation, one way or the other.

Ms. CHAPMAN. Sure.

Mr. ROE. Now, some place along the line, the people, and the Congress, have to put this program at its proper priority.

I happen to believe they're not going to solve the problem with conventional technology—they had a real bust in Hershey, Pa., and other places——

Ms. CHAPMAN. That's right.

Mr. ROE. But having said that, when Congress and the people have to make up their minds with a $200 billion deficit, where do they want to expend their priorities?

Does their health matter to them? And if their health matters to them, they have got to be able to go out and say, this is what we ought to be doing.

But they're not doing that.

Ms. AGNEW. You are absolutely right, and we are coming from the same place.

When I started working with the folks in Rehoboth they kept saying, we don't want to put that nasty stuff on our land.

I said, if I gave you $45,000, what would you do with it?

Mr. ROE. Put it on the land?

Ms. AGNEW. And they said, what do you mean, $45,000?

No, no—I'm talking about profits. I'm talking about tax-free $45,000; because in a 3-month period, that is what the nutrient value is in the fertilizer value alone of the sewage in Rehoboth Beach.

Now, if you add the water value to it, it depends on whether or not it's raining, you know; if it's a dry summer, there's no price you can put on water. If it's a wet summer, then water isn't very valuable.

But the point is, the chemical energy in sewage is extremely valuable.

Now, when we advocate this kind of system, what we say is——

Mr. ROE. Would you yield for a moment?

There's nobody on this committee that understands that more than I do.

Ms. AGNEW. OK.

So what I'm saying is if you go along with this amendment, and my feelings won't be hurt if you "word-smith it" and improve it—because I am sure you can—if you go along with this amendment, basically and insure somehow, stick it in the committee report, that EPA requires the RIP's prior to a step 1 grant, maybe this becomes step 1, and then the step 2 is the evaluation of the alternatives—then and only then will the local people in the community

bypass the prejudices of the people to whom they usually give the problem.

In other words, it will create practically instantaneously a whole different economic incentive for change. And we are talking about change. We're really talking about change in the broadest perspective of all.

And I guess my final word to you today is, the change has got to come before we put any more money into water pollution.

We can't afford to build any more conventional plants. Believe me, I have worked on Blue Plains, and it's got to be the most difficult situation here that there ever was, since 1972; and I can assure you that it will remain in everybody's conscience as the most egregious waste of money that has ever been perpetrated—a billion dollars for that sewage treatment plant—it's just absolutely unthinkable.

We know it now. The people working there know it. Everybody knows it. There's no way to get rid of their sludge.

And they say to me, Ms. Agnew, what are you going to do with the sludge?

You know what they're going to try to do? They're going to try to burn it.

And we have those incinerators, turned off in 1972, because they were going to blast that stuff right into the intakes of this, among other, Federal buildings; and that, we determined, was not a very good idea.

Mr. ROE. Well, we want to thank you very much. Please don't consider us rude——

Ms. AGNEW. No, I understand.

Mr. ROE. But we've got other matters to deal with right now.

We thank you for your testimony.

Ms. CHAPMAN. Mr. Chairman, I also want to respond to that; and I realize you have to go vote.

Would it be possible for me to submit a response to your previous question in writing?

Mr. ROE. Yes.

Ms. CHAPMAN. Yes, you mentioned Proposition 2½ in Massachusetts, and it's very important.

Mr. ROE. Yes, I'd like to know for the subcommittee's benefit, what kind of impact has that had, that you can discern at this early date? What kind of impact has that had on the prioritizing, prioritization, of the use of local funding toward environmental issues?

Ms. CHAPMAN. That's what I'd like to address.

Mr. ROE. All right. Thanks very much.

The subcommittee will recess until tomorrow morning at 10 o'clock in room 2218.

[Whereupon, at 4:10 p.m., the hearing was recessed, to reconvene at 10 a.m., Thursday, November 10, 1983.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

THURSDAY, NOVEMBER 10, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:25 a.m., in room B-318, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. Good morning, ladies and gentlemen. The Subcommittee on Water Resources will come to order.

We are continuing our hearings on the Clean Water Act and we have with us as our first witness today Mr. Garroll Mace, executive director of the Clearfield, Pa., Chamber of Commerce, and we defer to our distinguished colleague from Pennsylvania, the Honorable Bill Clinger, to offer our formal welcome.

Mr. Clinger?

Mr. CLINGER. Thank you very much, Mr. Chairman, and Garroll, I would like to welcome you on behalf of the committee.

Why don't you take the committee table, Mr. Mace, and I would just like to offer my personal welcome to you. I can vouch for the fact that you have been extremely active in promoting economic development in the county which desperately needs it with very high unemployment and I also notice that you have given a great deal of study and concern about the impact that the BAT requirements would have on that kind of development.

So I look forward to your testimony and am delighted that you could be with us today.

TESTIMONY OF GARROLL MACE, EXECUTIVE DIRECTOR, CLEARFIELD, PA. CHAMBER OF COMMERCE

Mr. MACE. Thank you very much.

Mr. Chairman, Congressman Clinger, and distinguished members of the subcommittee, I am here representing the Clearfield Chamber of Commerce of which I am the executive director. I want to thank you for allowing me the privilege of addressing you. My appearance is a special personal honor for me as I have never addressed Congress before, and for Clearfield, Pa., as far as I can tell, no Clearfielder has testified before Congress.

The issue that brings me here is BAT—best available technology. You know in my part of the country, we have many, many sportsmen, particularly fishermen. It is a sportsman's paradise.

Since you passed the Clean Water Act, Pennsylvania businesses and Clearfield have done our share to clean up our water and today I am happy to report that according to a January 26, 1981, Associated Press report, cleanup efforts on the Susquehanna River have made the river clean enough for shad and other fish to return. The report said, "Shad had not been present in the river for more than 50 years for various reasons, including overfishing (and) pollution," but "water quality is now adequate to sustain spawning."

Tables, included in the three-State water quality report entitled "Assessment of Water Quality Conditions—Ohio River Mainstream 1980–81," indicate that 81 percent of the Pennsylvania miles of the Susquehanna River in the 23d Congressional District are meeting Federal clean water standards.

"It is apparent from the continuing trend of water quality improvement that progress in attaining the 1983 fishable/swimmable goals set foth in the Clean Water Act is being realized," the report states.

"The best measure of the success and effectiveness of Pennsylvania's water quality management program is in the improvement in the quality of polluted or degraded waters and the adequacy of protection of good quality waters. Pennsylvania has recorded these changes in its annual reports since 1968. The inclusion of streams with improved water quality is an indication that these waters are now meeting State water quality standards or have exhibited significant progress toward this goal."

We realize there is still more to be done to clean up the water, and we strongly favor a continuing effort to keep and improve our water quality. However, the issue is how best and most effectively to go about this.

We believe the States and EPA should set water quality standards and all companies should meet these, period. If a company is polluting the water beyond these standards, it should stop.

We in Clearfield had a meeting on this, and 60 of us from Clearfield, Elk, and Centre Counties turned out just to discuss the issue with Congressman Clinger. Our Congressman has been very responsive to our problems. You see Clearfield, as with many if not most cities in the Northeast, is not exactly experiencing a business boom with many new businesses opening up and most importantly, new jobs being created. We are trying hard to hang on to what we have. The effect of a mindless blanket application of BAT would be devastating to our workers and businesses.

Our community leaders spoke up at this meeting. Bob Gausman of Ridgeway Color & Chemical said his company employs about 1 percent of workers in Ridgeway, Pa. His small firm has spent about three-quarters of a million dollars to date to meet current regulations—and he has done a damn good job of meeting our strong State and Federal laws. But if he is subject to BAT, it may not make the water significantly cleaner than it is, but could force him out of business.

Other Pennsylvania businesses and workers have been seriously hurt by foreign competition, and while a blanket application of BAT will make our products more costly, BAT doesn't apply to for-

eign nations and we will be even less competitive than we are today.

Clearfield is a small community, and firms like Ridgeway and many others I represent want to be good citizens and keep our water clean. But we ask you to put at least some faith in us at the State and local level.

If a business is being a good citizen, and can prove at its own expense that the imposition of BAT will not make the water it is discharging into any cleaner, why should it spend valuable limited capital on BAT.

It doesn't make sense that some bureaucrat, who has never been to Clearfield, issues nationwide technology standards based on the individual success of one facility somewhere, anywhere in the Nation.

What we are saying is please, before you pass this burden onto us, please write the law in a fair way. We share your goals of clean water. We want polluting stopped, but if a business is not polluting, it should be given a chance to prove this. If EPA or the State of Pennsylvania agrees that it is not polluting, this business should not be forced to put on costly equipment because some bureaucrat in Washington doesn't trust American business.

Mr. Chairman, I ask the consent of the committee to submit a letter from Ridgeway Color & Chemical and my testimony into the record.

On behalf of these businesses and citizens of Clearfield, thank you.

Mr. ROE. I want to compliment you on your testimony and the progress that is being made in your community.

I don't know whether it is being done because Bill Clinger is your Congressman. He can be pretty tough but he is doing a super job.

Mr. MACE. Mr. Chairman, the laws in Pennsylvania some of them are even more stringent than those of the Federal Government.

Mr. ROE. Are there any questions?

Mr. CLINGER. Could you give us a little more specific data on where the jobs come from in the area and how you view the impact that rigid imposition of BAT would have on the ability to attract new jobs, new industry in the area?

Mr. MACE. A rigid implementation of BAT scares the hell out of me. The unemployment rate in Clearfield County is 18½ percent. When we advertise, we do have an industrial development sector in the chamber of commerce and in trying to solicit industry to locate in our area one of the things we bring out is the quality of water that we have and also the amount of water. So if you are going to attract an industry that is a user of a large quantity of water naturally, the BAT would have a great influence on locating that industry in that area.

The new employment we would have in the area would come from expansion of the businesses currently located there. If additional requirements are placed on those businesses, they may, No. 1, look elsewhere to locate or they may say that rather than expand and hire new employees, we are going to spend our money

that we have to spend on a BAT improvement. Therefore, this would eliminate any further expansion of that company.

Mr. CLINGER. Thank you.

Mr. Chairman, I know that Mr. Mace has some letters from other groups in Pennsylvania.

Mr. ROE. The gentleman from Pennsylvania.

Mr. EDGAR. Mr. Chairman, I would like to also welcome this witness as a Congressman from Pennsylvania and while I came in late, I did have a chance to review the comments that you made. I wonder if you have any comments about nonpoint source pollution and the problems of agricultural runoff into the Susquehanna that is causing some problems downstream. I think your accurate statements here indicate that a great deal of cleanup has occurred but there are some reports that in the Susquehanna because of nonpoint source pollution, we are having some problems.

Do you have any comments from your point of view?

Mr. MACE. Yes, sir. I would like to address that. Yes, there is some runoff from farms. Also there is some pollution that comes about as a result of abandoned mines in the area. Money is to be made available to help take care of some of those although Clearfield has not received its share of that money as yet. There are some areas that do need cleanup, but these are abandoned mines.

When I look at the reclamation that has been done through the strip mining, some of the contour of the land is even greater and better and prettier than it was to begin with and talking to a person who is involved with the extension service in Clearfield, the reclaimed areas have now become haven for the whitetail deer which is very common in that area.

Mr. EDGAR. But you as a chamber are not concerned about mine drainage or agricultural runoff as it relates to the quality of the Susquehanna water system?

Mr. MACE. We have a concern, yes, sir. As to what degree of pollution I can't say.

Mr. EDGAR. It might be helpful if your chamber and others in the area could take a look at that because I think we have dealt fairly well with point source pollution and we are looking at corrections and modifications of that law. But the whole center part of Pennsylvania having the watershed go into the Chesapeake and into the lower reaches of Maryland and Delaware are requesting the Congress to invest some funds. It is going to probably be in the neighborhood of, perhaps even as high as $100 million to clean up the Chesapeake from the increase to pollutants that are infiltrating down the lower stream area.

It is not just all coming from your area but it is a problem that we are beginning to see and I think any contribution you can make in that area will be very helpful.

Mr. MACE. Thank you.

I find that too many people are coming to Congress and asking for moneys. When I look at companies who are spending their own money such as Ridgeway Chemical investing three-quarters of $1 million to help cleanup money going back into the streams and what have you, I think this is to be commended, sir.

Mr. EDGAR. I have no problem with that. I think that is fine and I would hope that that was done at all the centers where there is

point source pollution. I guess my concern would be where you don't have a pipe going back into the stream but you have just the general drainage, agricultural runoff, runoff for the streets and sewers and things that are causing problems.

Thank you.

Mr. ROE. I thank the gentleman from Pennsylvania. Are there any further questions for Mr. Mace.

We want to thank you very much for adjourning to Washington. We appreciate your taking the time to testify before us.

Mr. MACE. Thank you, sir.

Mr. ROE. Our next witness is Dr. Norman H. Brooks, engineering consultant for the city and county of San Francisco, accompanied by Ms. Jan Berry, assistant executive director, San Francisco clean water program, Department of Public Works, city and county of San Francisco.

We welcome you, Dr. Brooks and Ms. Berry to our committee.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF JAN BERRY, ASSISTANT EXECUTIVE DIRECTOR AND NORMAN H. BROOKS, ENGINEERING CONSULTANT, SAN FRANCISCO CLEAN WATER PROGRAM

I am Norman H. Brooks, appearing today as an engineering consultant on marine disposal for the City and County of San Francisco.

Although I am appearing here on behalf of San Francisco, my regular position is James Irvine Professor of Environmental and Civil Engineering, and Director of the Environmental Quality Laboratory at the California Institute of Technology. At Caltech, my work includes research and teaching of on the subject of marine disposal.

With me is Jan Berry, the Assistant Executive Director of the San Francisco Clean Water Program. The Clean Water Program is a division of the Department of Public Works of the City and County of San Francisco.

Introduction

Section 301(h), an important amendment to the Clean Water Act in 1977, allowed municipal ocean discharges to meet water quality requirements rather than the technology-based requirement of secondary treatment. The procedure involved applications for waivers (from mandatory secondary treatment) by municipal discharges, and permits were to be granted if the ambient water quality was demonstrated or predicted to meet appropriate receiving water standards. The purpose basically was to build only those treatment facilities (i.e., secondary treatment plants) that were actually necessary to preserve ocean water quality. A case-by-case approach was adopted, in which actual ocean conditions at each proposed discharge site were considered.

This testimony will address two aspects of the proposed revisions in H.R. 3282 that appear to be contrary to the original purpose of Sec. 301(h): retreatment, and chemical treatment to control pathogens.

Pretreatment

Section 5(b) of H.R. 3282 (page 5, line 22) would add the following provision to Sec. 301(h):

* * * "(6) in the case of any treatment works serving a population of fifty thousand or more, with respect to any toxic pollutant introduced into such works for which there is no applicable pretreatment requirement in effect, the applicant has in effect a pretreatment program which, in combination with the treatment of discharges from such works, removes the same amount of such pollutant as would be removed if such works were to apply secondary treatment to discharges and if such works had no pretreatment program with respect to such pollutant;" * * *

Although I certainly agree with the intent of the Resolution to control toxic pollutants, I believe the proposed approach is unsound and unworkable for several reasons:

(1) *The level of control mandated by this proposed provision may be far more stringent than necessary to protect the ocean.* Consider a system such as San Francisco's

which serves an area that is almost entirely residential and light commercial (retail, financial, professional, etc.). In such a case, there are relatively low levels of toxic pollutants, entering the sewer system, mainly coming from diffuse sources (like chromium from plumbing fixtures, or cadmium and zinc from galvanized pipes). Even though the concentration of toxic substances may already be well below safe levels in primary plant effluents in conjunction with an existing pretreatment program, this Amendment would require waiver applicants to implement a more stringent and restrictive pretreatment program, even though all ocean requirements are met and no problems are identified.

(2) In the case municipalities with heavy industry, especially those using or producing toxicants that are not efficiently removed by secondary treatment, the pretreatment levels as specified in this Amendment might still be inadequate to protect water quality.

A far approach for establishing proper pretreatment is one based on the ocean water quality which is necessary to avoid chronic or acute effects on marine organisms or hazards to humans. The State of California Water Resources Control Board has in its 1978 "Ocean Plan",[1] successfully demonstrated an approach based on receiving water quality. For each outfall, effluent limits for a variety of toxic substances are set so that, after the initial buoyant jet mixing, the levels are below safe limits for ocean water quality based on toxicity tests. Pretreatment programs are then designed so that, after the wastewater is treated, these effluent limits will be met. San Francisco is complying with this approach, and should not be required to adopt another procedure that is not based on ocean water quality.

(3) The baseline proposed, i.e., assuming to pretreatment program, is ill-defined because all larger sewerage agencies have had industrial waste control programs for many years. (San Francisco's pretreatment program was initiated 10 years ago.) It would be impossible to reconstruct in a rational way what concentrations of toxic substances would be in the wastewater if the control programs did not exist. Many industrial processes have changed considerably, and some toxic substances simply aren't used anymore.

(4) The degree of removal of various toxic pollutants by the secondary treatment process is poorly defined and varies from system to system. It is therefore a poor basis upon which to base pretreatment requirements.

In summary, the proposed revision would result in substantial additional costs for San Francisco and similar cities without providing water quality benefits, because strict ambient requirements are already met. Alternate approaches, such as in the California Ocean Plan, are soundly based scientifically and are cost-effective.

Chemical treatment to control pathogens

The proposed revisions in HR 3282 include Sec. (9) as follows:

* * * "(9) the effluent which is discharged from such works is currently receiving primary treatment by screening, sedimentation, and skimming, and chemical treatment to control pathogens and meets the criteria established under section 304(a)(1) after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged."

There is no need to include "chemical treatment to control pathogens" in the Amendment's definition of primary treatment.

The purpose of primary treatment is to remove readily settleable and floatable solids. This removal process, in conjunction with the use of a well-designed outfall system, to provide high dilution and wide dispersal, provides valuable protection to the ocean. However, primary treatment is not intended to reduce pathogens or BOD (biological oxygen demand), except coincidentally with solids removal. Pathogens can instead be controlled in the ocean by discharge through a multiport outfall achieving high dilution far from shore. San Francisco has under construction a $180 million, 4½-mile-long, outfall which will achieve more than 100 to 1 initial dilution. This outfall has been designed to meet existing state and federally approved bacteriological standards for pathogen control without chemical disinfection.

Operating experience of other agencies in California with long outfall and multiport diffusers (i.e. City of Los Angeles at Hyperion and County Sanitation Districts of Orange County) shows that bacterial requirements are easily met without disin-

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[1] California State Water Resources Control Board, adopted and Water quality control plan for ocean waters of California, Resolution No. 7B-2, 15 pp.

California State Water Resources Control Board (1983). Draft Environmental Impact Report: Amendment of the Water Quality Control Plan, Ocean Waters of California (probably to be adopted in early 1984).

fection. The same basic design procedure has been used for the new San Francisco outfall.

Furthermore, since the by-products of chemical disinfection can be damaging to marine organisms, chemicals should be used only when necessary to meet bacteriological requirements. The California Ocean Plan does not require disinfection, and EPA dropped disinfection from the technical definition of secondary treatment several years ago.

The cost of this provision of San Francisco, after the new outfall is put into full operation, would be up to $4 million annually (in 1983 dollars) for chemical disinfection that would not be necessary to preserve water quality. Therefore I propose that "chemical treatment" be stricken from the text or, as in the case of S. 431, the words "where appropriate" be inserted.

Mr. ROE. Please proceed.

TESTIMONY OF NORMAN H. BROOKS, ENGINEERING CONSULTANT, CITY AND COUNTY OF SAN FRANCISCO, ACCOMPANIED BY JAN BERRY, ASSISTANT EXECUTIVE DIRECTOR, SAN FRANCISCO CLEAN WATER PROGRAM, DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF SAN FRANCISCO; STEVEN S. ROSENTHAL, LEGAL COUNSEL, CITY AND COUNTY OF SAN FRANCISCO; AND SHARON EDWARDS, WASHINGTON REPRESENTATIVE AND LEGISLATIVE COUNSEL, CITY AND COUNTY OF SAN FRANCISCO

Dr. BROOKS. Thank you, Mr. Chairman.

I am Norman H. Brooks, appearing today as an engineering consultant on marine disposal for the city and county of San Francisco. With me is Jan Berry, the assistant executive director of the San Francisco clean water program. The clean water program is a division of the Department of Public Works of the city and county of San Francisco.

Now, although I am appearing here on behalf of San Francisco, my regular position is James Irvine professor of environmental and civil engineering and director of the environmental quality laboratory at the California Institute of Technology.

I would like to add a few more words about my experience. As a consultant, I have worked on a variety of projects for major discharges on the west coast. In fact, I was involved in the design of the San Francisco 4½-mile outfall that is now under construction. Also, I have worked in Hawaii and abroad.

My specialty is the hydraulic design of long outfalls and diffusion structures as part of an overall system of pretreatment, treatment, and outfall diffusion to meet water quality requirements. In other words, I take the water quality requirements and help make a system that will meet those water quality requirements. In fact, the characteristics of the ocean, its depth, and stratification is an important part of my business and distinguishes east versus west, if you like.

I might say a little bit more about that later. I have developed some of the engineering techniques of outfall design which take advantage of the favorable characteristics of the Pacific coast to greatly improve water quality to such a degree that the 301(h) waiver program is technically appropriate.

I will be glad to answer questions in general about outfalls if you wish when I finish my statement. I will go back to the statement.

Section 301(h), an important amendment to the Clean Water Act in 1977, allowed municipal ocean discharges to meet water quality requirements rather than the technology-based requirement of secondary treatment. The procedure involved applications for waivers (from mandatory secondary treatment) by municipal discharges, and permits were to be granted if the ambient water quality was demonstrated or predicted to meet appropriate receiving water standards. The purpose basically was to build only those treatment facilities (that is, secondary treatment plants) that were actually necessary to preserve ocean water quality.

In other words, back to the system whereby you combine the pretreatment package that you need to meet water quality in a case-by-case approach which includes oceanographic considerations.

Now, I particularly want to address two technical aspects of the proposed considerations in H.R. 3282 that appear to be contrary to the original purpose of section 301(h); namely, pretreatment and chemical treatment to control pathogens. The original purpose, of course, is to have a water quality-based approach rather than a technology base.

On pretreatment, the proposed section 5(b) of H.R. 3282, would add the following provision to section 301(h):

> * * * (6) in the case of any treatment works serving a population of 50,000 or more, with respect to any toxic pollutant introduced into such works for which there is no applicable pretreatment requirement in effect, the applicant has in effect a pretreatment program which, in combination with the treatment of discharges from such works, removes the same amount of such pollutant as would be removed if such works were to apply secondary treatment to discharges and if such works had no pretreatment program with respect to such pollutant; * * *

I think this really means if you are not going to have a secondary treatment program, you ought to have a pretreatment program that does as well as secondary pretreatment would have done if you had had it.

Although I certainly agree with the intent of the resolution to control toxic pollutants, I believe the proposed approach is unsound and unworkable for several reasons:

First, the level of control mandated by this proposed provision may be far more stringent than necessary to protect the ocean. Consider a system such as San Francisco's which serves an area that is almost entirely residential and light commercial (retail, financial, professional, et cetera). In such a case, there are relatively low levels of toxic pollutants entering the sewer system, mainly coming from diffuse sources (like chromium from plumbing fixtures, or cadmium and zinc from galvanized pipes). Even though the concentration of toxic substances may already be well below safe levels in primary plant effluents in conjunction with an existing pretreatment program, this amendment would require waiver applicants to implement a more stringent and restrictive pretreatment program, even though all ocean requirements are met and no problems are identified.

Second, in the case of municipalities with heavy industry, especially those using or producing toxicants that are not efficiently removed by secondary treatment, the pretreatment levels as specified in this amendment might still be inadequate to protect water quality.

In other words, a far better approach for establishing proper pretreatment is one based on ocean water quality which is necessary to avoid chronic or acute effects on marine organisms or hazards to humans. The State of California Water Resources Control Board has in its 1978 ocean plan successfully demonstrated an approach based on receiving water quality. They are currently about to adopt a 1984 revision. For each outfall, effluent limits for a variety of toxic substances are set so that, after the initial buoyant jet mixing, the levels are below safe limits for ocean water quality based on toxicity tests.

Pretreatment programs are then designed so that, after the wastewater is treated, these effluent limits will be met. It is a combined package of pretreatment, treatment, and outfall mixing put all together that meets stringent water quality requirements. You can make them as stringent as you like, at least you are targetting the thing that you are really after, the water quality in the ocean.

San Francisco is complying with this approach, and should not be required to adopt another procedure that is not based on ocean water quality.

Item 3, the baseline proposed, that is, assuming no pretreatment program, is ill-defined because all large sewerage agencies have had industrial waste control programs for many years. San Francisco's pretreatment program was initiated 10 years ago. It would be impossible to reconstruct in a rational way what concentrations of toxic substances would be in the wastewater if the control programs did not exist. Many industrial processes have changed considerably, and some toxic substances simply aren't used anymore.

Four, the degree of removal of various toxic pollutants by the secondary treatment process is poorly defined and varies from system to system. It is therefore a poor basis upon which to base pretreatment requirements.

In summary, the proposed revision would result in substantial additional costs for San Francisco and similar cities without providing water quality benefits, because the strict ambient levels in the California ocean plan are soundly based scientifically and are cost-effective because they are related to the resultant water quality.

The other issue is related to chemical treatment to control pathogens. Here the difference between east and west is particularly important.

The proposed revisions in H.R. 3282 include section 9 as follows:

> * * * (9) the effluent which is discharged from such works is currently receiving primary treatment by screening, sedimentation, and skimming, and chemical treatment to control pathogens and meets the criteria established under section 304(a)(1) after initial mixing in the waters surrounding or adjacent to the point at which such effluent is discharged.

In my opinion, there is no need to include "chemical treatment to control pathogens" in the amendment's definition of primary treatment.

The purpose of primary treatment is to remove readily settleable and floatable solids. This removal process, in conjunction with the use of a well-designed outfall system to provide high dilution and wide dispersal, provides valuable protection to the ocean. However, primary treatment is not intended to reduce Pathogens coincidentally with solids removal. Pathogens can instead be removed by

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achieving high dilution far from shore. This is a technology we are using on the west coast.

San Francisco has under construction a $180 million, 4½ mile long outfall which will achieve more than 100 to 1 initial dilution. This outfall has been designed to meet existing State and federally approved bacteriological standards for pathogen control without chemical disinfection. In fact, I might add that the California ocean plan specifically directs dischargers to design their systems so that the bacteriological requirements can be met without disinfection because of the belief and the known fact that the byproducts of disinfection, of chlorination, and ozonenation can be damaging to marine life.

Operating experience of other agencies in California with long outfall and multiport diffusers (that is, city of Los Angeles at Hyperion and county sanitation districts of Orange County) shows that bacterial requirements are easily met without disinfection. While at the same time, meeting all the bacteriologic requirements of the California Department of Public Health and the California Water Resources Control Board. The same basic design procedure has been used for the new San Francisco outfall.

Furthermore, since the byproducts of chemical disinfection can be damaging to marine organisms, chemicals should be used only when necessary to meet bacteriological requirements. There are many places particularly on the east coast where such disinfection will be required.

The California ocean plan does not require disinfection, and EPA dropped disinfection from the technical definition of secondary treatment several years ago. I think the main point here is that the requirement ought to be stated that you met the bacterial requirements in the receiving waters and then wait and see what you need to do to achieve that, whether you can do it naturally in the ocean, which is a hostile environment for bacteria and pathogens, or whether you have to do it chemically.

The cost of this provision to San Francisco, after the new outfall is put into full operation, would be up to $4 million annually—in 1983 dollars—for chemical disinfection that would not be necessary to preserve water quality. Therefore, I propose that "chemical treatment" be striken from the text or, as in the case of section 431, the words "where appropriate" be inserted.

I might add in the same vein there is another provision in the Senate version of the bill which says that primary treatment should have 30 percent BOD removal. Again, for west coast outfalls and deep water which has lots of oxygenation capacity, there is no need for a specific technical requirement of BOD removal. BOD removal is a purpose of secondary treatment not of primary treatment, so to say that primary treatment should have 30 percent BOD removal doesn't make any sense in terms of a water quality objective.

I am pleased that that is not in your version of the bill, but if it comes up for conference, I hope you will recommend to your Senate colleagues that that also be stricken as a requirement because it is not consistent with the 301(h) waiver.

I would like to close with just a couple of remarks about east versus west. I know it is a matter of some interest. I sometimes tell

my students on the first day of class, I say, you know, if you look at the atmosphere, you find that in the East it blows a lot more than it does in the West. They don't have the inversion that we do in Los Angeles with the smog problem, but the reverse is true in the ocean. In the ocean on the east coast, we have a very flat, shallow shelf. If you go out 12 miles here, you are lucky if you have a depth, I am not sure exactly but it is less than 100 feet, maybe 60 or 70 feet like on the New York Bite, but on the west coast, we have a relatively deep ocean. If you go 12 miles off Los Angeles, you are in 2,000 feet of water instead of 60 to 100 feet of water. The shelf is narrow. It drops deeply and we have a lot of flushing capability and a lot of currents.

So we can sum it up and say, "Well, the people who sit in Washington tend to give us too much for ocean pollution control and too little for air pollution control. They see how the atmosphere works and how the air pollution control works from the east coast point of view rather than from the west coast."

I will be happy to answer your questions.

Mr. ROE. Thank you very much for your testimony.

Do any of your colleagues have comments to make?

Ms. BERRY. I have a very brief statement.

I am Jan Berry, assistant director of the San Francisco program. I appreciate also the opportunity to speak with you today on the subject of H.R. 3282. Dr. Brooks outlined the concerns that San Francisco has with two rather limited and specific portions of this legislation. While I share those concerns and will address them from a slightly different angle, I am also here to assure you that San Francisco residents and its political leadership are firmly in support of the overall thrust of the Clean Water Act. We very much desire to see it continue and see the protective measures that it contains continued and we want to work with you in any way that we can to achieve the environmental benefits that should, by all rights, accrue.

San Francisco has earned a reputation for being an environmentally sensitive and aware area. Some have called us fanatics, but we are after all surrounded by water on three sides. We have made, in cooperation with other municipalities and the State of California, some great strides in protecting and preserving San Francisco Bay particularly and also the ocean waters of the Golden Gate and just to the west along our shoreline.

We have no interest in degrading the ocean waters anymore than we have in degrading the bay waters. Citizens in all sections of our cities, including the most impoverished areas, are very strongly in agreement that we have much to gain by participating in the clean water grants construction program.

San Francisco has been embarked since 1973 on a $1.3-billion sewer construction program that has three basic purposes. One is to upgrade the level of treatment from primary to secondary. Second, in some areas on the bayside to control combined sewer overflows in a marine estuary—and I would remark if it is raining anything like this in San Francisco, we definitely are polluting San Francisco Bay; and third, to shift the discharge from San Francisco Bay to 4½ miles offshore in the Pacific Ocean. This construction program is reviewed periodically to make sure that we are indeed

meeting all Federal requirements and will attain Federal requirements for water quality control and are able to keep costs in control in these limited resource times.

Standards have to be met in a fiscally responsible way and that is what we are trying to design our program to do. We are trying to hit the most important problems with the resources we have at the time. At this time we have achieved 73 percent of our environmental goal at about 42 percent of our anticipated costs. By 1986, with the construction programs we have underway, we anticipate being able to achieve approximately 93 percent of our environmental goal at about 58 percent of our anticipated costs. These percentages are based on actual volume of sewage flow that is captured and taken to our treatment plants for treatment.

The remaining tasks that we have which will take the rest of the money are to correct an acute combined sewer overflow problem and to shift our discharge locations to the ocean. These are costly parts of the problem and we are addressing them at a time of severely restricted financial resources here at the Federal level and of course in California and San Francisco specifically.

It is absolutely essential for us to focus our financial resources and our technical energies on our most important problems or we will fail a goodly number of our citizens.

As Dr. Brooks has pointed out, San Francisco isn't based on the kind of industry that creates a toxics problem and we are controlling what we do generate with an existing pretreatment program instituted 10 years ago. To control pathogens without chemical disinfection, we are constructing a $180 million, 4½-mile-long high dilution outfall. The added expense of a midcourse correction, if you will, when it really cannot enhance our environmental position is very difficult for me to justify in Bayview, Hunters Point, and in other areas which are concerned about the combined sewer overflow problem.

When the 301(h) waiver program was adopted, everyone expected western cities would apply and be successful in demonstrating adequate environmental protection. We are continuing to submit technical information to EPA on our own particular application. I assure you that even if resources were unlimited in San Francisco, we would be here today to discuss with you our concerns about requiring chemical disinfection across the board.

I assure you also that what we desperately need, in San Francisco at least, is continued and additional funding for the correction of combined sewer overflows into San Francisco Bay.

I am grateful for your time. If you have questions of myself on our overall program or of Dr. Brooks on the technical aspects of the ocean outfall, we would be very glad to answer those and I have some graphics, too.

Mr. ROE. Very fine.

Are there any other comments?

Dr. BROOKS. I would be glad to introduce into the record the latest draft ocean water quality control plan for ocean waters of California which does indicate a stringent control of trace contaminants which in most instances is stricter than EPA's.

Mr. ROE. No objection. So ordered.

[The information follows:]

WATER QUALITY CONTROL PLAN FOR OCEAN WATERS OF CALIFORNIA

INTRODUCTION

In furtherance of legislative policy set forth in Section 13000 of Division 7 of the California Water Code (Stats. 1969, Chap. 482) pursuant to the authority contained in Section 13170 (Stats. 1971, Chap. 1288) the State Water Resources Control Board hereby finds and declares that protection of the quality of the ocean* waters for use and enjoyment by the people of the State requires control of the discharge of waste to ocean waters in accordance with the provisions contained herein.

This plan is applicable, it its entirety, to point source discharges to the ocean. Nonpoint sources of waste discharges to the ocean are subject to Chapter I - Beneficial Uses, Chapter II - Water Quality Objectives, Chapter III - General Requirements, Chapter IV - Table B (wherein compliance with water quality objectives shall, in all cases, be determined by direct measurements in the receiving waters), and Chapter V - Discharge Prohibitions.

This plan is not applicable to discharges to enclosed* bays and estuaries* or inland waters nor is it applicable to vessel wastes, or the control of dredging spoil.

Provisions regulating the thermal aspects of waste discharged to the ocean are set forth in the Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California.

Chapter I
BENEFICIAL USES

The beneficial uses of the ocean waters of the State that shall be protected include industrial water supply, recreation, esthetic enjoyment, navigation, and preservation and enhancement of fish, wildlife, and other marine resources or preserves.

Chapter II
WATER QUALITY OBJECTIVES

This chapter sets forth limits or levels of water quality characteristics for ocean waters to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The discharge of waste* shall not cause violation of these objectives.

The Water Quality Objectives and Effluent Quality Requirements are defined by a statistical distribution when appropriate. This method recognizes the normally occurring variations in treatment efficiency and sampling and analytical techniques and does not condone poor operating practices.

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* See Appendix for definition of terms

Compliance with the water quality objectives of this chapter shall be determined from samples collected at stations representative of the area within the waste field where initial dilution is completed.

A. Bacteriological Characteristics

1. Body-Contact Standards

Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for body-contact sports, as determined by the Regional Board, but including all kelp* beds, the following bacteriological objectives shall be maintained throughout the water column:

a. Samples of water from each sampling station shall have a concentration of total coliform organisms less than 1,000 per 100 ml (10 per ml); provided that not more than 20 percent of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 ml (10 per ml), and provided further that no simgle sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml (100 per ml).

b. The fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200 per 100 ml nor shall more than 10 percent of the total samples during any 60-day period exceed 400 per 100 ml.

The "Initial* Dilution Zone" of wastewater outfalls shall be excluded from designation as "kelp beds", and Regional Boards should extend the area of such exclusion zone where warranted. Adventitious assemblages of kelp plants on waste discharge structures (e.g. outfall pipes and diffusers) do not constitute kelp beds.

2. Shellfish Harvesting Standards

At all areas where shellfish* may be harvested for human consumption, as determined by the Regional Board, the following bacteriological objectives shall be maintained throughout the water column:

The median total coliform concentration shall not exceed 70 per 100 ml, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

B. Physical Characteristics

1. Floating particulates and grease and oil shall not be visible.

2. The discharge of waste* shall not cause esthetically undesirable discoloration of the ocean surface.

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* See Appendix for definition of terms

3. Natural* light shall not be significantly* reduced at any point outside the initial* dilution zone as the result of the discharge of waste.

4. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded*.

C. Chemical Characteristics

1. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste* materials.

2. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

3. The dissolved sulfide concentration of waters in and near sediments shall not be significantly* increased above that present under natural conditions.

4. The concentration of substances set forth in Chapter IV, Table B, in marine sediments shall not be increased to levels which would degrade* indigenous biota.

5. The concentration of organic materials in marine sediments shall not be increased to levels which would degrade marine life.

6. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

D. Biological Characteristics

1. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded*.

2. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

E. Radioactivity

1. Discharge of radioactive waste* shall not degrade marine life.

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* See Appendix for definition of terms

Chapter III
GENERAL REQUIREMENTS FOR MANAGEMENT OF WASTE DISCHARGE TO THE OCEAN

A. Waste* management systems that discharge to the ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.

B. Waste discharged to the ocean must be essentially free of:

1. Material that is floatable or will become floatable upon discharge.

2. Settleable material or substances that may form sediments which will degrade* benthic communities or other aquatic life.

3. Substances which will accumulate to toxic levels in marine waters, sediments or biota.

4. Substances that significantly* decrease the natural light to benthic communities and other marine life.

5. Materials that result in esthetically undesirable discoloration of the ocean surface.

C. Waste effluents shall be discharged in a manner which provides sufficient initial* dilution to minimize the concentrations of substances not removed in the treatment.

D. Location of waste discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:

1. Pathogenic organisms and viruses are not present in areas where shellfish* are harvested for human consumption or in areas used for swimming or other body-contact sports.

2. Natural water quality conditions are not altered in areas* designated as being of special biological significance.

3. Maximum protection is provided to the marine environment.

Waste that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing and body-contact sports areas to maintain applicable bacteriological standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard should be used.

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* See Appendix for definition of terms

Chapter IV
QUALITY REQUIREMENTS FOR WASTE DISCHARGES (EFFLUENT QUALITY REQUIREMENTS)

This chapter sents forth the quality requirements for waste* discharge to the ocean*.

Table A limitations apply only to publicly owned treatment works and industrial discharges for which Effluent Limitations Guidelines have not been established pursuant to Sections 301, 302, 304, or 306 of the Federal Clean Water Act.

Table B limitations apply to all discharges within the jurisdiction of this plan.

Table A limitations, and effluent concentrations calculated from Table B limitations, shall apply to a discharger's total effluent, of whatever origin, except where otherwise specified in this plan.

The State Board is authorized to administer and enforce effluent requirements established pursuant to the Federal Clean Water Act. Effluent limitations established under Sections 301, 302, 306, 307, 316, 403, and 405 of the aforementioned Federal Act and administrative procedures pertaining thereto, are included in this plan by reference. Compliance with Table A limitations, or Environmental Protection Agency Effluent Limitations Guidelines for industrial discharges, based on Best Practicable Control Technology, shall be the minimum level of treatment acceptable under this plan, and shall define reasonable treatment and waste control technology.

TABLE A
MAJOR WASTEWATER CONSTITUENTS AND PROPERTIES

	Unit of measurement	Limiting Concentrations: Monthly (30 day Average)	Limiting Concentrations: Weekly (7 day Average)	Maximum at any time
Grease and Oil	mg/l	25	40	75
Suspended Solids		see below+		
Settleable Solids	mg/l	1.0	1.5	3.0
Turbidity	JTU	75	100	225
pH	units	within limits of 6.0 to 9.0 at all times		
Toxicity* Concentration	tu	1.5	2.0	2.5

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* See Appendix for definition of terms

+Suspended Solids: Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean, except that when influent levels of suspended solids are below 240 mg/l the effluent limitations shall be 60 mg/l. Regional Boards may, with the concurrence of the State Board and the Environmental Protection Agency, adjust the lower effluent concentration limit (the 60 mg/l above) to suit the environmental and effluent characteristics of the discharge, and to provide for water* reclamation.

TABLE B
TOXIC MATERIALS LIMITATIONS

Effluent limitations shall be imposed in a manner prescribed by the State Board such that the concentrations set forth below as water quality objectives shall not be exceeded in the receiving water upon completion of initial dilution, except that limitations indicated for radioactivity shall apply directly to the undiluted waste effluent.

	Unit of Measurement	Limiting Concentrations 6-Month Median	Daily Maximum	Instantaneous Maximum
Arsenic	ug/l	8	32	80
Cadmium	ug/l	3	12	30
Chromium (Hexavalent) see below, a)	ug/l	2	8	20
Copper	ug/l	5	20	50
Lead	ug/l	8	32	80
Mercury	ug/l	0.14	0.56	1.4
Nickel	ug/l	20	80	200
Silver	ug/l	0.45	1.8	4.5
Zinc	ug/l	20	80	200
Cyanide	ug/l	5	20	50
Total Chlorine Residual	ug/l	2	11	126
(For intermittent chlorine sources, see below, b)				
Ammonia (expressed as nitrogen	ug/l	600	2400	6000
Toxicity* Concentration	tu	0.05	-	-
Phenolic Compounds (non-chlorinated)	ug/l	30	120	300
Chlorinated Phenolics	ug/l	1	4	10
Aldrin and Dieldrin	ug/l	0.002	0.004	0.006
Chlordane* and Related Compounds	ug/l	0.003	0.006	0.009
DDT* and Derivatives	ug/l	0.001	0.002	0.003
Endrin	ug/l	0.002	0.004	0.006
HCH*	ug/l	0.004	0.008	0.012
PCBs	ug/l	0.003	0.006	0.009
Toxaphene	ug/l	0.007	0.014	0.021
Radioactivity	Not to exceed limits specified in Title 17, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the California Administrative Code.			

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* See Appendix for definition of terms

a) Dischargers may at their option meet this limitation as a total chromium limitation.

b) Water quality objectives for total chlorine residual applying to intermittent discharges not exceeding two hours, shall be determined through the use of the following equation:

$$\log y = -0.33 (\log x) + 2.1$$

where: y = the water quality objective (in ug/l) to apply when chlorine is being discharged;

x = the duration of uninterrupted chlorine discharge in minutes.

Effluent limitations for substances identified in Table B with the exception of Radioactivity, shall be determined through the use of the following equation:

$$Ce = Co + Dm (Co - Cs) \qquad (1)$$

where:

Ce = the effluent concentration limit,
Co = the concentration to be met at the completion of initial* dilution,
Cs = background seawater concentration (see Table C below),
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater.

The Executive Director of the State Board shall identify standard dilution models for use in determining Dm, and shall assist the Regional Board in evaluating Dm for specific waste dischargers. Dischargers may propose alternative methods of calculating Dm, and the Regional Board may accept such method upon verification of its accuracy and applicability.

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* See Appendix for definition of terms

TABLE C
BACKGROUND SEAWATER CONCENTRATIONS (Cs)

Waste Constituent	Cs (ug/l)
Arsenic	3
Cadmium	0
Chromium (Hexavalent)	0
Copper	2
Lead	0
Mercury	0.06
Nickel	0
Silver	0.16
Zinc	8
Cyanide	0
Phenolic Compounds	0
Total Chlorine Residual	0
Ammonia (Expressed as nitrogen)	0
Toxicity* Concentration (in toxicity units)	0
Chlorinated Pesticides and PCB's	0

The six-month median effluent concentration limit shall apply as a moving median of daily values for any 180 day period in which daily values represent flow weighted average concentrations within a 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.

The daily maxium effluent concentration limit shall apply to flow weighted 24-hour composite samples.

The instantaneous maximum shall apply to grab sample determinations.

Discharge requirements shall also specify effluent requirements in terms of mass emission rate limits utilizing the general formula:

$$\text{lbs/day} = 8.34 \times Ce \times q \qquad (2)$$

The six-month median limit on daily mass emissions shall be determined using the six-month median effluent concentration as Ce and the observed flow rate Q in millions of gallons per day. The daily maximum mass emission shall be determined using the daily maximum effluent concentration limit as Ce and the observed flow rate Q in millions of gallons per day.

Any significant change in waste* flow shall be cause for reevaluating effluent quality requirements.

If a calculated Ce value falls below the limit of detection of the test method specified in the Code of Federal Regulations, 40 CFR 136 the limit of detection shall serve as the limiting effluent concentration.

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* See Appendix for definition of terms

The State or Regional Board may, at their discretion, specify test methods which are more sensitive than those specified in 40 CFR 136. Total chlorine residual is likely to be a "limit of detection" effluent requirement in many cases. The limit of detection of total chlorine residual in standard test methods is less than, or equal to, 20 ug/l.

Due to the large total volume of powerplant and other heat exchange discharges, special procedures must be applied for determining compliance with Table B limitations on a routine basis. Effluent concentration values (Ce) shall be determined through the use of Equation 1 considering the minimal probable initial* dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in Equation 2. The mass emission limits will then serve as requirements applied to all inplant waste streams taken together which discharge into the cooling water flow, except that limitations on total chlorine residual, toxicity concentration, and radioactivity, as well as instantaneous maximum limitations on Table B toxic materials shall apply to, and be measured in, the combined final effluent.

Chapter V
DISCHARGE PROHIBITIONS

A. Hazardous Substances

The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.

B. Areas of Special Biological Significance

Waste* shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.

C. Sludge

Pipeline discharge of sludge to the ocean is prohibited by federal law; the discharge of municipal and industrial waste sludge directly to the ocean*, or into a waste stream that discharges to the ocean, is prohibited by this Plan. The discharge of sludge digester supernatant directly to the ocean*, or to a waste stream that discharges to the ocean without further treatment, is prohibited.

It is the policy of the State Board that the treatment, use and disposal of sewage sludge shall be carried out in the manner found to have the least adverse impact on the total natural and human environment. Therefore, if federal law is amended to permit such discharge, which could affect California waters, the State Board may consider requests for exceptions to this section under Chapter VI, F. of this Plan, provided further that an

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* See Appendix for definition of terms

Environmental Impact Report on the proposed project shows clearly that any available alternative disposal method will have a greater adverse environmental impact than the proposed project.

D. By-Passing

The by-passing of untreated wastes containing concentrations of pollutants in excess of those of Table A or Table B to the ocean* is prohibited.

Chapter VI
GENERAL PROVISIONS

A. Effective Date

This Plan is in effect as of the date of adoption by the State Water Resources Control Board.

B. Waste Discharge Requirements

The Regional Boards may establish more restrictive water quality objectives and effluent quality requirements than those set forth in this Plan as necessary for the protection of beneficial uses of ocean waters.

Regional Boards may impose alternative less restrictive provisions than those contained within Table B of the Plan, provided an applicant can demonstrate that:

Reasonable control technologies (including source control, material substitution, treatment and dispersion) will not provide for complete compliance; or

Any less stringent provisions would encourage water* reclamation;

Provided further that:

a) Any alternative water quality objectives shall be below the conservative estimate of chronic toxicity, as given in Table D below, and such alternative will provide for adequate protection of the marine environment;

b) A receiving water toxicity objective of 0.05 tu is not exceeded; and

c) The State Board and the environmental Protection Agency concur in the Regional Board findings and alternative limits.

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* See Appendix for definition of terms

TABLE D
CONSERVATIVE ESTIMATES OF CHRONIC TOXICITY

Constituent	Estimate of Chronic Toxicity (ug/l)
Arsenic	a) (notes below)
Cadmium	7.6
Hexavalent chromium	14.6
Copper	6.4
Lead	26.0
Mercury	1.6
Nickel	146.0
Silver	a)
Zinc	56.0
Cyanide	a)
Total Chlorine Residual	10.0
Ammonia	4,000.0
Phenolic Compounds (non-chlorinated)	a)
Chlorinated Phenolics	a)
Chlorinated Pesticides and PCB's	b)

a. There is insufficient data for arsenic, silver, cyanide, and phenolics to estimate chronic toxicity levels. Requests for modification of water quality objectives for any of these five waste constituents must be supported by chronic toxicity data for representative sensitive species. In such cases, applicants seeking modification of water quality objectives should consult the Regional Water Quality Control Board to determine the species and test conditions necessary to evaluate chronic effects.

b. Limitations on chlorinated pesticides and PCB's shall not be modified so that the total of these compounds is increased above the limitations in Table B (6-Month Median = 0.022 ug/l, Daily Maximum = 0.044 ug/l, and Instantaneous Maximum = 0.066 ug/l).

C. Revision of Waste Discharge Requirements

The Regional Board shall revise the waste discharge requirements for existing discharges as necessary to achieve compliance with this Plan and shall also establish a time schedule for such compliance.

* See Appendix for definition of terms

D. Monitoring Program

The Regional Board shall require dischargers to conduct self-monitoring programs and submit reports necessary to determine compliance with the waste discharge requirements, and may require dischargers to contract with agencies or persons acceptable to the Regional Board to provide monitoring reports.

Where the Regional Board is satisfied that any substance(s) of Table B will not significantly occur in a discharger's effluent, the Regional Board may elect not to require monitoring for such substance(s). Such election does not relieve the discharger from the requirement to meet the limitations of Table B.

The Regional Board may require monitoring of bioaccumulation of toxicants in the discharge zone. Organisms and techniques for such monitoring shall be chosen by the Regional Board on the basis of demonstrated value in waste discharge monitoring.

E. Areas of Special Biological Significance

Areas of special biological significance shall be designated by the State Board after a public hearing by the Regional Board and review of its recommendations.

F. State Board Exceptions to Plan Requirements

The State Board may, subsequent to a public hearing, and with the concurrence of the Environmental Protection Agency, grant exceptions to any provision of this Plan where the Board determines:

1. The exception will not compromise protection of ocean* waters for beneficial uses, and

2. The public interest will be served.

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* See Appendix for definition of terms

APPENDIX

DEFINITION OF TERMS

CHLORDANE AND RELATED COMPOUNDS shall mean the sum of chlordane (cis + trans), trans-nonachlor, oxychlordane, heptachlor and heptachlor epoxide.

DDT AND DERIVATIVES shall mean the sum of the p,p' and o,p' isomers of DDT, DDD (TDE) and DDE.

DEGRADE: Degradation shall be determined by analysis of the effects of waste discharge on species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species.

ENCLOSED BAYS are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

ESTUARIES AND COASTAL LAGOONS are waters at the mouths of streams which serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

INITIAL DILUTION is the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

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For shallow water submerged discharges, surface discharges, and nonbuoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

For the purpose of this Plan, minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates shall be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure.

KELP BEDS are significant aggregations of marine algae of the genus *Macrocystis*. Kelp beds include the total foliage canopy of *Macrocystis* plants throughout the water column.

NATURAL LIGHT: Reduction of natural light may be determined by the Regional Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Board.

OCEAN WATERS are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

SHELLFISH are organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e. mussels, clams and oysters).

SIGNIFICANT difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

TOXICITY CONCENTRATION: This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Toxicity Concentration (Tc)

Expressed in Toxicity Units (tu)

$$Tc\ (tu) = \frac{100}{96\text{-hr. } TLm\%}$$

b. Median Tolerance Limit (TLm%)

TLm (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard test species. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, the TLm may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hr. TLm due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$Tc\ (tu) = \frac{\log\ (100 - S)}{1.7}$$

S = percentage survival in 100% waste.
If S > 99, Tc shall be reported as zero.

WASTE: As used in this Plan, waste includes a discharger's total discharge, of whatever source.

WATER RECLAMATION: The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

Mr. ROE. Let me just ask one question of Ms. Berry. You mentioned that the San Francisco program is about $1.3 billion?

Ms. BERRY. $1.3 billion, right.

Mr. ROE. That $1.3 billion is your estimated cost of production?

Ms. BERRY. Right.

Mr. ROE. Does that include the elimination of the combined sewer problem?

Ms. BERRY. Yes, it does.

Mr. ROE. Do you know offhand how much of the $1.3 billion relates in cost?

Ms. BERRY. Yes, I do.

In the southeast sector of the city, which is our most difficult problem for combined sewer overflows, we have about $118 million total. That is broken down, however, into much smaller segments, about $20 million to $30 million each because there is a series of little coves in that area. Each small project that we do gives an immediate environmental benefit for the neighbors in that area. We have tremendous odor problems. We only get about 20 inches of rain in San Francisco in a year and we have a lot of days when it rains and the next day it is very sunny.

The odor is unbelievable. It is a very shallow and very slow-moving area inside San Francisco Bay. We have addressed and corrected the combined sewer overflow problems up along the northern part of the city in the Fisherman's Wharf area and around to the Golden Gate, but we have that area in the slower moving part of the bay that we need to address.

Mr. ROE. And it is $118 million.

Ms. BERRY. For the whole program.

Mr. ROE. Has EPA approved your plan for the removal of the combined sewer situation?

Ms. BERRY. Yes. What we are moving through are the environmental review periods right now. We are going through our own board of supervisors next week to get their adoption of the environmental review documents and our application for the first part of our program will be submitted to the State and EPA after that time.

Mr. ROE. Did EPA approve your step 1 overall program?

Ms. BERRY. Yes.

Mr. ROE. Are they going to fund the elimination of combined source?

Ms. BERRY. If they approve our application, they will, but the application is not to be submitted yet. We are waiting for the issuance of Federal guidelines on the CSO grant program which we expect out in December. At that point, we will submit our application. It should be due in March or April.

Mr. ROE. The other thing I think we ought to be checking on is the moving in the other body.

Ms. BERRY. I might mention that the GAO report that came out earlier this year, they looked at our program very intently and they were convinced that the CSO problem was one very worthy of being addressed in San Francisco and supported that in full. EPA's review panel last year also reviewed the program in full and said that it would be a very worthy addition.

Mr. ROE. If there are no further statements, are there any questions?

Mr. EDGAR. Thank you, Mr. Chairman.

I just have one question. Have you had any analysis of the cumulative effect on the ocean if all major cities adopted the plan that you have suggested of ocean dumping?

Dr. BROOKS. Yes. In southern California, there is an organization, the southern California coastal water research project, which covers the area from Orange County, Los Angeles County, and city and Ventura County and has the specific purpose to view the regional water quality and it is a field far away from the individual discharge. There is an excellent program which shows that the southern California Bight is assimilating the waste from these outfalls very well.

Mr. EDGAR. There is no cumulative or expotential growth of the materials?

Dr. BROOKS. No, because the ocean is dynamic. The water in this southern California Bight—and I will get back to San Francisco in a minute—exchanges every 3 months or so. In other words, there are currents coming through. There are eddies that mix this water with deep ocean water so that the water just doesn't hang around there like in the Chesapeake Bay or the New York Bight. It is moving through.

So when you add this oxygen-demanding waste, it mixes with the ocean water to such a high degree that it can be assimilated along with the waste products of the ocean itself.

There are locally some effects.

Mr. EDGAR. So what you are saying is that you are replacing the water in the area and the pollutants are being washed away someplace.

Dr. BROOKS. That is correct.

Mr. EDGAR. The question I am asking is over time does that build up so that the replacement water comes in not as fresh and clean?

Dr. BROOKS. One of the numbers I like to use is the plankton in the southern California Bight produce as much organic carbon waste as 500 million people. The ocean is already a big biological kettle. Most of the problems are due to the fact that urban areas probably discharge their waste into too small an area. If you have a rapidly flushing ocean and you get out there far enough to get with it, then you can put these ecosystem products back in the ocean just like recycling land. It puts nutrients back in. You don't want to put toxics into the ocean. Don't misunderstand me. Toxics you ought to control to the very level that you need to in order to avoid any effect in the ocean.

In San Francisco, there are no other discharges anywhere in the region which would have any overlapping effects. There is a very small one down the coast at Pacifica, but most of the discharges are inside San Francisco Bay like Oakland and so on. But the currents in San Francisco are stronger than any other outfall I have worked on.

Mr. ROE. You speak to the ocean as being dynamic and then we speak to the issue that there is not that much of a toxic intrusion in the present economic posture, if you like, of the area.

Dr. BROOKS. Yes.

Mr. ROE. Does San Francisco or its surrounding communities, if they have some kind of a program coming in that may produce the toxic issue, do they have to get a special permit or clearance before they are allowed to dump it?

Dr. BROOKS. Absolutely. The California ocean plan is very strict. You simply may not discharge and I just gave you my copies. There is a whole list of about 20.

Mr. ROE. We don't have time to go into any detail. All I am trying to get at is, is there some special law in California that affects San Francisco that says that if anybody wants to come in there and build any type of manufacturing process or whatever, that they have to get a special clearance from I guess it is the sewage authority in the area?

Dr. BROOKS. Absolutely.

Ms. BERRY. There is the regional water quality control board.

Mr. ROE. They have to get a permit from them?

Ms. BERRY. Absolutely.

Dr. BROOKS. It is very tight.

Mr. ROE. Mr. Edgar?

Mr. EDGAR. Mr. Chairman, I don't have any further questions.

I just want to be sure that we understand the difference from the west coast and the east coast as you tried to point out to us and I appreciate your answer.

Ms. BERRY. If I may add just one very brief point, when San Francisco was initially looking at the ocean outfall, we participated under State auspices in a 2-year research study in the ocean and hired outside consultants for that because city staff are not oceanographers. It is a thick research project. I did not bring it with me today, but it has ended up being a very valuable study statewide to show the kinds of bacterial organisms and the transport of the effluent in the area so the outfall was not done without a great deal of research in advance.

Mr. EDGAR. Thank you.

Mr. STANGELAND. Dr. Brooks, I think you alluded to it, but as Mr. Edgar brings out, you did not really specify. I think what you are telling us is there ought to be two sets of rules, regulations, requirements for water quality standards east to west; that you should not be discussing the same standard with both; is that right?

Dr. BROOKS. Not quite. You may have the same water quality standard but the end result that you want in the ocean, you want to be very good. You want to control water quality, OK. You can set the same number for bacterial requirements for water used for swimming and shellfish. Those can be the same east and west.

But the point is, what you have to do in a cost effective way to achieve those numbers is a different technology in the west than it is in the east.

Mr. STANGELAND. They are the same standards, then, but different requirements to meet those standards, different methodologies?

Dr. BROOKS. I think California's approach is that they do not specify the technology. They say, here is the water quality that we want to come out as a result.

This is the whole philosophy of the 301(h) waiver. We demand that the waiver applicant produce documentation to prove that the

water quality will be maintained in excellent characteristics, and then the discharger is allowed some flexibility in the mix that he derives from treatment, pretreatment, and outfall location and mixing. In other words, balancing the ocean and the treatment in an overall system to achieve the required result. That is the cost effective way to do it.

If you just say build this secondary treatment plant or chlorinate, then you are sort of telling people to do things which in some places may be just throwing your money away because there may be a much cheaper way to get the same water quality.

Do you see what I mean?

Mr. STANGELAND. Yes.

Dr. BROOKS. OK.

Mr. STANGELAND. You expressed concern for excessive pretreatment requirements for a 301(h) waiver. Will you agree that a local pretreatment program of some sort is an appropriate requirement in industrial areas?

Dr. BROOKS. Absolutely. But again, my point is that you ought to be deriving your concern from the water quality and you may end up with different pretreatment programs for different areas depending on what the ocean is like in order to have a safe maintenance of high water quality.

So if you are a heavy industry in Chesapeake Bay, you are going to have a lot of different pretreatment needs than if you are a small industry on a big ocean or in Hawaii maybe.

Mr. STANGELAND. How do you evaluate San Francisco's pretreatment program and how essential has it been?

Dr. BROOKS. Well, I think it is absolutely essential. I think every major city must have a pretreatment program.

Now, the problem of pretreatment programs is that it would be nice if you could shut off all these toxics down to zero but in the environmental business, there are no zeros. There are only some point zero zero. There are always some numbers left.

So the problem is that to get down to very low numbers on some things, it takes an extraordinary amount of effort, both in regulation and in technical measures, and therefore you ought to be guided by what you need to do in order to produce good water quality so that you don't spend an excessive amount of money being extremely stringent on some things where you have got some other environmental problem over here which you could spend your money on much more efficiently.

Ms. BERRY. Our pretreatment program is, by the way, approved by EPA. We have had it in existence for about 10 years.

Dr. BROOKS. I might also say that the discharge from the Richmond sunset plant that will go into the new outfall will, according to the California ocean plan, meet the toxic substances requirements of the ocean plan by a factor of 5 to 400 times better than the existing pretreatment program has already achieved, projected from the time the plant starts up compared to the California ocean plan.

They are already way below the California ocean plan and that is why the concern about this other language. If you are only going to have primary treatment, you have to predict what it would have

been if you had secondary and pretreatment programs, a lot of second-guessing which does not give you water quality.

Mr. STANGELAND. Ms. Berry, if I understand correctly, you said that you will have expended 52 percent of your moneys for your program and at that point, you will have achieved 93 percent of your goals. Will it be cost effective to spend the other 48 percent to achieve that last 7 percent of your goals?

Ms. BERRY. It is 93 percent of our goals based on a volume of sewage that is collected and treated. If you measure goal attainment by the correction of discharge, then we are not meeting that high a level because we do still need to get bayside flows out to a higher dilution area.

It is like any environmental program. I worked in air quality before I came to the water quality program 4 years ago. It is that last 7 percent that seems to kill you on the budget line. We will be up to about the 58-percent level in terms of cost but we will be much above that in terms of environmental achievement, except for those last two tasks.

We see the key part being the CSO problem that is inside the bay and even that cost does not bring us anywhere near the $1.3-billion level, but to meet all Federal standards would cost the additional amount and our citizens would prefer to do it that way. They have voted twice now to approve the local share of that size of program.

Mr. STANGELAND. Thank you.

No further questions.

Mr. ROE. Are there any further questions of these witnesses?

The gentleman from Wisconsin.

Mr. MOODY. Yes, thank you.

I was interested in your comments about CSO. My city of Milwaukee has a CSO problem too. A number of the older cities do.

How are you funding your CSO cleanup?

Ms. BERRY. We are participating in the clean water construction grants program, so we have solved about 50 percent of the problem using the combination of 75 percent Federal funding and 12½ percent local and 12½ percent State.

We are using a system of reservoirs and transport storage facilities that are built around the perimeter of San Francisco to capture the flow as it comes down to the shore line and hold it for a few hours and take it gradually to the treatment plant.

Mr. MOODY. Store, convey, and treat.

Ms. BERRY. Yes.

Mr. MOODY. You said as it gets to the shore line. You mean runoff, not outfalls?

Ms. BERRY. We have a combined system so ours comes through 900 miles of sewer system. We have a very steep topography so it comes at us in a huge rush, great volume at one time, so we have these huge transport storage facilities to catch that and hold it for a while.

Mr. MOODY. My question is really on funding. Did you get any special grants or special money?

Ms. BERRY. No, not at this time. Our funding has come through the regular clean water construction grants program to this point.

At this point now we are putting together the application for the special CSO fund. Congress had authorized up to $200 million annually for marine estuary areas with CSO problems, and we are the only city in California that is eligible for that particular special fund.

Mr. MOODY. You are the only city in the country, aren't you?

Ms. BERRY. No, just on the west coast. Many of the east coast cities have that problem as well. It is the older cities with the old sewer systems.

Mr. MOODY. That are on marine estuaries?

Ms. BERRY. Marine estuaries, right.

Mr. MOODY. Do you think there is a special reason why we should have a fund that is for marine estuaries as opposed to inland water bodies?

Ms. BERRY. I am not sure that I am the best person to answer that particular question.

Mr. MOODY. I want to get back to your cost-benefit issue. You are achieving 93 percent of your goal in this particular area with 58 percent of your funds.

Ms. BERRY. Yes.

Mr. MOODY. In a universe of scarce resources, if we push ourselves to 100-percent achievement and use up that extra money for relatively minor additional gains in cleanliness, aren't we in danger of not cleaning up other areas where we could get much more bang for the buck?

Ms. BERRY. There is that potential. That is why we divided our programs into five separate systems and are approaching them incrementally, so we do get the benefit as long as the money is available.

Mr. MOODY. Do you do that simultaneously so you don't spend up all your money on one thing?

Ms. BERRY. We want high volume.

Dr. BROOKS. Let me make a comment. I think the 100 percent she is referring to are the goals of the master plan.

For example, the master plan for Pacific Ocean discharge was modified and I think includes, hopefully, the approval of a 301(h) waiver from secondary treatment. So we are trying to make a cost-effective system to get the environmental growth which does not include every possible thing you could do like secondary treatment.

The problem of San Francisco technically is especially difficult because of the combined sewer problem and the wet weather that goes with it. Still, often the debate is how much treatment to give the wet weather flow if you can convey it out to long outfall. This would count as achieving a large measure of success.

So I think, don't interpret her percentages too literally because it is hard to express what quality goals are.

Mr. ROE. Will the gentleman yield?

Mr. MOODY. Yes.

Mr. ROE. You are not saying, however, that in order to achieve the goals, of which one priority is cleaning up that bay, that if you don't deal with the combined sewer situation you can't achieve that goal?

Ms. BERRY. That is absolutely right.

Mr. ROE. I think that is the point the gentleman ought to stress.

When we had the battle in the last 1981 amendments in the quarrel there, we tried to get across to some of those who don't understand the issue that just because it is effective in an estuary, that is one thing, but you have that same problem in inland waterways throughout the West of the country.

So there is no magic in saying this is the problem over here in San Francisco, or for that matter, in Boston, if you don't handle it in the entire country.

We believe that the elimination of the combined sewers overflows—and I was just reflecting, as Ms. Berry was testifying, is really analogous to the point of view of your nonpoint source, and what you are saying fundamentally in the topographical relationship of San Francisco in view of the fact that you are including the elimination of the combined sewer issue you are picking up urban runoff and everything else.

Ms. BERRY. That is exactly right.

Mr. ROE. So in effect, your program is not only directing itself to point source elimination. You have taken a geographical environment and you are also handling the nonpoint source.

Ms. BERRY. That is right.

Mr. ROE. So the advantage of the process that they are able to use in the storage and elimination of that combined runoff has an enormous effect upon what you are trying to achieve as far as that area is concerned? Is that a fair commentary?

Ms. BERRY. Yes.

Mr. ROE. There is no reason to believe that that same set of circumstances does not exist everywhere else.

Mr. MOODY. If I could have a little more time. Have you investigated the cost benefit relationships of instead of storing it, conveying it, and treating it. That given the rapid and high velocity flushing operation naturally of the Pacific Ocean, instead of conveying it to the storage plant and treating it, is there a way to convey it out some great distance beyond the Golden Gate where that natural flushing would just take it away?

Ms. BERRY. The location of the area where we are having the problem is the furthest away from the ocean side. The treatment plant is closer to us.

Mr. MOODY. So you are on the peninsula.

Dr. BROOKS. Let me answer this. I worked on the engineering aspects of this question.

What you are trying to do is to convey the storm water instead of discharging it into the bay to get it out into the ocean. You are exactly right.

To me it is more important to get it far offshore and into the ocean than to worry about the 4 percent of the time and treat it and so on. Just get it out there.

Now, the problem is that the volumes are so large that to take it instantaneously out to the ocean would require several hundred million dollars more of pipes. So after storing it, just to help, you then pump it out there.

Mr. MOODY. So storing it would happen in either instance whether you convey it to the treatment plant or the Pacific Ocean?

Dr. BROOKS. Yes. It is just an economical way to do it.

Mr. ROE. If the gentleman would yield again.

It seems that their testimony is based upon the application of varying processes to a given set of environmental problems and to an environmental result.

Dr. BROOKS. That is correct. We share the objectives.

Mr. ROE. But therefore, in the comparative relationships, however you best do that in San Francisco, to achieve that goal, one thing you have recognized, which I think is the point the gentleman is leading to, that in order to achieve that goal at all, you must deal with the elimination of those combined sewers.

Dr. BROOKS. Well, you do the best you can.

Mr. ROE. I don't want to hedge and fudge. You either do or you don't.

If we are going to submit an application for the aggregate cost of one point, whatever billion, do you consider the elimination—and this is a very critical point here—do you consider the elimination of the combined sewers as a very critical factor in your overall water quality program for San Francisco, not how you do it?

You are able to go out because you have a 1,000 foot depth and you are off the coast. We understand. We have been doing this for 5 years.

I just want to get that on the record as being a fact. We are trying to convince the Congress that if they don't do something to eliminate the combined sewers overflows there is no sense in wasting our time on nonpoint source. Is that one and the same? Do you understand what I am saying technically?

Dr. BROOKS. Yes, I agree. The elimination of combined sewer overflows can be done as in San Francisco, or can be done by building separate sewer systems. There are different ways to do it.

Mr. ROE. That is what I am trying to get at.

Dr. BROOKS. The 100-percent efficiency, though, is very difficult to prevent any combined sewer overflow and San Francisco had a lot of debate over how much to reduce the combined sewer overflow, whether to reduce 95 percent or 99 percent.

Mr. ROE. Excuse me. We are not going to solve all our problems today.

Please don't consider me rude. Out of the testimony you are developing, particularly issues which relate to the west coast which we are aware of, this committee had to make a decision at one occasion which was supported by the environmentalists on a very similar problem on the west coast having to do with a paper mill. So we are a little bit knowledgeable on what you are talking about.

What I am trying to get at is, when the national clean water people and different ones have testified they have come back to us and said, "We like the bill, and we want to look to the Oberstar aspects that he has introduced, because then we start to deal with nonpoint source."

What I want to try to get into the record is that if you are going to be dealing with nonpoint source in any urban area that has a combined sewer, you must direct your attention to that issue as an equal level of potential improvement of anything else.

Consequently, therefore, to achieve that goal, if they come back to you—and if the gentleman would further yield, from Wisconsin—they came back and said, "OK, fine, you are not going to provide the estuarine waters. It is going to cost you $118 million and

you have to raise that locally as reducing the cost from 75 percent down to 55 percent." Giving some States the right, the Governor decides, "I am not going to go with 65 percent. I am going to decree 55 percent." All has a bearing on your electorate. Is that fair? What are your costs going to be, et cetera, et cetera.

All I am trying to establish is in the San Francisco problem, above and beyond the integrity that you developed to go out into the deeper ocean, which is the point you are making, in order to do the job cost effectively, we must get rid of the combined sewer.

Is that a true or untrue statement?

Ms. BERRY. That is absolutely true.

Another way to look at the percentages, as I mentioned, the 93 percent relates to sewage flow or volume. You can also look at it in terms of population effected.

The combined sewer problem that we have is down in this corridor of the city, so you are affecting 30 to 35 percent of San Francisco's population with an esthetic problem, an odor problem and health hazard.

There is a brand new State park developed along this entire shoreline from the San Mateo County border around the entire southeast area up to the creek where our treatment plant is located. That section, if you will forgive an old fisherman's term, will chum a lot of people to that area. They will be wading and swimming and surfboarding, windsurfing, and taking shellfish from an area that is highly polluted and has been for a long, long time.

Mr. ROE. Are there further questions?

Mr. STANGELAND. Mr. Chairman, I ask unanimous consent that I might be allowed to submit some written questions to the witnesses.

[The questions submitted to Dr. Brooks by Representative Stangeland, and responses received follow:]

NORMAN H. BROOKS, PH.D.
CIVIL ENGINEER
1201 EAST CALIFORNIA BOULEVARD
PASADENA, CALIFORNIA 91109

February 15, 1984

FEB 17 1984

Congressman Arlan Stangeland
House of Representatives
1526 Longworth House Office Building
Washington, D.C. 20515

Dear Mr. Stangeland:

In response to your letter of January 17, 1984, I am pleased to transmit herewith my responses to your follow-up questions for my testimony on November 10, 1983 before the Water Resources Subcommittee.

If there are any other questions, I'll be pleased to address them also.

Sincerely yours,

Norman H. Brooks

Norman H. Brooks
Director

NHB:mn

cc: Mr. Lou Vagadori
City and County of San Francisco

Answers to questions from Congressman Stangeland (Jan. 17, 1984)
for City and County of San Francisco,
related to testimony before the
Water Resources Subcommittee on November 10, 1983.

Answers by Norman H. Brooks

1. Question: Toxics discharges are of great concern. Where a discharge under 301(h) was shown to have negative impact on the ocean due to toxics, would you support modification or cancellation of such a discharge?

Answer: Absolutely yes. The negative impacts of toxic substances must be controlled in all environmental media, including air, ground water, surface water, and the land as well as the ocean. The important point of my testimony was that society's efforts on source control (or pretreatment) must be focused on substances which need to be controlled for maintaining excellent ocean water quality and not dissipated on non-problems. Therefore the best way to set priorities and regulations for source control is to establish criteria to be met for ocean water quality in the vicinity of outfall discharges. This is the approach of the California Water Resources Control Board which is widely accepted and being copied in many other locations worldwide. (Reference:)

2. Question: You have discussed the subject of disinfection. There has been concern raised by environmental groups that chlorination may have serious impact on the receiving waters. Would you still support treatment for pathogens by chlorine or other means where there may be a public health threat?

Answer: Protection of public health and the maintenance of a healthy marine ecosystem are both important goals of marine disposal systems. Wherever feasible, I recommend that outfalls be long enough and deep enough so that even without chemical disinfection, there is sufficient natural dieoff and dispersion of pathogens to eliminate human exposure (either by bathing or eating shellfish). (This is the policy of the California Ocean Plan.) However, where it is not feasible to control pathogens this way, I definitely would recommend some form of disinfection. The possible adverse effects can be reduced, however, by: (1) applying disinfection only during the seasonal periods when it is needed (based on oceanographic conditions and human exposure); (2) in the case of chlorination providing an additional treatment step known as dechlorination to remove all chlorine residuals and (3) use of high dilution outfall diffusers obtaining dilutions of over 100:1 (parts of sea water per part of effluent).

The Southwest Ocean Outfall of the of the City and County of San Francisco, now under construction, has been designed to meet all bacterial standards of the State of California without disinfection.

3. Question: How will San Francisco's pretreatment problem be impacted by EPA's National Categorical Standards?

Answer: San Francisco can meet EPA's National Categorical Standards through additional controls on industrial dischargers. However, the program already in effect produces effluent which will meet all toxic substances requirements ("Table B") of the California

Ocean Plan as applied to the high dilution San Francisco Southwest Outfall. Since the California requirements are widely regarded as being conservatively set (based on the scientific literature on toxicity to marine organisms), I regard the application of the national EPA standards as being in excess of what is needed in San Francisco to maintain excellent ocean water quality.

As explained in my testimony, the approach to regulation of toxics as set forth in the draft legislation (H.R. 3282, Sec. 5(b)) is completely unworkable administratively, and is not based on any scientific data on toxicity.

Mr. ROE. Now, there is no further question of these distinguished witnesses from San Francisco.

We just had a vote come up.

Dr. BROOKS. One final comment. I would like to agree with what you said, but put it in the following context. If you have diffuse sources like tire dust or lead from gasoline, and how it gets to the ocean or an estuary is an accident of how a city is constructed. In Los Angeles, it washes down into the flood control system and runs out in the ocean in the flood channel. In San Francisco, it runs down to the sewer and runs out of the sewer system. You have to tackle all the ways that those diffuse sources can get to the ocean to tackle that problem.

Mr. ROE. What I am leading up to, we are going to battle this battle again. Make no mistake, and I am very candid about it. And hopefully we can get some of the Senators—I shouldn't say this, but it has got to be said, and I say what I think. We have got to get some of the Senators that are governing from the interior States of this Nation to get involved in this and not just those in the coastal areas talking about setting up estuary areas. It affects the whole country.

Have you something further to add?

Dr. BROOKS. On the pretreatment, I think the language of the Senate bill is satisfactory from a scientific point of view.

Mr. ROE. We will surely take a look at it.

We are on a rollcall vote.

Let me suggest the following to the folks that are from throughout the country and going to testify today. We have two critical measures on the floor of the House. One is obviously the continuing resolution if the country is going to continue to function. There is no way for the committees to determine how the votes are going to fall. There is one vote up there now.

Because of another critical matter for the Members, particularly, that the full Committee on Public Works will meet 15 minutes after this vote in 2167 in an emergency meeting of the full Committee on Public Works. So that means we are going to be a little bit

delayed in our process. So I don't know how long our testimony is going to take of the different witnesses.

You came a long way and we are here to hear you, but we hate to tell you the bad news, that it is going to take longer than we thought, so you are not going to get on as early.

If you have airplane reservations, please start looking at them now because it will probably take a number of hours to conclude everything in the committee.

Having said that, in a few minutes we will get a second call on this vote.

We want to thank you, by the way, for a very substantive presentation. If we seem a little bit excited or enthusiastic or whatever in our response, it is because we are trying to nail down the law, too. So we thank you very much.

Mr. BROOKS. We would be happy to answer any further questions.

Mr. ROE. I don't think there are any. We will be presenting some to you in writing, as requested by the gentleman from Minnesota.

So I would suggest that what we do is recess now. And, Congressman Rahall, our next witness, will be from the West Virginia Chamber of Commerce, Mr. Don Hysell. If you would be kind enough to stand in ready.

We will go and vote, go to the full committee. And I would suggest that the subcommittee will have to recess at this point and return here at 12:30. That is an hour from now. At that point, we will hear Mr. Don Hysell, and he will be welcomed by Congressman Rahall from West Virginia.

So the committee will stand in recess. Please bear with us, ladies and gentlemen, until 12:30.

[Whereupon, at 11:30 a.m., the subcommittee recessed, to reconvene at 12:30 p.m., the same day.]

AFTERNOON SESSION

Mr. ROE. The committee will reconvene.

Our next witness scheduled for this afternoon is Mr. Don Hysell from the West Virginia Chamber of Commerce. We will hear from the distinguished Representative from West Virginia, the Hon. Nick Rahall.

Mr. RAHALL. Thank you, Mr. Chairman. I appreciate this opportunity to introduce to the committee the next witness.

Before I make this introduction, I would like to ask the subcommittee's permission to submit for the record two letters that I have received from the West Virginia Department of Natural Resources.

One letter from the director, Mr. Dave Callahan, expresses the department's views on legislation introduced by Congressman Oberstar to address the problem of nonpoint sources of pollution.

The other letter is from Warren Means, and states the needs for a strong construction grants program.

Mr. ROE. Without objection, so ordered.

[The letters follow:]

STATE OF WEST VIRGINIA
DEPARTMENT OF NATURAL RESOURCES
CHARLESTON 25305

JOHN D. ROCKEFELLER IV
Governor

DAVID C. CALLAGHAN
Director
WILLIS H. HERTIG, JR.
Deputy Director
BRENT T. WAHLQUIST
Deputy Director

October 28, 1983

Congressman Nick J. Rahall, II
440 Cannon Building
Washington, DC 20515

Dear Congressman Rahall:

I have received copies of Representative Obe star's speech and H.R. 4037 and wish to thank you for thinking of me.

Non-point source pollution is certainly an area that needs our efforts at correcting. As administrator of the Section 201 program which deals with point source domestic pollution, I recognize that the two are both needed to complement each other and give us total pollution abatement.

I would, however, like to share with you our concerns over program changes to be in place after October 1, 1984. I refer to zero collectors eligibility and the reduction in grant eligibility from 75% to 55%.

In West Virginia almost all of our sewage facilities projects need collectors. Especially after over 11 years into PL92-500 it can be noted that we have completed funding almost all major population centers and only the rural areas remain, almost all of whom will require collectors. It can also be noted that the rural areas can least afford to pay for their own collector systems which usually constitute 50-60% of the total project cost.

Further, the reduction in grant levels of the remaining eligible categories from 75% to 55% will work additional hardships on those rural areas. The most difficult facet of the program now - and has always been - is the securing of local share matching funds. If we have had trouble matching 75% grants with 25% local share funds, imagine the difficulty of matching 55% grants with 45% matching funds.

We feel that the impact to W. VA. of these changes in the regulations will be very severe indeed. We had more or less realized that about the only program we would have after October 1, 1984 would be up-grading existing sewage treatment plants.

However, we understand that second-round grants may also be eliminated except on projects which have exceeded its (20 year) design life. We will recommend utilization of the Governor's 20% set-aside to fund ineligible categories for collectors and we will utilize as much Innovative/Alternative funds for pressure and vacuum collector systems as possible, but these will not begin to equal a continuation of funding at the previous 75% grant level.

My intention here is to alert you to these facts and solicit your help to change the program back to full eligibility and full 75% funding levels.

Thank you for bearing with me and being a good listener.

Sincerely,

DIVISION OF WATER RESOURCES

Warren H. Means

Warren H. Means, P.E.
Branch Head
Construction Grants Branch

WHM/sm

STATE OF WEST VIRGINIA
DEPARTMENT OF NATURAL RESOURCES
CHARLESTON 25305

JOHN D. ROCKEFELLER IV
Governor

DAVID C. CALLAGHAN
Director
WILLIS H. HERTIG, JR.
Deputy Director
BRENT T. WAHLQUIST
Deputy Director

October 25, 1983

The Honorable Nick J. Rahall, II
Congress of the United States
House of Representatives
Washington, D. C. 20515

Dear Congressman Rahall:

First of all, I'd like to express my appreciation for the opportunity to comment on an important piece of legislation in the long standing effort to improve and protect the nation's waters. The West Virginia Department of Natural Resources is vitally interested in protecting both the land and water resources of the state from unwarranted abuse and degradation.

As you know, West Virginia depends upon its natural resources, in large part, for its economic well-being. Although coal, oil and gas, agriculture, and timber provide thousands of jobs, those industries have the potential to seriously affect the quality of the state's waters and thereby threaten the integrity of the trout and warm water fisheries, drinking water supplies as well as our growing tourism industry.

Realistically addressing the relationship between natural resource development and protection can be a delicate and, at times, controversial undertaking. For that reason, it is encouraging to note the efforts being made to recognize the impact that nonpoint source pollution can have on water pollution control activities. A recent survey reported that nonpoint pollution accounts for 50 percent of the water quality problems in some areas of the state.

The basic premise of Mr. Oberstar's bill providing for state and local development of control programs with minimal federal oversight is an effective approach and one which should provide the flexibility to achieve positive success.

The State of West Virginia has been engaged in nonpoint pollution control programs for agriculture, forestry, construction and abandoned mines for four years. Under section 208, 303(e), and 305(b), a significant amount of work has been done in identifying major categories of nonpoint pollution and developing implementation programs to address

them. Federal, state and local agency involvement has been of tremendous assistance in both assessing the problems and implementing solutions. Continued cooperative efforts, with the additional funding provided for in Mr. Oberstar's bill, will no doubt be of extreme benefit to the nonpoint source water pollution control efforts currently underway. However, it may be pertinent to point out that a significant amount of money has already been expended in developing the programs we are currently implementing. Mr. Oberstar's bill provides funding to develop basically the same programs with minimal additional financial incentives for implementation. What is needed, therefore, is funding to provide for actual structural implementation of practices. This is addressed to some extent in provisions to correlate other federal funding sources with the nonpoint effort and also in the demonstration project concept, but to thoroughly address the problem, an adequate implementation incentive is needed. Education and technical assistance can achieve results, as we have found in our four year effort, but without funding support it is difficult to promote actual water quality protection through practice implementation.

In reviewing the provisions of the bill as currently written, it appears that our existing programs can be readily revised to accommodate the new requirements and additional implementation activities undertaken with minimal interruption. In fact, it is encouraging to note that this bill is not a wholesale restructuring of prior legislation but rather an extension of earlier efforts at addressing the complex problem of nonpoint source pollution.

Again, I feel this legislation to be of extreme importance and would like to offer any assistance you may require in insuring a successful outcome.

Sincerely,

David C. Callaghan
Director

DCC/wbh

cc: D. W. Robinson, Chief, Division of Water Resources

Mr. RAHALL. Our next witness is from West Virginia, Don Hysell, presently the director for Human Resources for BASF at the Huntington, W. Va., plant. Today Don is here representing the West Virginia Chamber of Commerce to express the chamber's views on what change they feel is needed in the Clean Water Act.

Don, on behalf of the committee, I want to welcome you and we certainly look forward to hearing your views. You may proceed as you wish.

TESTIMONY OF DON HYSELL, EMPLOYEE OF B.A.S.F. WYANDOTTE CORP., HUNTINGTON, W. VA., REPRESENTING THE WEST VIRGINIA CHAMBER OF COMMERCE

Mr. HYSELL. Thank you, Congressman.

Mr. Chairman, Congressman Rahall, distinguished members of the subcommittee, as I was introduced, my name is Don Hysell and I am from Huntington, W. Va. I am here today to comment on the Clean Water Act and in particular, the best available technology provisions.

According to authoritative sources, more than $1 billion have been spent by industry and Government on improving the quality of the Nation's lakes, rivers, and streams, and the effectiveness of these expenditures can be seen in the quality of our water resources in West Virginia and elsewhere.

Eli McCoy, water resources director of the West Virginia Fish and Game Office, has said, "There are more species of fish seen in the Ohio River today, and especially more desirable game species."

An Ohio River fishery survey conducted by the EPA and the Ohio River Valley Water Sanitation Commission, in June of 1978, states, "Species appear to be increasing in abundance in the upper 100 miles of the Ohio River, including the channel catfish, skipjack herring, and spotted bass. Also, individual sample collections indicate that the paddlefish and buffalofish may be extending their range and/or increasing from the lower Ohio into the middle section of the river."

I believe as many of my West Virginia colleagues do, that it is time for the Congress to make a realistic appraisal of the job that has been done and from this benchmark, determine the direction for our future progress.

The emphasis of the effort under the existing Clean Water Act has focused almost exclusively on technology-based effluent standards and not on the actual improvement in water quality. No reliable data on national water quality exists, to the best of my knowledge.

According to a Department of Commerce report, $112 billion were spent on water quality from 1972 to 1979. This report said the taxpayer paid 42 percent of that bill including picking up the costs for community waste treatment plants across the Nation.

In practical terms, we all know that the other 58 percent of the bill was picked up by the taxpayer by paying a higher cost for products produced by the industry.

Before we launch the next phase of our assault in the form of BAT, we must understand the nature and dimensions of America's water pollution problems. When the Clean Water Act was passed,

there was a need for immediate and aggressive action. Since then, much has been achieved, as indicated by the improvement of the Ohio River in West Virginia.

Today, however, recognizing as we do that we have no real measure of water quality progress nor the magnitude of the job that remains, leads me to a specific area of concern to West Virginians: BAT, best available technology. To continue to require business and industry to comply with blanket technology standards, regardless of the existing water quality improvement, is as wasteful of our economic resources as ignoring water quality needs would be wasteful of our natural resources.

If a discharger can comply with water quality standards with current hardware, why should he be required to go out and buy new equipment just to satisfy the BAT requirement, a seemingly endless and expensive technology spiral. This money would be better spent expanding plants and providing more jobs for the people in our State.

I believe it is time we got a handle on our progress to date and carefully consider the impact of another round of standards based on equipment instead of the actual quality of our Nation's waterways.

In considering this legislation, the goals of the Clean Water Act should be reaffirmed. But now let's prioritize the actual cleanup and maintenance of our Nation's rivers and streams. Let's give enforcement agencies the tools to make determinations of what works, what doesn't work, and what we need to do from now on, and let's treat business and industry fairly—as a partner in this important national effort.

I thank you very much for your time.

Mr. ROE. We thank you very much for your splendid testimony. I think you have got a very strong point.

The gentleman from Minnesota.

Mr. STANGELAND. I have no questions for the gentleman except that he makes some very excellent points in the statement and I know they will be considered.

Mr. ROE. The gentleman from West Virginia.

Mr. RAHALL. Thank you, Mr. Chairman.

Thank you, Don, for your testimony this afternoon. I have met with you on many occasions back in the State with many other groups with whom you have been working to make these changes, and we have discussed the BAT requirements quite often.

In your testimony, you mention that Congress should begin to look at whether or not technology-based standards are still needed, and, as you know, these standards were implemented or these standards are implemented because, without them, we saw a situation where industry was often leaving some States that had tough standards to go to other States with lower standards.

I am wondering if you could give us some suggestions as to how Congress and/or the EPA can implement the BAT waiver provision so that it can be applied in a consistent manner across the country, so you don't have businesses fleeing from one State to another.

Mr. HYSELL. Congressman Rahall, if you don't mind, I would like to respond to that in letter form for you at a later date for the record.

Mr. RAHALL. With the subcommittee's permission, I am sure the record would be kept open.

Mr. ROE. No objection.

Mr. RAHALL. In that same letter, would you provide where such BAT waivers should be granted in West Virginia?

Mr. HYSELL. Yes, sir.

Mr. RAHALL. I appreciate that.

I want to thank you again for the information that you have provided me all along on this issue, and I believe the testimony you have given today will be very helpful to us in our deliberations.

Thank you.

Mr. ROE. Any further questions?

Mr. MOODY. No questions.

Mr. ROE. Thank you very much for being with us and taking your time.

Mr. HYSELL. Thank you, Mr. Chairman.

[The following was received from Mr. Hysell:]

BASF Wyandotte Corporation

BASF

Pigments
5th Ave. & 24th Street
P. O. Box 2166
Huntington, West Virginia 25722
304/529-1311

December 21, 1983

Congressman N. J. Rahall, II
440 Cannon Building
Washington, DC 20515

Dear Congressman Rahall:

Thank you for the opportunity to reply for the record to the two questions you raised during my November 10, 1983 testimony on behalf of the West Virginia Chamber of Commerce before the Public Works and Transportation Subcommittee on Water Resources.

Response to Question 1: I do not believe a credible case can be made for the often repeated claim that industry shops from state to state with respect to environmental standards. In no case has my company engaged in such practice. The Conservation Foundation poll already part of this record clearly shows that plant locations are consistently selected on the basis of more traditional factors such as access to markets, and raw material supplies, and labor costs.

The ability to obtain required environmental permits in a predictable time period in a given state is far more important than the question of the numerical limitations that might be imposed on water dischargers.

The waiver mechanism raised in my testimony is conceptually simple. When EPA promulgates an "Effluent Guideline" that an affected discharger believes was established based on conditions that are not applicable to the body of water receiving discharge, the discharger could apply for a waiver.

Any discharger who applies for a waiver would have to show that water quality standard for the receiving water would not be adversely affected with a lesser level of control. Where there is no water quality standard for the substance involved, the discharger would be required to show that the proposed discharge levels will not pose an unacceptable risk of harm in the receiving water based on the designated use for the water in that reach of the water body.

The permit writer would have the scientific fact base necessary for determination of the appropriate effluent limitation for the applicant's discharge.

Response to Question 2: My contacts in West Virginia suggest that a waiver may be possible at least in the following locations:

PLANT/LOCATION	SUBSTANCES
E. I. DuPont, Bell, WV	CN, Metals
Union Carbide, Institute	Various organic materials

Very truly yours,

BASF WYANDOTTE CORPORATION
Pigments Division

Donald R. Hysell
Manager of Human Resources

DRH:skm

Mr. ROE. Our next witness is Mr. Larry Krueger, Milwaukee, Wis.

The Chair defers to our distinguished colleague from Wisconsin, Congressman Moody.

Mr. MOODY. Thank you, Mr. Chairman.

Our city and our region has a very serious set of problems concerning water pollution. We have a CSO problem of substantial dimensions. We have the usual problems concerning treatment and storage and conveyance of sludge.

We are adjacent to a body of water which all of us agree should be kept clean, the Michigan Lake. And we have a number of industries in our region and city which do use water heavily in their processes. We have tanneries. We have chemical industries. We have food processing industries and we have steel and other metal industries.

We are in the process of intensive dialog in our community as to what indeed should be the best set of outcomes for us in terms of Federal legislation as well as State and local legislation, and what sort of funding we can reasonably ask for.

So our community is intimately and intensively involved in the questions that this subcommittee is considering. We have a lot at stake.

The representatives of industry in my community have been extremely responsible in attempting to come forward and to share in the process of finding solutions and they stand ready to bear their share of the burden. Almost without exception, they have come forward in a most reasonable way.

One of those examples is the gentleman before us, Mr. Krueger, and he is his own best witness. So I would like to let him proceed.

Mr. ROE. Mr. Krueger, go ahead.

TESTIMONY OF LARRY KRUEGER, CHIEF EXECUTIVE OFFICER, PELTON CASTEEL CORP.

Mr. KRUEGER. Thank you.

Good afternoon, Mr. Chairman, Congressman Moody, and members of the Water Resources Committee. As has been mentioned, my name is Larry Krueger. I am president of Pelton Casteel Corp., a steel foundry in Milwaukee.

I am pleased to share some thoughts on BAT, a concept that was originally explained to our industry as the zero discharge program—an issue I feel so strongly about that I have come to Washington to testify before an important committee of Congress. Needless to say, this is not an everyday occurrence for me. Thank you for permitting me this opportunity.

I have the happy task of informing you that just yesterday my firm bought out another Milwaukee foundry that was operating at just 25 percent capacity. We are putting these two foundries together and combining them into one plant at 50 percent of its capacity.

Our goal is to combine it with Pelton Casteel and to hopefully protect jobs for Milwaukee and provide for a brighter future for our company and our employees. My firm is committed to keeping Milwaukeeans employed and keeping our local foundries competitive in the foreseeable future.

I am here because I and my firm care deeply about clean water and support effective means to keep our water clean. Where I come from we have strong feelings about our environment. Industry has spent millions to clean it up. Our progress has been clearly evident.

Russell Train, former head of the EPA, has said the following about our efforts to clean up the Great Lakes: "It's one of the greatest success stories in American history."

U.S. News and World Report told its readers: "The open waters of Lake Michigan are of generally high quality and marked progress has been made in cleaning up major polluters along the shore line. The water is noticeably cleaner than it has been for years, due to industry clean up."

As an aside, our plant is adjacent to a stream which empties into Lake Michigan where Coho salmon were being snagged as recently as 1 week ago. This clearly is an indication of our water quality.

We, in industry, are proud of our record, and believe there is still more to be done in continuing this fine effort. My remarks are directed at how this cleanup can effectively move ahead.

As Congressman Moody knows, many of his constituents are greatly interested in BAT. My Congressman, I am pleased to tell you, has gone to some lengths to get the hometown view of BAT. Our Congressman Moody is the only Wisconsin Congressman to sit on the Public Works and Transportation Committee of the House, and he plays a very important role. Over 70 of us met early one morning with him on the single topic of BAT, and we found a responsive and open ear. I hope this subcommittee will also take our views into consideration.

I would like to share with the rest of the subcommittee some of the points that arose at the meeting with Congressman Moody, as reported to me by our chief engineer who met with our Congressman.

A representative of Babcock and Wilcox noted that, "We are at a 95 percent rate of purity on our discharge. If we are forced to go to

98 percent, the resultant sludge will be less desirable to the POTW than our current discharge."

Miller Brewing, I am proud to note, is headquartered in Milwaukee and was nationally cited last week for its achievement in discharge control, told Congressman Moody that, "In order to comply with Government regulations, we have built new treatment facilities at each of our plants over the last 7 to 8 years. To go to BAT now would cost 11 times—that is 11 times what we have already spent for a 1 percent improvement in discharge."

These Milwaukeeans are making general and important points that there must be some sense of cost trade-off in further regulations.

As you proceed with consideration of blanket national technology requirements, please keep in mind a point many of us from Milwaukee share: What is a cure for a problem in Tampa, Fla., may not be a cure for the problem in Northern States.

In fact, it is entirely possible that some equipment that works well in warm climates may not function effectively in our cold winters.

If a business is polluting, it should clean up its act. I have no personal question about this. We do not object to BAT per se, but do object to its blanket application, regardless of need. Just because some business in certain industry group may be a bad actor, it doesn't make all of us bad actors. Our foundry industry does not support the concept of protecting a fellow foundry that is polluting.

What we are asking for is fairness. We truly support clean water, and if BAT will help make our water cleaner, fine.

My problem is with this "all businesses are evil" approach. If a business can show, at its own expense, that it is not causing pollution through discharge and that the installation of costly BAT-mandated equipment will not improve the local water quality and that this local judgment meets with EPA or the State's approval, that business should not have to drain funds that could be used to hire more workers or keep current workers on the job to pay for equipment that won't make the water appreciably any cleaner.

I would like to comment that I am from a smokestack industry and I have heard comment on the demise of our industry. I have said that we are in this country to stay and the smokestack industry is not going to fold up its tent and disappear. So we are going to need help for the well-being of our country long term.

I don't believe that blanket BAT is in everyone's best interest, not the workers, not the environment, nor the employers.

I further strongly urge that this legislation address the true problems of water pollution, including runoff from nonpoint sources. It is this nonpoint source runoff that contributes a large amount of real pollution in our water. I feel it would be intellectually dishonest not to recognize this as a problem that must be addressed, instead of putting a huge multibillion strain on employers to get 2 percent of the problem when a much larger percentage comes from nonpoint sources.

Before I conclude, I would like to state that your agenda lists me as representing a particular special interest group, and that is not the case. I am here as an owner of a steel foundry and that is my

only reason for being at this particular hearing. It happens to be a mistake in your agenda.

Mr. ROE. We will see that it is corrected.

Mr. KRUEGER. I want to thank you for listening to the views of someone from Milwaukee, and if it is OK with the committee, Mr. Chairman, I request permission to insert written testimony into the record.

Thank you.

Mr. ROE. Mr. Moody?

Mr. MOODY. Thank you, Mr. Krueger. I think we all share the concerns you expressed.

Let me ask you, what other folks in Wisconsin, as far as you are aware of, agree with the statement that you have given us on the BAT issue?

Mr. KRUEGER. Well, the Wisconsin Association of Manufacturing and Commerce, the Milwaukee Chamber of Commerce, the Wauwatosa Chamber of Commerce, the Wisconsin Cheesemakers Association, Wisconsin Agribusiness Council, and I am very pleased to say the United Foundrymen of Wisconsin, and the Cast Metals Federation of the United States.

Mr. MOODY. Mr. Krueger, can you give us your comments on job loss in our region, should BAT be endorsed as you understand it?

Mr. KRUEGER. Well, all of the environment issues come down to the problem of competing in an international marketplace where some other countries are not under the same rules and regulations. I am not advocating that our environment should be polluted or the water should be polluted, but we have got to realize that we are facing international competition.

One of our major customers in Milwaukee just publicly announced that they are moving all of their construction equipment production to Kobe, Japan, because they can buy cheaper there than they can in the United States. That represents a 15-percent loss of that corporation's business to our industry and to our local employment picture.

Another one of the major machinery producers, that I did not get permission to use their name, so I can't, has their purchasing people exploring the Third World countries to buy product offshore, again replacing jobs and production from our own country. They are looking into countries that don't have the rules and regulations that we do. And therefore, we are faced with what I consider very unfair competition.

Mr. MOODY. One of the approaches that have been suggested if BAT is brought in as a mandate is waiver for BAT. Could you give me an idea of how possible or difficult it would be to live or work in an environment where you could go out and apply for waiver?

For example, with the testing needed to satisfy BAT waiver application, would that be extremely expensive or would that be modest?

Mr. KRUEGER. Congressman, I don't think I can honestly answer that question.

I do know that we are currently monitoring discharge by the previous rules and regulations that have been put into place. What would happen for waivers without looking into it with someone from our engineering people, I could not answer that question.

Mr. ROE. Thank you.

Any further questions?

Mr. STANGELAND. I just want to commend the gentleman on an excellent piece of testimony.

On page 5, I want to say you read correctly, but there should be a "not" in the first sentence of the last paragraph. That should be stricken to be correct.

Mr. KRUEGER. I did strike it in my copy. Thank you.

Mr. MOODY. Mr. Chairman, one thing you said was particularly important, and I remember it from the meeting you cite in Milwaukee, was that some manufacturers could actually meet BAT standards and spend a lot of money doing so without any appreciable increase or improvement in the quality of the effluent.

Can you talk about that just a little bit?

Mr. KRUEGER. Again, I can't comment as an expert in the technology, but we know for a fact on all of these pollution areas that you can go to a very high percentile of correction with somewhat reasonable costs. It is when you start making those extra steps that you start running into dollars that don't match up with the results that you are obtaining, and I think that would be true in water just as it has been proven to be true in the air pollution areas.

Mr. MOODY. I notice that Babcock and Wilcox asserted—and I will try to get this in more detail for the record—that we are in a 95 degree of purity in discharge and are forced to go to 98 percent with the resultant sludge would be desirable to the publicly owned treatment works than our current discharge. That is an interesting comment.

Do you have an additional insight on that?

Mr. KRUEGER. Well, sometimes you move the pollution problem from one area to another, that is what you are really doing. When you clean up the water, you may go into solid waste disposal problems.

Mr. ROE. If the gentleman would yield on that. I think that is one of the most telling points you have made in your testimony.

It would be well, I would think, and the committee would support that, that nobody wants to spend money for no purpose, but we are dealing in also a highly emotional area as you are aware. And it seems to me that the interrelationship of cleaning up an added percentile or two as to what the results would be in other parts of the waste stream ought to be considered in that direction.

I think that is pretty much what you are coming down on. In other words, if it is going to create a more complicated sludge disposal problem, then we ought to be dealing with that rather than just going off in one direction. That is really what you are saying?

Mr. KRUEGER. I would certainly agree with that. You just move the problem to a different arena.

Mr. ROE. No further questions.

The gentleman from Pennsylvania.

Mr. CLINGER. I take it, Mr. Krueger, that your feeling is, and I think I would agree, that industry generally has done a pretty good job in correcting what I think you all agree were abuses in the past and have brought the quality of water up to a much higher standard than it was previously. You are now saying, though, that the

incremental costs of getting to 100 percent from, say, 95 percent, put the cost-benefit way out of whack.

I think it is also important that you stress in your testimony that we really need to take a much harder look at the nonpoint source pollution.

If we were to reach 100 percent and the point source pollution was absolutely pristine and everybody was complying with it, what sort of a problem would we still have left as a result of nonpoint pollution?

Mr. KRUEGER. Well, I can only quote what I have heard. I have heard comments in the vein that at least 50 percent of the water pollution is coming from nonpoint sources. Therefore, if you got the point sources to perfection, as you say, you still would have the problem in front of you to be corrected.

I come from Milwaukee and the Congressman mentioned in his opening comments, we are faced with an antiquated sewer system and the county is struggling with the problem. I don't know where that answer is going to come from, but I also recognize from being in business in that community that we are going to pay for part of that solution.

We are prepared to do what has to be done properly, but it is that last inch that people are demanding of industry that is unfair from a cost standpoint that should be looked at very, very carefully.

Mr. ROE. Let me ask you this. Do you discharge into a municipal sewer system?

Mr. KRUEGER. Yes, we do.

Mr. ROE. And as I recall, the gentleman from Wisconsin and yourself testified that you are also faced with the problem of combined sewers. And we are coming back and saying that if we don't deal with that and force the people who are discharging directly into the lines and sewer plants that we are not going to clear up the problem.

Mr. KRUEGER. We have both sanitary and storm sewers, but when the storm hits, the storm sewers can't handle it and it ends up in the sanitary.

Mr. ROE. That is exactly what we have. So as was the case in the discussion with the people from San Francisco, that they were dealing with that issue as part of their overall plan. Rather than put all of the burden, if we have gone 85 percent of the way, on individual industries, and we are not going to achieve any further improvement unless we clean up those combined sewers first, then we have a valid point.

Mr. KRUEGER. I would certainly agree.

Mr. ROE. No further questions.

Thank you very much, Mr. Krueger. We appreciate your testimony.

Our next witness is Ms. Carolyn Carr, chairman of the Sierra Club Clean Water Act Campaign Steering Committee.

How is your cold today, Ms. Carr?

Ms. CARR. I am still coughing, but at least my voice has come back. You were gracious to let me come in today.

Mr. ROE. If you can summarize your statement, it will appear in full in the record.

[Statement referred to follows:]

STATEMENT OF CAROLYN ANN CARR, CHAIRMAN, SIERRA CLUB CLEAN WATER/TOXICS CAMPAIGN

SIERRA CLUB
530 Bush Street San Francisco California 94108 415/981-8634

Mr. Chairman and members of the subcommittee, I am Carolyn Ann Carr, Chairman of the Sierra Club's Clean Water/Toxics Campaign. I live in Auburn, Alabama, and am an economist by training.

I am here today, representing hundreds of thousands of members of the Sierra Club, to express our strong support for H.R. 3282, Rep. James Howard's bill to reauthorize the Clean Water Act. Other persons from the Club will present testimony today covering several specific areas of concern - 301(h) waivers, non-point pollution, and pretreatment, for example - so my remarks will be more in the form of an overview, except for a more detailed discussion of Section 404.

Reauthorizing and strengthening the Clean Water Act is one of the Sierra Club's major conservation priorities. While we are pleased to see the progress which has been made in cleaning up our nation's waters, we note with regret that the United States will not meet the two goals of the Clean Water Act, to eliminate the discharge of pollutants into navigable waters by 1985 and to attain fishable/swimmable waters by July 1, 1983. In order to reach these goals we believe it is necessary not only to reauthorize the Clean Water Act, but also to strengthen it. It is for this reason that we support H.R. 3282.

Rep. Howard's bill addresses an array of current water pollution problems -

Pretreatment of toxic wastes. Annually more than 200 million pounds of industrial toxic wastes are poured into the public sewer systems. Municipal treatment plants are not designed to remove them, and these wastes not only contaminate sewage sludge and effluent water, they also damage the treatment plants themselves. Some municipal treatment works have been rendered virtually useless, as in the well-known Kepone case in Virginia.

We are pleased to note that H.R. 3282 keeps the federal pretreatment program intact and does not allow municipal "opt-out." Quite frankly, most cities and towns lack the expertise to formulate toxics discharge standards for their sewer systems. Furthermore, "opt-out" violates the concept of uniform, nationwide pollution control standards. Industry would be thrown back into the old days of not knowing which standards might apply where. "Opt-out" has no place in the Clean Water Act.

Toxic hotspots. There are areas throughout the United States which will not meet water quality standards even after all the Clean Water Act's existing requirements are met. We support the provision in H.R. 3282 requiring the Environmental Protection Agency (EPA) to identify and develop controls for these "toxic hotspots."

BAT deadline extensions. We agree with EPA and industry that BAT deadlines need to be extended. When many of the regulations defining "best available technology" have not even been adopted yet, the existing 1984 deadline is unrealistic. H.R. 3282 would require BAT controls to be installed no later than three years after the

relevant regulations are adopted. EPA and industry testimony indicate that this is an adequate time frame and we concur with that assessment.

BAT variances or waivers. We agree with EPA and the Senate Committee on Environment and Public Works that BAT variances are not necessary. Furthermore, the idea runs counter to the concept of streamlining the permit process and would increase the workload of EPA, an already entirely overburdened and understaffed agency. We are pleased to see that such waivers are not included in H.R. 3282.

Water quality regulations. While we believe that the water quality regulations most recently proposed by EPA are relatively good, we remember the proposals put forward by Mrs. Burford. In order to prevent future attempts to undermine state water quality programs, we strongly endorse the provision of H.R. 3282 to incorporate existing water quality language into the law.

301 (h) waivers. H.R. 3282 would require that before sewage discharged into the ocean be granted waivers from secondary treatment, it receive primary treatment plus pretreatment for toxics equivalent to secondary treatment. The bill would also mandate that sewage discharged into estuaries meet the usual secondary treatment requirements of the Clean Water Act. We believe these are excellent proposals, since it appears that the original intent of 301(h) was to apply only to small municipalities that were unable to afford secondary treatment works, not to large urban areas.

Non-point sources. As we have achieved greater control over conventional pollution problems, we now find that half the water pollution in the United States comes from non-point sources. The recent internal review conducted by EPA concludes that in six of the ten EPA regions non-point pollution is the chief water quality problem. These non-point sources include soil erosion, urban runoff, sewer overflows, animal wastes, pesticides and herbicides from farmland, construction site runoff, acid mine drainage, and runoff from oil and gas exploration/production.

We support Rep. Oberstar's proposed amendment dealing with pollution from non-point sources, because it allows states the necessary flexibity to establish local control strategies. This is necessary due to the wide geographic diversity of non-point source problems. However, we do believe that deadlines and enforcement provisions need to be added to his proposal. Otherwise, states and municipal funding will continue to be diverted to other areas. We would hope that equivalent non-point language could be included in H.R. 3282.

Section 404/dredge and fill permit program. While Section 404 is rightly considered "the most important federal program protecting wetlands and wetland water quality," we should begin by reminding ourselves that it protects all the waters of the United States (not just wetlands) from degredation due to dredge and fill activities. These activities are a major problem throughout the country... causing hydrological changes in waterways, extensively altering aquatic ecosystems, polluting waters with toxic substances, increasing

turbidity and siltation, and often raising serious land use questions.

There is no doubt that Section 404 is one of the most controversial, if not the most controversial, provisions of the Clean Water Act. A great deal of this controversy arises from the fact that the immense societal and economic value of wetlands is not understood. Wetlands are often viewed as waste areas to be made productive by development. Yet wetlands serve as aquifer recharge zones; water-purification systems; fish, shellfish, and waterfowl habitat; and natural flood storage areas. Obviously, these are not unproductive wastelands.

We now have only half our original wetland acreage in the lower 48 states and we continue losing wetlands at a rate of approximately 450,000 acres per year. Clearly, if we are to protect wetlands from further destruction, we must have a workable 404 program.

While the 404 program has been described as Byzantine (among its more printable epithets), it has not been unworkable. The majority of permit requests move in a fairly expeditious manner and there are relatively few outright denials of permits. We are not opposed to some streamlining of the permit process, as in Mr. Howard's proposed 404(q), but we trust that the committee remembers that a certain amount of tedious peperwork can act as an effective filter to deleterious projects.

404 is not aimed at preventing real estate projects, energy development, or road construction; such requests can and do get permits. The law simply requires EPA and the U.S. Army Corps of

Engineers to analyze requests to dredge or fill in U.S. Waters and to permit that development which will not do irreparable damage to the overall aquatic environment.

We are extremely pleased, therefore, to see the strong 404 provisions in H.R. 3282. We view it as essentially maintenance language, making 404(b) operate the way it previously did before the changes put in place by the present administration.

We also support Mr. Mrazek's proposed 404 amendment, which we understand will be introduced shortly. It would build on H.R. 3282 by prohibiting discharge of toxic dredge and fill into the waters of the United States. It would also increase EPA's responsibilities in the 404(c) permit review process. And it would amend Section 505 so that it no longer refers just to the EPA Administrator and Section 402, but would insert "Administrator or Secretary" of the Army and "Sections 402 and 404." This would allow citizen suits against the Secretary for failure to performs duties under 404 and seems quite reasonable, since 404 is administered jointly by EPA and the Corps of Engineers.

Thank you very much for this opportunity to testify today. We hope you will report Rep. Howard's bill with the indicated strengthening amendments.

Mr. ROE. Please proceed.

TESTIMONY OF CAROLYN CARR, CHAIR, CLEAN WATER ACT CAMPAIGN STEERING COMMITTEE, SIERRA CLUB

Ms. CARR. Mr. Chairman and members of the committee, I am Carolyn Carr, chairman of the Sierra Club's Clean Water Toxics Committee. I live in Auburn, Ala., and I am an economist by training.

Mr. ROE. Pull your microphone a little closer.

Ms. CARR. I am here today representing hundreds of thousands of members of the Sierra Club to express our strong support for H.R. 3282, Representative James Howard's bill to reauthorize the Clean Water Act. Other persons from the club spoke yesterday covering several specific areas of concern: Section 301(h) waivers, nonpoint pollution, and pretreatment, for example, so my remarks will be more in the form of an overview, except for a more detailed discussion of section 404.

Reauthorizing and strengthening the Clean Water Act is one of the Sierra Club's major conservation priorities. While we are pleased to see the progress which has been made in cleaning up our Nation's waters, we note with regret that the United States will not meet the two goals of the Clean Water Act, to eliminate the discharge of pollutants into navigable waters by 1985 and to attain fishable/swimmable waters by July 1, 1983. In order to reach these goals, we believe it is necessary not only to reauthorize the Clean Water Act, but also to strengthen it. It is for this reason that we support H.R. 3282.

There are any number of problems that the bill treats. One of these, of course, is the pretreatment of toxic wastes.

Annually more than 200 million pounds of industrial toxic wastes are poured into the public sewer systems. Municipal treatment plants are not designed to remove them, and these wastes not only contaminate sewage sludge and effluent water, they also damage the treatment plants themselves. Some municipal treatment works have been rendered virtually useless, as in the well-known *Kepone* case in Virginia.

We are pleased to note that H.R. 3282 keeps the federal pretreatment program intact and does not allow municipal opt-out. Quite frankly, most cities and towns lack the expertise to formulate toxics discharge standards for their sewer systems. The town where I live, which is only about 25,000, is presently grappling with the problem of excess cyanide discharge from a manufacturing plant. Quite frankly, our local staff has no idea what they should be doing about it and are having to try to get the information elsewhere. Furthermore, opt-out violates the concept of uniform, nationwide pollution control standards. Industry would be thrown back into the old days of not knowing which standards might apply where. There would also be an adverse effect on manufacturers of pollution control equipment if standards varied from place to place.

On the question of toxic hotspots there are areas throughout the United States which will not meet water quality standards even after all the Clean Water Act's existing requirements are met. We support the provision in H.R. 3282 requiring the Environmental

Protection Agency [EPA] to identify and develop controls for these toxic hotspots.

Concerning the BAT deadline extensions, we agree with EPA and industry that BAT deadlines need to be extended. When many of the regulations defining "best available technology" have not even been adopted yet, the existing 1984 deadline is unrealistic. H.R. 3282 would require BAT controls to be installed no later than 3 years after the relevant regulations are adopted. EPA and industry testimony indicate that this is an adequate time frame and we concur with that assessment.

On the question of BAT variances or waivers, we agree with the Senate Committee on Environment and Public Works that BAT variances are not necessary. Furthermore, the idea runs counter to the concept of streamlining the permit process and would increase the workload of EPA, an already entirely overburdened and understaffed agency. We are pleased to see that such waivers are not included in H.R. 3282.

The typist had a problem there on that first line, but I started to insert the information that we are somewhat surprised that EPA is currently supporting the idea of BAT waivers. To quote a friend, "Even Ann Gorsuch never did that."

On the question of water quality regulations--while we believe that the water quality regulations most recently proposed by EPA are relatively good, we remember the proposals put forward by Mrs. Burford. In order to prevent future attempts to undermine State water quality programs, we strongly endorse the provision of H.R. 3282 to incorporate existing water quality language into the law. You certainly have discussed it at some length this morning.

H.R. 3282 would require that before sewage discharged into the ocean be granted waivers from secondary treatment, it receive primary treatment plus pretreatment for toxic equivalent to secondary treatment. The bill would also mandate that sewage discharged into estuaries meet the usual secondary treatment requirements of the Clean Water Act. We believe these are excellent proposals, since it appears that the original intent of 301(h) was to apply only to small municipalities that were unable to afford secondary treatment works, not to large urban areas.

On nonpoint source, as we have achieved greater control over conventional pollution problems, we now find that half the water pollution in the United States comes from nonpoint sources. The recent internal review conducted by EPA concludes that in 6 of the 10 EPA regions, nonpoint pollution is the chief water quality problem. These nonpoint sources include soil erosion, urban runoff, sewer overflows, animal wastes, pesticides and herbicides from farmland, construction site runoff, acid mine drainage, and runoff from oil and gas exploration/production.

We support Representative Oberstar's proposed amendment dealing with pollution from nonpoint sources because it allows States the necessary flexibility to establish local control strategies. This is necessary due to the wide geographic diversity of nonpoint source problems. However, we do believe that deadlines and enforcement provisions need to be added to his proposal. Otherwise, State and municipal funding will continue to be diverted to other areas. We

would hope that equivalent nonpoint language could be included in H.R. 3282.

I might say that I serve on Alabama's Statewide 208 Committee, which is probably the last 208 committee in existence. We find that nonpoint problems and the pollution of estuaries and marshes are our most pressing concerns, although some cities have very good runoff provisions. And we are getting statewide voluntary efforts on soil erosion and animal waste problems. But especially in the areas of urban runoff and sewer overflow we just don't seem to have a good handle on the situation.

Finally, on section 404/dredge and fill permit program while section 404 is rightly considered "the most important Federal program protecting wetlands and wetland water quality," we should begin by reminding ourselves that it protects all the waters of the United States—not just wetlands—from degradation due to dredge and fill activities. These activities are a major problem throughout the country, causing hydrological changes in waterways, extensively altering aquatic ecosystems, polluting waters with toxic substances, increasing turbidity and siltation, and often raising serious land use questions.

There is no doubt that section 404 is one of the most controversial, if not the most controversial, provisions of the Clean Water Act. A great deal of this controversy arises from the fact that the immense societal and economic value of wetlands is not understood. Wetlands are often viewed as waste areas to be made productive by development. Yet wetlands serve as aquifer recharge zones; water-purification systems; fish, shellfish, and waterfowl habitat; and natural flood storage areas. Obviously, these are not unproductive wastelands.

In Alabama these wetlands support a highly productive fisheries industry. We only have 122,000 acres of coastal wetlands, but the 1981 commercial fishing harvest was 34 million pounds of fish and shellfish worth $44 million. Some 90 percent of the commercial catch and 70 percent of the recreational catch are estuarine—or wetland—dependent species.

We now have only half our original wetland acreage in the lower 48 States and we continue losing wetlands at a rate of approximately 450,000 acres per year. Clearly, if we are to protect wetlands from further destruction, we must have a workable 404 program.

While the 404 program has been described as Byzantine, among its more printable epithets, it has not been unworkable. The majority of permit requests move in a fairly expeditious manner and there are relatively few outright denials of permits. We are not opposed to some streamlining of the permit process, as in Mr. Howard's proposed 404(q), but we trust that the committee remembers that a certain amount of tedious paperwork can act as an effective filter to deleterious projects. 404 is not aimed at preventing real estate projects, energy development, or road construction; such requests can and do get permits. The law simply requires EPA and the U.S. Army Corps of Engineers to analyze requests to dredge or fill in U.S. waters and to permit that development which will not do irreparable damage to the overall aquatic environment.

We are extremely pleased, therefore, to see the strong 404 provisions in H.R. 3282. We view it as essentially maintenance language, making 404(b) operate the way it previously did before the changes put in place by the present Administration.

We also support Mr. Mrazek's proposed 404 amendment, which we understand will be introduced shortly. It would build on H.R. 3282 by prohibiting discharge of toxic dredge and fill into the waters of the United States. It would also increase EPA's responsibilities in the 404(c) permit review process. And it would amend section 505 so that it no longer refers just to the EPA administrator and section 402, but would insert "Administrator or Secretary" of the Army and "Sections 402 and 404." This would allow citizen suits against the Secretary for failure to perform duties under 404 and seems quite reasonable, since 404 is administered jointly by EPA and the Corps of Engineers.

I did not include in my written comments any statements concerning the proposed 404 amendments of the State of Alaska or Senator Wallop's proposal to change 404 so that it would not, in his opinion, affect State water rights in the West.

We are very concerned about this second problem. Section 404 and the Endangered Species Act have never prevented one western water project from being completed or from using the water granted to it by any State.

Quite frankly, the problem arose in the Riverside case with which Senator Wallop was concerned, because they refused to allow the permit process to work. The sponsors could have adopted the suggested mitigation and proceeded under a nationwide permit. The cost in perpetuity of that alternative is less than one-half of 1 percent of the total project costs, less than the cost of each month's delay while the litigation is pending.

The project sponsors also could have applied for an individual permit and contested the need for any mitigation measures. But they chose neither option, and instead decided to sue the Corps of Engineers. So we would hope that any proposals even vaguely resembling Senator Wallop's would be rejected by this committee if they are offered.

Mr. Chairman, if you would permit me, I would like to after hearing some of the comments today. Quite frankly, we have found from reading studies from the Departments of Commerce and Labor, from the Council on Environmental Quality, from the McGraw-Hill business survey, that most of the supposed effect of environmental costs on unemployment is overrated and that in fact most problems are due to the age of outmoded facilities.

Thank you very much for this opportunity to testify today. We hope that you will report Representative Howard's bill with the indicated strengthening amendments.

Mr. ROE. We thank you very much for your testimony. We appreciate it.

The gentleman from Wisconsin.

Mr. MOODY. I am very interested in asking a number of questions, particularly since you are an economist. I want to ask you some cost/benefit type questions.

Mr. Chairman, do we have time?

Mr. ROE. We are on a second rollcall right now. I would suggest that if you have questions, we can submit them in writing.

Mr. MOODY. Let me briefly ask you. You have heard what has been said about the extra cost of reaching that last inch. You can get cost/benefit relationships which are just very disparate.

Now, we might want to push for that, except money is scarce. We are in a world of scarce resources and we want to go to that last inch, but maybe we can't go to this last yard over here. Since we are under budget restraints, we can pursue the equimarginal principle, which I am sure you are familiar with, and try getting the very best bang for the buck. And we can't do that if we push the last inch.

Could you comment on that?

Ms. CARR. I suppose we could probably get a greater cost/benefit effect in pollution control from, for instance, spending some money on nonpoint source problems right now than on the very expensive point source solutions.

Mr. MOODY. Does that tradeoff, point versus nonpoint?

Ms. CARR. Right. You have that kind of tradeoff.

I suppose what probably bothers people the most concerning, as you say, the last inch in point source controls, which is really where most of the money comes in, is the fact that so much of that involves toxic pollutants and the eventual effects of that on health. There you get into that very interesting question of what is health worth.

Mr. ROE. May I offer the suggestion, we are going to miss this vote. It is a critically important vote. Let's recess for 10 minutes.

[Recess.]

Mr. ROE. Why don't we just conclude with you, Ms. Carr, because the other members are on their way back. We had a double vote.

The point that was being developed, and I think you were listening to the testimony this morning as far as BAT is concerned on advance procedure. But I think that the testimony we had from San Francisco brought forth and merged together, in my mind, anyway, the two issues.

One was the point source, particularly the nonpoint source, and the vote on the issue of combined sewage. And the same way in Milwaukee.

Do you see us, when we start talking about priorities, that we would start leaning toward some energies in cleaning up the nonpoint source issue?

Ms. CARR. I do think we have to put more energies in nonpoint. I am a little bit concerned that we don't just sort of write off the point source problem.

Mr. ROE. I am not suggesting that.

Ms. CARR. I mean as something that is intractable, but I do believe that since we have gotten to the point of facing the fact that 50 percent of our pollution is nonpoint, that we are going to have to address more effort to that.

Mr. ROE. As the environmentalists have been testifying, there are a number who have testified to that particular issue. I think it is a very, very important point.

I am obviously not against cleaning up the water, but I am thinking about the point of view that some really strong intention

in the order of priorities and the order of funding that has been made available ought to be placed now upon that nonpoint source issue.

Ms. CARR. I agree.

Mr. ROE. I think that was the sum of the question.

Thank you very much for being with us. We appreciate it.

Our next group is the National Association of Metal Finishers, represented by Mr. Philip S. Ranno of the Ranno Electro Plating Corp. in Saddle Brook, N.J., and also on the panel is Dr. Richard Schossel, senior consultant of the chemical engineering department of Princeton University.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT BEFORE THE SUBCOMMITTEE ON WATER RESOURCES, COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION CONCERNING THE CLEAN WATER ACT, PRESENTED BY RICHARD H. SCHLOSSEL, PH.D., NOVEMBER 10, 1983

My name is Richard Schlossel. My background is in chemistry, psychology, and ecology. I have been involved in industrial or university based research much of my professional life. For the past three years I have been a Visiting Fellow and Senior Consultant with the Department of Chemical Engineering, Princeton University. During that time I coordinated a hazardous waste management study that has culminated in a detailed preliminary design for a metals recovery facility to serve the metal finishing and other industries of the Northern New Jersey/Metropolitan New York area. A brief description of that study is attached. Copies of our detailed report are available upon request.

My mailing address is: Richard H. Schlossel, Ph. D., Center for Energy and Environmental Studies, Engineering Quadrangle, Princeton University, Princeton, New Jersey 08544. Telephone: (201) 494-9198; (609) 452-5445.

In the past several years I have learned much that can help resolve the hazardous waste management problem nationally. It is very straightforward. I present it to you at this time because you, the people you represent, and the nation as a whole wish to see this problem successfully resolved.

You have heard and will continue to hear people testify that any and all materials released in our environment must be treated, detoxified, or otherwise rendered harmless to human life and to the rest of the biosphere, on which human life depends. They will tell you that since our health and even our survival depend on this responsible management of materials that it is not a matter for negotiation.

Likewise, you have heard and will continue to hear that the costs associated with total detoxification and guaranteed harmless ultimate disposal of the large volume of byproducts of our industrial and domestic activity are an impossible burden. People will tell you that the costs of such programs of management will make it impossible for our country to survive economically and hence their objections to such programs are not a matter for negotiation.

Further, all these people will tell you that they hope that the federal government will successfully resolve this dilemma for them.

I am here to tell you how to accomplish this miracle with ideas that you can easily understand and probably already know, and with means already at your disposal.

First, the costs associated with maintaining public and environmental health by total detoxification for guaranteed

harmless ultimate disposal of the entire volume of byproducts of our industrial and domestic activity are an impossible economic burden. Effective hazardous waste management cannot be achieved this way.

Second, reprocessing these byproducts for recovery of usable materials and/or extraction of value is chemically simpler to achieve, costs between 1/5 and 1/10 as much as total detoxification, and is safer from a long term materials management point of view.

Third, I have a few observations about why we have not already succeeded in applying the recovery strategy, what the major pitfalls are, and what understanding is available for application right now.

- I have developed an approach for selecting the best available technology for any given reprocessing problem. It can be taught to an interested person in 1/2 hour.
- I have discovered that the basic mind-set necessary to successfully manage a recovery enterprise is different than that required to manage a manufacturing enterprise. That is why some entrepreneurs and companies that have entered the recovery business have failed badly. Based on my observations I have also developed some simple do's and don't's for a recovery enterprise which can be made available.
- While our legislators were initially aware of the importance of reprocessing in the resolution of the hazardous waste problem, current legislation, current regulations, and current administrative procedures do not reflect this awareness. This defect in legislation, regulations, and administrative procedures can be remedied by implementing three observations:
  - The byproduct of a process, industrial or domestic, is not necessarily a waste. It is a waste if no agent of our society is engaged in extracting materials or other value from such a byproduct and its destination is ultimate disposal. As long as someone is legitimately engaged in extracting value from a byproduct it is inappropriate to label it waste. If someone wishes to reprocess a material labeled waste it should immediately be relabeled a byproduct. "Waste" is a designation of social intent to withdraw from responsibility for the management of a material. Where such responsibility remains and is capable of being properly exercised the material in question is not a waste.

- If such a definition of waste opens a loophole to improper management or discharge it can be closed by recognizing that intent, capability, and active engagement in reprocessing byproduct materials for extraction of value can be easily distinguished from intent, capability, and active engagement in ultimate discharge and the two alternatives can be regulated separately.

- Our legislation, regulations, and administrative procedures need to be amended to eliminate impediments and inhibitions to the recovery approach and to add items which will encourage and facilitate its use. If we only forbid improper discharge methods we imply that proper discharge methods alone can resolve the problem. This is not true. Recovery techniques, process substitution, and proper discharge methods, taken together, can resolve the problem by innovative application of appropriate, available technology. Our legislation, regulations, and administrative procedures must reflect our positive intent in this matter.

- Finally, in holding hearings in which differing views are presented you are in effect adjudicating between them. Any resulting legislation reflects your joint judgment. Since essentially all the parties who will appear before you on this issue would like to see it successfully resolved, and since they jointly represent a significant resource of intelligence, inventiveness, and experience, I suggest that you supplement this hearing format with cooperative problem solving activities between these concerned witnesses. Trained facilitators for such problem solving are available. The aim of such cooperative activity is to invent a solution which meets the needs of all the participants while avoiding their objections. It differs from a negotiation format, which seeks to maximize individual advantage and minimize individual objections to positions arrived at separately, in that it brings the resources of an interacting group to bear on the problem. More information on this type of approach is available.

Hazardous Waste Management - The Northern New Jersey/Metropolitan New York Metals Recovery Facility

Coordinated by Richard H. Schlossel, Ph. D.

Dr. Richard H. Schlossel, a chemist, psychologist, and ecologist, first became involved with the nation's hazardous waste discharge problem in 1980. With the help of like minded colleagues at Princeton University and the support of local New Jersey Foundations he was soon hard at work clearing away the mass of confusion, fear, and accusation that seem to be the main features of our thinking about hazardous waste.

His initial insights set the tone for the optimism of his current vigorous effort to organize positive movement out of the dilemma:

- "Waste" is not a characteristic of any material, no matter how vile, toxic, or ugly. "Waste" is a human attitude toward a material and "wasting" is a human activity.
- Proper management of these discharged materials begins when we realize that they are commodities that have value when properly processed and marketed. By labeling these commodities "waste" we take on the expensive and difficult burden of proper disposal.
- All chemical and biological processes produce materials which would interfere with continuation of the process or organism if they were not removed. The community of living organisms, the biosphere, has solved this problem by passing on materials that are the interfering output of one organism to another organism for which they are the life-supporting input. Our misguided urge to bury active chemicals in the ground is based on our biological heritage. Animals characteristically bury their discharge.
- The key to resolving the hazardous waste crisis before we are all poisoned by the by-products of our productive activity is to alter the attitudes toward these materials that prevent us from managing them intelligently. We then need to organize the economic infrastructure so that all our outputs are the inputs to some beneficial later process. Hazardous waste discharge is a social, not a technical problem. Our technology is adequate if we direct it properly.

Dr. Schlossel translated these insights into a resolution of one of our more difficult hazardous waste discharge problems, the toxic heavy metal discharges of the electroplating industry. Conferring with electroplaters, State environmental regulators, sewerage district officials, local governments, and citizen advocate groups, Dr. Schlossel invented and recommended a strategy wherein metal commodities would be removed from electroplating discharge streams by ion-exchange, a well developed technology similar to that used in domestic water softeners. These metals, now securely trapped in portable ion-exchange cannisters, would be taken to a central facility where the metals would be released and reprocessed for sale. The refreshed ion-exchange cannisters could then be returned to the electroplating shops for another cycle. A key feature

of this strategy is the centralization of the more expensive and sophisicated steps in the process so that electroplating shops, traditionally small businesses, would find it economically feasible to participate.

While Dr. Schlossel's team at Princeton University works on details of process design, he, together with the electroplaters, State regulators, and other officials are now conferring with regional government agencies about funding and with interested developers about implementation.

Dr. Schlossel is now working on similar strategies for toxic organic chemicals, the goal being recovery of usable products or safe detoxification. Dr. Schlossel claims that achieving our aim of resolving the hazardous waste discharge problem is not difficult when all the participants to a particular problem situation confer. As soon as everyones particular needs, positive suggestions, and objections are out in the open, the depth of experience and ingenuity that are available in such gatherings will usually lead to a solution in days rather than decades.

Dr. Schlossel is particularly concerned that we begin to manage our current discharges properly as soon as possible. He says that only then can we face the job of cleaning up our past mistakes with confidence and commitment rather than being concerned with accusations and liability.

Acknowledgment:

Dr. Schlossel would like to thank The Fund for New Jersey and the Victoria Foundation for supporting his initial studies. He would like to thank these two foundations and The Florence and John Schumann Foundation and The Jockey Hollow Foundation for their support of the design and dissemination of the Metals Recovery Facility. In addition, he would like to thank the Center for Energy and Environmental Studies and the Department of Chemical Engineering, Princeton University for their cooperation in making their facilities available for these studies.

A CENTRAL METAL RECOVERY FACILITY

A Preliminary Appraisal of Feasibility for the Treatment of Electroplating Job Shop Wastes

by

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October 1983

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CHAPTER 1: INTRODUCTION

Over the past decade and a half, there has been a growing awareness in government, industry, and the general public alike that more sophisticated methods must be used in the management of the discharges of our industrial society or our health and well being will suffer significantly. This awareness has resulted in legislation and concomitant regulations which often address the problem in terms of prohibitions with the result that the atmosphere in which efforts toward adequate detoxification or reprocessing for reuse of materials have been attempted has been clouded by confusion, fear, and accusation. The work described in this report, comprising a preliminary design, feasibility study, and economic evaluation, was undertaken to provide a positive alternative for the metal finishing industry in meeting its obligations under current environmental regulations and to demonstrate that the negative cloud which hampers progress toward effective discharge management can be dispelled.

An initial examination of the discharge management question made it clear that it is primarily a social and economic task, not a moral or technical issue. The guiding principles for the initial design are as follows:

- "Waste" is not a charcteristic of any material, no matter how vile, toxic, or ugly. "Waste" is a human attitude toward a material and "wasting" is a human activity. By labeling a material "waste" we take on the expensive and difficult burden of proper disposal.
- All chemical and biological processes produce materials which would interfere with the continuation of the process if they were not removed. The community of living organisms, the biosphere, has solved this problem by passing on materials that are the interfering output of one organism to

another organism for which they are the life-supporting input.

The key to resolving the hazardous waste discharge problem before crucial life-supporting aspects of our environment are irreversibly damaged is to alter the attitudes toward these materials that prevent us from managing them intelligently. We need to organize the economic infrastructure of our society so that all our outputs are the inputs to some benign or beneficial natural or industrial process. Our technology is adequate if we direct it properly.

The major social aspect of this particular problem is that the metal finishing industry is, to a large degree, made up of a number of independent job shops clustered in metropolitan areas. These job shops are usually moderate in size and lack sophisticated in-house technical staff. They are also mostly sole proprietorships which, if faced with economically impractical alternatives, would shut down, thus depriving their home communities of employment opportunities and tax revenues.

The regulatory aspects concerning this problem have been promulgated by the United States Environmental Protection Agency in the Metal Finishing effluent limitations (1). This regulation sets concentration limits on the discharge of pollutants from the electroplating and metal finishing facilities into U.S. waters or into publicly owned treatment works. The reference cited above gives a summary of the regulation, the background of the regulation, the legal authority, and the compliance schedule. The compliance date for existing non-integrated electroplating plants is April 27, 1984.

The major technical aspects of the problem derive from the need to process relatively large volumes of rinsewater which contain only small amounts of

dissolved metal salts and to significantly reduce the concentration of these already dilute solutions to meet discharge regulations. Further, it is necessary to process the rinsewaters from each metal finishing line separately so as to maintain the segregation of the metals involved. The separation of mixed metals, except in special cases, is very difficult and expensive. Neither the value of the recoverable metals nor the profitability of the metal finishing process justifies the large investment in the equipment and operating costs for separating mixed metals.

SUMMARY

In reponse to a need for more intelligent management of industrial discharge and the specific need of the metal finishing industry to meet federal regulations, several interested individuals cooperated in developing a strategy which accommodates the social and technical conditions this industry faces. Ion-exchange, a well established technology, is recommended as the basis of an approach which involves (a) in-plant capture of metal ions from the various wastewater streams of the electroplating process, (b) transport of exhausted ion-exchange cannisters to a central recovery facility, (c) regeneration of cannisters for return to the metal finishing plants, and (d) processing of the resulting concentrated metal salt solutions for sale. The favorable economics of this process results in large measure from the centralization of the regeneration and processing steps which require sophisticated personnel and equipment.

A review and comparison of alternatives is reported. The ion-exchange/central regeneration strategy has significant advantages over the E.P.A. suggested hydroxide precipitation method. In comparison with the precipitation method, it produces no toxic sludge which would require ultimate disposal in landfills, and it is significantly lower in capital requirement and operation costs. It can also be used to complement other in-plant metal recovery systems when the amount of metal that would otherwise be discharged justifies the investment in such equipment.

A conceptual level design for the operation was developed using estimates of metal discharge rates calculated from information provided by a significant fraction of Northern New Jersey/Metropolitan New York electroplaters. Assuming that 100 of the area's 300-400 electroplaters would wish to participate, a

central facility involving a total capital investment of $6.8 million would be required. If the number of electroplaters interested in this strategy were to increase significantly, or if, as is expected, other industries with similar discharges should wish to participate, the central facility capacity could be expanded by a factor of four with little additional requirement for further capital except for cannisters.

The combined operating cost of the central facility, credit for metal sold and consulting services by the staff, depreciation, return of the initial capital, and profit to the developer result in a yearly fee to a representative electroplater of $12,500. This fee is related directly to the amount of metal to be recaptured by the central facility, and therefore it reflects the size of the individual plater's operation and its efficiency. Increases in efficiency directly result in reductions in fees.

In order to interface with the central facility, the representative electroplater would be required to modify his current operation and install new equipment at a cost estimated at $10,000. A comparable investment for the E.P.A. suggested precipitation system would be $183,000. The latter would also require considerable additional floor space whereas the former would not.

The central facility is intended to carry out metal recovery. If a metal finisher produces mixed metal discharges for which economically feasible separation processes are not yet available, these mixed metals will not be captured by this facility. This design is not intended for waste pretreatment preparatory to disposal.

Some bench-level engineering measurements remain to be carried out in order to verify supplier and scientific journal data, and to choose among competing process alternatives. The authors estimate that the error bounds on the calculations presented in this report are ±25%.

Mr. ROE. Please proceed.

TESTIMONY OF PHILIP S. RANNO, RANNO ELECTRO PLATING CORP., SADDLE BROOK, N.J., NATIONAL ASSOCIATION OF METAL FINISHERS; AND RICHARD SCHLOSSEL, SENIOR CONSULTANT, CHEMICAL ENGINEERING DEPARTMENT, PRINCETON UNIVERSITY

Mr. ROE. I want to welcome you to the committee. I know you have been very helpful to us in the past in your testimonies, Mr. Ranno. The Members—both of them are from New Jersey. That doesn't mean you are going to get all your points.

Mr. RANNO. Thank you, Mr. Chairman.

Mr. ROE. Be that as it may, I welcome you back. I know you both have been working very hard in this particular area and have direct expertise and have been, what do you say, operating with the legislative process up to this point. Now we would like to hear from you not only as an industrialist from the State of New Jersey, but also representing the National Association of Metal Finishers. So you go ahead. Both of your testimonies will appear, of course, in full, but I see they are not long, so go ahead.

Mr. RANNO. Thank you, Mr. Chairman. I will be brief.

Mr. Chairman and members of the committee, I am Philip S. Ranno, president of Ranno Electro Plating Corp., Saddle Brook, N.J. I am here today representing the National Association of Metal Finishers [NAMF], which I serve as a member of the board of directors and past president. I am also a member of the Passaic Valley Sewage Commission's Public Advisory Committee on Pretreatment in New Jersey and thus have a longstanding involvement and personal interest in the pretreatment program.

Pretreatment has been an issue of major concern to members of our industry since electroplating is one of the first industrial categories to be regulated by EPA categorical pretreatment standards. NAMF's members, which represent a segment of the overall metal finishing industry, currently face an April 1984 compliance deadline. Therefore, today's hearings are extremely important. We hope we will underscore the need for the Congress to act quickly and modify the existing pretreatment program.

For several years, NAMF has been advocating a flexible approach to the pretreatment program. We support efforts by the States, cities, and municipal treatment authorities to permit an alternative approach to categorical pretreatment standards. Today I would like to focus on a specific proposal involving the use of innovative technology in our industry. We are here to urge that Congress clarify the act's application to innovative pretreatment technology.

Also appearing today is Dr. Richard Schlossel from the Princeton Center for Energy and Environmental Studies. Dr. Schlossel will provide what is, in my view, an excellent demonstration of why recognition of innovative technology in the pretreatment program is needed. NAMF requested Dr. Schlossel to appear today because of his expertise in the development of technology to manage the discharge of metals.

Let me very briefly summarize the major points in order to provide you and the rest of the committee with a better understanding of why we feel so strongly that the use of innovative technology in the pretreatment program is best for our industry and the environment.

NAMF represents an industry of small businesses with an average electroplating job shop employing 15 to 20 people and capitalized at approximately $250,000. As small businesses, we are therefore severely impacted by any costly regulatory requirements.

Existing EPA regulations for electroplating pretreatment standards will impose approximately $1.3 billion in capital costs and nearly $500 million in annual operating costs. According to the agency's own estimates, these standards will result in the closure of approximately 20 percent of the job shop firms in this country and the loss of nearly 10,000 jobs. That is a staggering impact on this industry.

EPA pretreatment standards for electroplating and metal finishing are based on the use of conventional treatment technology. This technology consists of cyanide oxidation, chrome reduction, metal precipitation, and solids removal. As I have noted, this technology is expensive, both in terms of capital and operating costs. In addition, it results in another environmental problem, since the technology produces large quantities of sludge which must be disposed. For some time it has been apparent that there must be a better way to protect the environment at a lower cost and with less generation of solid waste.

The recent work of Dr. Richard Schlossel provides an excellent illustration for the need of additional flexibility in the pretreatment program. Dr. Schlossel's innovative approach involves the use of portable cartridges containing ion exchange resins, and the recovery of the metals from these cartridges at a central facility. We believe that this is the kind of less costly, resource-conserving approach that the Congress should encourage.

Dr. Schlossel has for some time been concerned with the management of hazardous waste. He believes, as we do, that a sound theory of environmental management involves the recycling and reuse of toxic substances to the extent practicable. In collaboration with the New Jersey Department of Environmental Protection, the Passaic Valley Sewerage Commission, and the electroplating industry in New Jersey, Dr. Schlossel has been exploring innovative approaches for dealing with the toxic metal wastewater discharged by job shop platers. His objective was to develop a new approach that would control the release of pollutants in a manner that is both economically feasible and environmentally sound.

Dr. Schlossel's innovative approach involves the treatment of job shop electroplating wastes at a centralized recycling and recovery plant. At the individual plating shop, the system would involve segregation of waste streams and flow reduction and the use of ion exchange resins in portable cartridges. The cartridges would be transported to a central treatment facility, which would remove the toxic materials from the cartridges so that they could be reused. Dr. Schlossel has recently confirmed that this approach is both technically and economically feasible.

The central recovery plant scheme developed by Dr. Schlossel has a number of advantages over standard treatment technology currently available. By eliminating the requirements that plating shops install individual treatment systems, the treatment costs to platers would be dramatically reduced. In addition, the use of a central recovery plant would result in far greater effluent reduction than the use of conventional treatment systems by individual plating firms. Finally, because metals previously lost to the environment are recovered for reuse, the problem of treatment sludge disposal would be greatly minimized.

Although this new treatment scheme is a better solution, the industry cannot take advantage of it at present. Additional time is needed to attract the firms and individuals necessary to build the central treatment facilities. As with any new treatment installation, the startup time will be significant. Under the present law, electroplating job shops must comply with pretreatment standards by April 1984. Thus, unless more time is available, firms in New Jersey and other NAMF members will not be able to take advantage of this promising new development.

The Congress should clarify the availability of a mechanism for firms which plan to use innovative technology to meet pretreatment standards. As discussed above, electroplating firms currently face an April 1984 deadline for compliance with categorical standards. In order to take advantage of the new central recovery plant technology which Dr. Schlossel has developed, we need more time than allowed by the current regulations.

The Clean Water Act recognizes the value of innovative technology in provisions applicable to direct dischargers. Section 301(k) of the act provides that a facility subject to an NPDES permit may receive a 3-year extension of time to comply with best available technology effluent limitations if it proposes to use innovative technology. If a plant proposes to comply using an innovative control technique which has a substantial likelihood of achieving significantly greater effluent reduction than required, or by using a system that has the potential for significantly lower costs, and the system has potential for industrywide application, the date for compliance may be extended from July 1, 1984—the current deadline—to July 1, 1987.

NAMF believes that the concepts in section 301(k) of the act are sound and should be applied to the pretreatment program. Like the effluent limitations for direct dischargers, pretreatment standards are based on the use of technology. It is in the public interest to allow flexibility in compliance deadlines to allow the development and use of improved and innovative control techniques. Accordingly, NAMF urges that Congress make it clear that the mechanism in section 301(k) of the act is applicable to pretreatment standards under section 307(b) of the act.

In conclusion, Mr. Chairman, our commitment to a clean environment is as strong as our commitment to the overall success of the industry. We know that we cannot have one without the other.

I appreciate this opportunity to present our concerns with the pretreatment program and will be happy to answer any questions or provide any additional information the committee may desire.

Mr. ROE. We will hear from Dr. Schlossel and then we will ask questions of both of you.

Dr. SCHLOSSEL. Thank you, Mr. Chairman, members of the committee. My name is Richard Schlossel. I have a background in chemistry, psychology, and ecology. For the past 3 years, I have been involved with hazardous waste management studies at Princeton University and for the past 2 years in applying the results of these studies to a design for an overall strategy to deal with the toxic heavy metals output of the plating and other metal-using industries in northern New Jersey and Metropolitan New York.

Now, the issue here is really that in order to achieve a clean environment, in order to have the kind of public health guarantees that we need in order to have clean water, what we are doing basically is we are managing materials and I would like to look on the management of materials in a positive light.

We have two sides to the question. One is the maintenance of public health. We don't want to put toxics into the environment in a way that would be damaging to the public and a way that would be damaging to the biosphere which supports humanity. On the other hand, we have an equally pressing issue that we don't want to damage our economic base by imposing on our industries costs that they cannot bear. What I think we have lost sight of in this is the fact that when we argue about, should we or should we not detoxify a material before we discharge it, that there is another alternative and that other alternative is recycling the material, it is reprocessing and extracting a value.

The reason I bring this up is, first, that we have found in our studies that the technology is available to reprocess and recycle most of the discharged materials that we are worried about. The available technology needs to be sorted through, and proper selections made. But what we do find is that the cost of reprocessing materials is between a fifth and a tenth of the costs of properly detoxifying those materials before ultimate discharge. And so we have a real economic incentive to look seriously at reprocessing of materials.

Now, in this case, this is what we have done. Since metals are useful, valuable materials, I thought it was a waste to clean up our waters and not have these materials for reuse. What I did was I sorted through the several technologies that are available for this and I selected the one that was best suited to the economic and the technical realities of the electroplating industry and what we have here are a number of small shops. We have limited any technical capability in-house. We have relatively dilute solutions of metals going down the drain and these things together were synthesized into the program that we have put forth at Princeton in our detailed preliminary report.

The key here is that we have put in each plant the capability of removing these metal commodities from the waste stream before the waste stream goes down the drain. That is the simplest step. We have put the complicated steps which are the regeneration of the ion exchange cannisters, the reprocessing of the metal for resale in a central facility and we save money two ways in doing that. First, we reduce the amount of expertise that we need redundantly in each of these plans; and second, we reduce the amount of

expensive equipment that we would need redundantly in each of these plans.

I was very pleased with the economic analysis which my group at Princeton has done indicating a significant economic advantage here of a recycling method. Since recycling and not putting these materials into the environment is really an advantage, it is also unusual that it was also an economic advantage to do this and so we win whichever way we look at it.

One of the reasons we were able to put this design together was that we consulted not only with the plating industry about their specific process and their specific needs, we also consulted with the State regulators about their needs; the sewage districts about their needs. We spoke to the environmental groups locally and we found that we could synthesize all of their needs into one particular design.

In closing, I want to point out just one thing. Reuse or recycling of materials requires that the economic and legislative environment within which this is done be facilitating, be favorable and even though our environmental programs have had reuse and recycling as a concept in them, the legislation, the regulations, and the administrative procedures have really not reflected the necessity of doing reprocessing.

What I would urge you, Mr. Chairman and members of the committee, to consider seriously, not only in the legislation before you right now but also in other environmental legislation which is currently being examined, is to make sure that this legislation and the regulations that come out of it facilitate, actively if possible, application of technology to reprocessing because in that lies the lowest cost and greatest safety in terms of dealing with point source discharges.

Thank you, gentlemen.

Mr. ROE. Well, we want to thank you, doctor, very much and your statement will appear in full in the record.

Have you done any testing? Is this theoretical or have you done any pilot work at this point?

Dr. SCHLOSSEL. At this stage, we have done some design work, employed not only students and faculty at Princeton, but also two consultants with a combined 90 years of experience in the ion exchange trade. We are currently putting together the benchwork which is the final testing of some of these procedures. We are testing not so much the technology which is very straightforward and has been around for a very long time. If any of you have water softeners, you have ion exchange technology in your homes.

Mr. ROE. What is your process to regenerate the capsules?

Dr. SCHLOSSEL. We regenerate the capsules in a standard way. The cad ion resins by strong acid and the iron resin by a combination of strong base and salts. So the regeneration procedures are standard.

There are a number of alternatives for some of the metal capture strategies and what we will be doing in the next few months is sorting out which of these is optimum for the particular applications. We will also be verifying that the numbers that were given us about metal-carrying capacity of the various resins from the sev-

eral manufacturers we have been in contact with are, in fact, correct. So we will be doing some cleanup-engineering studies.

The technology that we are dealing with is established technology. Ion exchange has been around for 75 years. It has been marketed for this purpose for approximately 15. What we are doing here is a significant innovation in the design of the enterprise.

Interestingly enough, what we need to apply this technology is better understanding of basic business principles. We need to put the expertise in technology in the right places. We need to be able to optimize the situation economically from the point of view centralizing expensive capital equipment when possible, just basic business sense. It is not really that complicated or that difficult. We need the kind of innovative entrepreneurial sense that has gotten the American industrial establishment where it is and we need that kind of entrepreneurial sense coupled to the use of technology for reprocessing.

One of the things that I discovered in investigating this, and this is something that was a real surprise, and that is that the kind of thinking, the kind of mind set that goes into reprocessing and recovery, is different than the mind set that goes into manufacturing. We haven't previously recognized this. A lot of entrepreneurs have attempted reprocessing and not been successful because the basic issues are different.

There are certain do's and don'ts that apply to reprocessing that are unique to it. Several companies that have attempted it have gotten into trouble not only financially but also legally because they have wound up taking materials into their facilities that they have no capacity to deal with.

This is getting into detail and I don't want to take the committee's time, unless the committee is interested in specific do's and don'ts. Reprocessing is a tricky way of applying available technology and it works. It really, honestly works.

Mr. ROE. Both you and Mr. Ranno pointed out that if you have a grouping of plating operations in a particular region instead of having individual treatment plants with all of the indigenous problems that go with it in each respective plant, you are saying, "Let's collect the material and take the material to the plant to be processed," which I think has merit.

I think it is an approach. It is an approach. What would you do if you had an area, however, where you had only one plating operation in, say, 60 square miles or something of that nature?

Mr. SCHLOSSEL. That very rarely occurs. Electroplating specifically and metal finishing generally are service industries to manufacturing and they tend to occur in concentrations of manufacturing. If we had an electroplating shop out in the middle of Iowa, what would it be doing? Really, where we have a concentration of electroplating shops, for instance, in the Passaic Valley in the whole northern New Jersey area and they serve the industrial complex of northern New Jersey and New York. We have another concentration in Philadelphia and Camden. There is another one in Pittsburgh. There is another one in Providence. They tend to center and cluster like that throughout the Nation.

Where you do have somewhat isolated metal finishing and metal handling facilities it is feasible to consider trucking these cylinders

over longer distances simply because of the advantages of central reprocessing. What we are talking about here are cannisters that weigh approximately 180 pounds by our current design. These cannisters can capture and hold in strong chemical combination between 4 and 7 pounds of metal, depending on the metal.

Transportation isn't the problem. The transportation of the cannisters is completely safe. I could break open one of these cannisters totally saturated with a toxic metal and walk barefoot through the resin. There is no danger. It is only the strong acid and strong base that will release the metal. That makes this kind of facility a compatible neighbor. It is not handling dangerous or toxic material out in a way that could be disbursed and we considered that very carefully when we were in the process of recommending siting for this and also in the choice of the technology because we are dealing with a populated area.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman.

I was intrigued by your background. I suspect that you might have had to have a background in psychology in order to survive in the other two backgrounds.

Mr. ROE. That will help around here, too.

Mr. PACKARD. I think all of us ought to have a little bit of that.

I sense from your testimony, both the written and oral testimony, Mr. Schossel, that the technique that you drafted or that you developed would meet the clean water standards now existing.

Dr. SCHLOSSEL. It would not only meet them, it could meet more stringent standards as well. Ion exchange as a method produces the cleanest water in laboratory environments that we use so that appropriate application of this technology could meet any water standards we would choose to impose.

Mr. PACKARD. And on a volume basis, you perceive that it would do it in a cost-effective method.

Dr. SCHLOSSEL. We would be able to meet the current standards in a cost-effective method; yes, sir.

Mr. PACKARD. Sometimes in laboratories, we find where procedures are effective but when it becomes adapted to the commercial aspects, it becomes sometimes not cost effective. How far are you into the program? Is it a pilot program? To what extent have you now proceeded on your experimentation?

Dr. SCHLOSSEL. We have completed our detailed preliminary design. If the committee is interested, I will be glad to make our report available to you.

The technology is in use in many industrial applications. It is the technology that removes radioactive materials from the water on our nuclear submarines. It is used in mining. It is used in a variety of metal processing and metal recovery applications and so it is not strictly a laboratory tie.

In terms of our specifics, this detailed preliminary design gives us the basic plus or minus 25-percent confidence limits economic design and on the basis of this, we are proceeding to negotiate with developers, negotiate with financial sources, et cetera.

The remaining technical work in the laboratory is purely testing and refinement at this stage. It is selection between alternatives. It is the checking and making sure that the numbers we have gotten

from our industrial sources of materials are correct and I would say that this would be complete in 4 to 6 months.

Mr. PACKARD. And you are saying for a 3-year extension compatible with the sections of the regulations now? In those 3 years, do you think that your system could be implementable on a level that would satisfy some of these industrial complexes where there is electroplating going on?

Dr. SCHLOSSEL. I can give you some approximate numbers about our implementation schedule right now, if you wish. I foresee approximately 6 months in cleaning up engineering details making specific measurements in our laboratories. Simultaneously with this, the plating industry of northern New Jersey and Metropolitan New York is analyzing our preliminary report in detail with an eye to making recommendations to their membership and to form the basis for a relationship with a developer in order to build this facility.

I would see that process taking also approximately 6 months.

At that point, with a relationship with a developer in hand and the final details in hand, it would take a professional engineering firm on the order of 6 to 10 weeks to produce the final design and I would say 9 months to 1 year to execute the design in the form of a facility which would then be capable of being up and running.

Not all the communities would be interested in employing this procedure as far along as we are. Princeton University will make this preliminary design report available to any and all parts of the plating industry nationally that wish to see it. This is not a confidential document. Nor was it prepared exclusively for northern New Jersey. This research was publically funded and will be generally available.

Mr. PACKARD. The state of the art is constantly changing and improving naturally with technology and it is conceivable that after you have developed this system that there can be additional improvements in the state of the art and there would tend to be a constant wishing to or requesting for delays on the basis that there is something better now being studied or you have a pilot project on a better system than what you are proposing.

It would be easy, I suspect, for the industry to constantly be looking for a way to just postpone implementation of the regulation. What is your response, Mr. Ranno, in regard to this being merely a delay technique on the basis that there is always innovative pretreatment technology that is going to be better and therefore let's wait before we implement the regulations now?

Mr. RANNO. If I could attempt to answer that, Mr. Packard, we, and I am speaking for industry now as a representative of the NAMF, this in no way is a delaying tactic on our part and I am not quite clear on what you mean when you say, in other words, if 2 years down the road or a year and a half down the road, we are into this and something else comes up we are going to ask for another 2 years or another 3 years. That is not the concept that we are talking about now. The problem we have right now is this: By April of 1984, we are required to meet certain categorical standards.

Mr. PACKARD. I understand.

Mr. RANNO. What we are saying here basically is there is innovative technology that we are presenting to Congress today that we are going to present later to the EPA and we are saying that not only can we meet these standards but we can do it better. We can keep businesses in business. We are not going to take the metals out of the water, put them into drums and then put them in the ground and 10 years later dig that ground up and put them across the street again. We have a better way of doing this. This is innovative technology to us as industry and in no way do we mean to imply a delaying tactic at all.

Now, I know I didn't quite answer your question as to what is to prevent us from doing that, but that is not the intention of this.

Mr. PACKARD. Well, I am not suggesting that it is the intention. I think, though, that this committee has always been a strong advocate of new technology and I don't think that you will see a change in that attitude on the committee, but nevertheless, we recognize that there is always a new technology that can be presented and there comes a point in time when you have to say we either meet the standards or we discard the standards and I think that that is what we would be looking at.

In other words, there is always the possibility that this new technology would not, within a 3-year period, be implementable on a broad scale to the industry and therefore another request for an extension and I think what I would be looking for is some assurances that this technology would meet the requirements or else you go to the old technology that has been proven. I suspect that is what I am suggesting in the question.

I am not anxious to see us constantly being requested for delays of another 3 years as we have seen in smog devices on automobiles and so forth because it isn't either cost effective to put this into practice, your procedures, or there is no other technology that might be better and more cost effective and therefore we need another 2 or 3 years to research and then ultimately implement that. I think that is my comment, sir.

Dr. SCHLOSSEL. May I comment further?

Mr. PACKARD. Certainly.

Dr. SCHLOSSEL. The technology that had been proposed in order to meet these standards is, as I am sure you know, precipitation of mixed metals. This produces a material which is a solid waste and which must go to land disposal causing a further problem because this is leachable material.

The alternative that we are proposing here and that we have gone through the process of producing a detailed design for produces no sludge, can meet the standards that are on the books now and probably do a bit better and it has the added advantage of being a much lower cost strategy.

Now, the estimates that the NAMF made and presented to me were that the costs associated with putting the precipitation strategy into place would cause approximately 40 percent of the job shop platers to close their doors. Our estimate is that the costs associated with this technology would result in less than 10 percent of the industry opting to close its doors, perhaps even closer to 5.

Now, in terms of applying technology, there is diminishing returns in that as well. If this technology actually does the job and the cost is reasonable, there is no reason to keep fishing for more.

In terms of your uncertainty, I would say that it is well founded, that there are many industries that have taken this particular tact. What I would suggest you do in formulating further legislation is provide statements in the legislation that require some kind of commitment and some kind of manifestation of serious involvement with this technology in order to take advantage of this delay and I think that can be written in.

Mr. PACKARD. I have taken more than 5 minutes, Mr. Chairman.

Mr. ROE. The gentleman from Wisconsin.

Mr. MOODY. Yes. Thank you, Mr. Chairman.

This recycling certainly raises an interesting prospect. If the recycling is as effective as you describe, then why would the metal finishers ever need an opt-out provision? You can simply recycle. You don't have to worry about the opt-out, would you?

Dr. SCHLOSSEL. I don't understand the thrust of your question, sir.

Mr. MOODY. Well, some metal finishers have indicated that they would like to opt out of the pretreatment program.

Mr. RANNO. I think I will attempt to address that. Your question comes from a different world that we have tried to stress here today. I stated in my testimony and for years NAMF has stated that it supports local control, opt-out provisions, et cetera, et cetera.

Mr. MOODY. Have you consistently asked for opt-out, correct?

Mr. RANNO. Yes, we have, but we have felt that that is the proper way to do the job correctly. We still feel that way.

Mr. MOODY. To do pretreatment yourself?

Mr. RANNO. No; not to do pretreatment ourselves, but to incorporate local control into the pretreatment amendments. We are here today, however, stressing the importance of innovative technology which is fairly recent. This is fairly recent.

I don't know if that answers your question.

Mr. MOODY. Well, it just seems to me that if you are recycling this and purifying it in effect, whatever you finally discharge is not going to create a problem. Isn't that true?

Mr. RANNO. That is correct.

Mr. MOODY. So why would you need the opt-out provision?

Mr. RANNO. Why would we need the opt-out provision if what we are discharging through this innovative technology would not present a problem?

Mr. ROE. If the gentleman would yield, I think for clarification when you use the terminology "opt out" you are speaking specifically there as to whether determined totally by a national standard or the local, meaning States and so forth, would be able to set their standards which may vary in part or shouldn't be lesser, of course, than the State standards. You are talking about being operated in some system relationship in a particular local area of the State?

Mr. RANNO. Yes, that is right, Mr. Chairman. Thank you.

Mr. MOODY. It doesn't seem to me as though you are going to have a problem if you have this recycling technology under control in either way.

Mr. RANNO. Well, we don't have that innovative technology yet. That is why we are here. That has not even bit into law yet. If we get into the law, I don't think we will have a problem. If we don't, we may have a problem. So it is a cart-before-the-horse situation.

Mr. MOODY. The other question, you know we had a mail metal finisher here from Connecticut a week or so ago, I think you will remember, and he was very forceful in saying that he did not think that the other metal finishers should be allowed to meet different standards than he has had to meet and he has gone ahead and invested and he is in competition with those who now perhaps would like not to meet the same standards and he felt it would be unfair to those who have gone ahead and met the problem head on and invested company money to meet standards.

Do you have any comments on that?

Mr. RANNO. Well, my comment to that would be that the standards that these electroplaters in Connecticut are meeting happen to be local standards. They have been meeting those standards for years. They happen to be the State's standards.

Now, if you are asking me is it inequitable that they should have to meet those standards and that we have to meet other standards, now we get into the whole subject of equitability and this is a very, very broad subject.

Mr. MOODY. Well, it is basically why should one metal finisher have to meet higher standards than another. If we want to put them on an even playing field, don't we want them to be meeting the same standards around the Nation? Why would we want to favor one over the other? It is not very complex.

Mr. RANNO. Are you talking economics now?

Mr. STANGELAND. If the gentleman would yield on that. I think we want to set an equal standard throughout the Nation so that we don't dislocate industry. But what a State chooses to do to its industry is another question and the standards in Connecticut supersede the Federal standards and what Connecticut is saying, make the Connecticut standards the standards for all of the United States to equalize. I am not sure that that is totally fair.

Mr. PACKARD. Would the gentleman yield further?

Mr. MOODY. Certainly.

Mr. PACKARD. I think that the role that this committee and the Federal Government ought to take is to do as we have been doing and that is to set a standard that is minimum for the country and then the State, of course, as Mr. Stangeland mentioned, has the option to change or alter that standard as long as it is not downward.

I think at least from my point of view, once the standard is established and it may relate to what you are suggesting, I don't care how you reach that standard, whether you use additional or a different technology than the standard technology that has been used for years or whatever, but I think that the standard ought to be what is required. I don't believe we ought to write into the law—and maybe that is not what you are asking, is that we write into the law a permit to use your system or your procedure to achieve the standard. I don't think that is the role of any law.

Mr. ROE. If the gentleman would yield, I think what they are saying is that we have used and have a special set-aside in the

basic fundamental law where we refer to the use of innovative technology. The fact of the matter is we even go so far, if my memory is correct, that we effect a partial bonus where there is a regular sewage disposal system involved or someone chooses to go onto innovative technology. What they are saying here, as I hear it, is that there should be a recognition that if we can use innovative technology, that would produce more economical and just as effective results that that ought to be recognized.

But I think what you are saying, which is concerning the gentleman from California, which has merit, is the fact that, OK, let's presuppose we would do such a thing. I don't think there is anything wrong with that request except that if it is, then we will go another 3 or 4 years then we do run into a problem. That is what you are saying, in other words.

Mr. PACKARD. That is right.

Mr. ROE. I think economically, if the gentleman would yield further, you come back and say, "Gee, it is a little bit crazy," to go into it this way but as the doctor is pointing out, the technology he is speaking to and the process is not true. The adaptation to this field is different. I understand it has been used many years in the chemical industry and many other industries as far as absorbing material and releasing it in whatever you are collecting. That is pretty much what you are talking about, isn't it?

Dr. SCHLOSSEL. Yes.

May I make a further comment?

Mr. ROE. Sure.

Dr. SCHLOSSEL. We have no regulations in California seeking to ban the land disposal of the very kind of hydroxide sludges that we are talking about that have been produced by the standard technology. My understanding is that we now have proposed or perhaps adopted amendments to RCRA to consider banning certain of these metals from land disposal nationally.

Mr. ROE. Right.

Dr. SCHLOSSEL. Now, what that would mean if we look at it full in the face is that all of these hydroxide precipitation systems, whether they be in Connecticut or Los Angeles or Chicago, would really no longer be useful because there would be no place to put the sludge. Now, what I would like you to consider is what the impact of such legislation would be, both in terms of its benefits on the environment, its negative impact on industry and also, gentlemen, is there a possibility of providing some financial support to members of the electroplating industry that would want to switch from the older technology to some innovative technology that would be far superior. Is that a possibility?

Mr. ROE. If the gentleman would yield, the committee is highly knowledgeable and has had expertise over the years technically and otherwise on exactly the point you are making. You make all kinds of sense. The idea that you have half a dozen pieces of legislation now are really contravening each other. You have the solid waste superfund situation and you get into the ocean dumping law.

There is legislation about to be introduced within the next 24 hours that says no more dumping in the 6-mile bite off the coast of New Jersey or 12 miles. You have to go out to 125. Why? Nobody knows these kinds of things. So, in effect, what is happening is that

as we are concentrating the waste materials involved, whether it be in the plating industry or any other type of toxic materials, we are now putting it into, talking about hot spots, we are putting it into a mass and now you have got to get a mass someplace. That is the problem we are having right now in Wayne on the disposition of the thorium materials on the low radiation work that was done 30 years ago by the W. R. Grace Co.

There are only three places in the Nation that are now eligible to dump that material and they are all national depositories.

Of course, there is another law that requires that States get together on finding some kind of regional State accommodations, as you know, and regrouping thereof where you would deposit within those respective States some kind of a low-level radiation place for disposing of this material. So, in effect, what is happening, the circle is shrinking and shrinking and shrinking and shrinking and people are speaking philosophically on a great many of these issues, but they are not looking at them and they are not able to understand.

Never mind the economics involved. What do you do when you concentrate the material and then you have to dispose of it someplace, somehow? When the testimony was given today, which was very good testimony from San Francisco, they brought this to very sharp focus without even realizing, I think they were doing it, the debate we have had around here for the last 5 years on making the elimination of combined sewers eligible as part of the grant process system which the Senate has been knocking out for the last 5 years and candor about it because they don't understand the technology involved.

If you are going to do this to a nonpoint source around the San Francisco area, which they are doing because they are eliminating the combined source which is a combination of storm water runoff and everything else coming down on the streets, they are already dealing with the nonpoint source as far as that issue is concerned, you see. The difficulty around here is partially political and political in this sense. I am not talking partisan politics. I think it is political from the point of view that there is emotion involved. More people know more things that are untrue about issues. I don't mean that unkindly. Many of them take a particular issue they have in mind and they could be dead right on it but it doesn't relate to the whole.

So simply what you are saying now, as I understand it, is that the present process being required to or the requirements to the plating industry is saying we are required under so-called known processes to concentrate our materials because that is what we are doing to get them out of the sludge from the pretreatment. That is what it is all about. What do we do with that material? Is there some better way of doing that, innovative technology; that is basically what you are saying.

In order to achieve that, you have a timeframe involved and your time is running out in 1984.

Dr. SCHLOSSEL. I would say further, sir, that in order to deal with the hazardous waste problem nationally that we should look to reprocessing to realistically reduce our discharge level by a factor of

100,000 and then we could detoxify and go to ultimate discharge with the remainder.

Mr. ROE. The committee understands what you are saying.

Are there any further questions?

Mr. MOODY. Yes. What I was trying to say about Connecticut, if I remember correctly, is that the gentleman from Connecticut was not saying Connecticut's standards should be nationwide. He is saying they have met BAT and they want to know why shouldn't everyone else have to meet BAT. It is a BAT/BPT controversy, not Connecticut versus other States. He was saying they have gone ahead and met BAT and now there is an argument that some people should be meeting BPT and he is saying that puts us at a competitive disadvantage.

Mr. RANNO. I realize I don't have the answer to that, but if I could just relate it. We are talking about equality here, if you will. Economic equality is really what they are talking about.

Mr. ROE. No, they are not. If the gentleman would yield. No, they are not. That is where you are losing sight of the point. What they are saying fundamentally is we have met the requirements that you require us under the law to do. Now, we are put at a competitive disadvantage because you have not forced everybody else to do that. If you want to tighten up the standards, we are not going to quarrel with that, but we want everybody else in the other 49 States to meet those same standards.

Converse to that, they are talking about an economic test. You are talking about an economic test, but those who are interested in cleaning up the environment are saying, "Hey, look at it." We understand there are economic tests involved and all of that. We understand that fully. That is not the issue before this committee, quote unquote. The issue is what do we do to clean up the poisons in our water supply?

This is not Bob Roe speaking. This is what is happening. If it hurts 20 percent of the manufacturers a lot of environmentalists say, "So what? They shouldn't be in business." It is rough, but that is exactly the way they feel about it. Those who can afford to do the treatment will survive and those who can't will not. The committee has not actually taken that approach because we recognize that there is a very serious economic impact.

The gentleman from Wisconsin.

Mr. MOODY. The tail is wagging the dog here.

Back to Dr. Schlossel's earlier point here about recapturing the metal. What about other toxics that aren't metallic? I am not a chemist. I am sure I am using the wrong word. Aren't there toxics that wouldn't be recaptured by metal recapture? You recapture mercury and cadmium, but aren't there toxics that wouldn't be recaptured?

Dr. SCHLOSSEL. There are other materials that are on the toxic list that wouldn't be captured by this process, but they are also not typically present in plating discharges. If there are other materials present, there are other technologies that can be employed with it in order to take care of these.

For instance, there are organics that are brighteners, catalysts, what have you, that are part of the plating process now and that in order to keep their processes going, electroplaters routinely repur-

ify their working solutions to take care of the degradation problems from these things so the technology available for removing those very low-level degradation products of organics that are part and parcel of these processes is carried out.

They are typically not, however, toxic materials.

The main materials that are a danger to the environment that we are working with are the heavy metals and they are cadmium, chromium, nickel, zinc, copper. Those have the typical ones you find in plating plants that we are looking at.

Mr. MOODY. Thank you very much, Mr. Chairman.

Mr. PACKARD. One quick question, Mr. Chairman, if I may. Is the pretreatment program that you are suggesting done at the plants or is it done at the wastewater treatment plants?

Dr. SCHLOSSEL. It is not done at the wastewater treatment plants at all. The metal leaves the wastewater stream before it enters the sewer so the first step of the process is done in the electroplating plant. That is, the value which is the metal commodities are removed from the waste stream before the waste stream goes into the drain. Further reprocessing is carried out centrally so this is not something that is carried out at a POTW.

Is that the question?

Mr. PACKARD. Yes.

The cost of the centralized system is borne by Government generally, is that what you would suggest, or by the private companies?

Dr. SCHLOSSEL. The current design does not specify who is going to bear the cost of that. In our situation, I can tell you what we are looking at, if you are interested.

In the northern New Jersey/Metropolitan New York area, there are significant interests at the port authority since they have a charter for jobs in the economic health of the region to bear some part of the cost of the central facility. Other regions could adopt whatever was appropriate to that local. If I compare the capital outlay for the combined central treatment plant and the capital investment at each plating plant that is still here by approximately a factor of five and the corresponding investment in the precipitation treatment at each plant would be——

Mr. PACKARD. Each treatment plant?

Dr. SCHLOSSEL. Each precipitation plant at each plater.

Mr. ROE. Mr. Stangeland.

Mr. STANGELAND. I would suggest to Mr. Ranno—and I am sorry I didn't hear your testimony and I can't bring to mind all the testimony from the metal finishers of last week—but I would suggest you might want to look at the testimony of Mr. Hiler of the Wyco Chromium Co. representing the metal finishers and analyze that. He made a very compelling statement and something that made an impact on the committee and you might want to take a look at that and see if what he says correlates with the proposal that you are talking about in your reprocessing and your recycling program.

Mr. RANNO. I will do that. Thank you.

Mr. ROE. Well, we thank you very much for obviously very stimulating testimony. We appreciate your thought processes and we will give every consideration to your recommendations.

You can get a copy of that testimony from our committee.

Mr. RANNO. Thank you, sir

Dr. SCHLOSSEL. Thank you very much.

Mr. ROE. Our next witness for today is Mr. Frank Rutland, vice president of manufacturing of the Armira Co. and a member of the TCA Technical Committee, accompanied by Dr. Robert M. Lollar, technical director at Tanners' Council Research Laboratory at the University of Cincinnati.

TESTIMONY OF FRANK RUTLAND, VICE PRESIDENT FOR MANUFACTURING, ARMIRA CORP., AND MEMBER, TANNERS' COUNCIL OF AMERICA TECHNICAL COMMITTEE, ACCOMPANIED BY ROBERT M. LOLLAR, TECHNICAL DIRECTOR TANNERS' COUNCIL RESEARCH LABORATORY, UNIVERSITY OF CINCINNATI; AND RICHARD SCHWARTZ, COUNSEL, TANNERS' COUNCIL, ON BEHALF OF THE TANNERS' COUNCIL OF AMERICA

Mr. RUTLAND. Mr. Chairman and members of the subcommittee, I am Frank Rutland, manufacturing vice president of Armira Co., a major leather tanner. My duties include responsibility for environmental affairs. As such, I have handled environmental matters in three States; Wisconsin, Iowa, and Tennessee.

In addition, I also serve on the Tanners' Council of America's Technical Committee and I am also currently chairman of the American Leather Chemists Association Research Liaison Committee.

I am appearing here today on behalf of the Tanners' Council of America, the trade association which represents the leather tanning and finishing industry in the United States. Our industry is concentrated in New England, New York, and the Midwest, but there are also a number of tanneries in California, New Jersey, Pennsylvania, and other parts of the country—totaling approximately 200 facilities.

I am accompanied by Dr. Robert M. Lollar on my right, technical director of the Tanners' Council, and manager of the Tanners' Council research laboratory at the University of Cincinnati. He is uniquely familiar with tanning wastewater treatment problems across the United States. I am also accompanied by Mr. Richard Schwartz, a Washington attorney specializing in environmental law who has represented the Tanners' Council in environmental matters for the past 10 years.

The tanning industry converts hides into leather, a very useful commodity—principally cattle hides, but also skins from pigs, sheep, and other animals. The industry uses solutions of various chemicals dissolved in water to clean the hides, tan, color, and finish the leather.

Wastewater treatment is an expensive part of our business. Therefore, implementation of the Clean Water Act is extremely important to us.

I am going to speak to you today about the following subjects—water quality standards; the need for congressional action on the fundamentally different factors variance for pretreatment facilities; and removal credits and sludge disposal guidelines for trivalent chromium. I will also briefly mention the following matters: the need to continue funding of the construction grants program;

the need to extend the 1984 BAT deadline; and the need for 10-year NPDES permits.

First, let me turn to water quality standards.

The Tanners' Council believes that section 302 of the act should be amended so that the States, too, in addition to EPA, are required to consider the costs of achieving water quality standards when setting NPDES permit limits. We also believe that the States should be given additional latitude to revise stream use designations under certain circumstances.

Let's talk about cost/benefit considerations that should be applied before setting permits limits together than best available technology.

In our industry, the problem of excessive treatment costs seems to be focused primarily on ammonia. Ammonia is not listed as a toxic pollutant, but most States set standards for ammonia in at least some streams. Most tannery wastewater contains ammonia and we have found that tannery wastewater is exceptionally difficult to treat for ammonia. Thus, the imposition of stringent ammonia standards in NPDES permits is very costly to our industry. In fact, EPA proposed an ammonia pretreatment standard for the leather tanning industry, but withdrew it because EPA could not identify a technology which would reliably remove the tanners' ammonia at a realistic cost.

For example, the publicly owned treatment works in Johnstown/Gloversville, N.Y., where there is a concentration of the tanning industry, needs to be upgraded. The first proposal for upgrading entailed a cost of $100 million. Of that sum, approximately $40 million was to meet an extremely stringent ammonia water quality standard for the receiving creek. Tanneries are encountering similar problems with the ammonia standards in other parts of the country.

In many cases, we do not believe that tight ammonia standards can be justified on environmental grounds. Moreover, in light of the tremendous cost of meeting those standards, we believe the States should be required to determine whether the benefit of attaining the standard is worth the cost.

One way to provide a forum for these considerations would be to amend section 302 of the Clean Water Act to require the States to make the same determinations as EPA when the agency issues NPDES permits where water quality standards require greater removal than that attainable by best available technology.

Second, I want to talk about instances where we feel that inappropriate stream standards may be in order.

It is important to note that in the cases confronting the leather tanning industry, the tanners do not seek to degrade the actual quality of the receiving stream. Like others who have appeared before you this morning, we want to make clear that we are totally in favor of the Clean Water Act and the efforts of Congress and this committee to improve the act.

In each case, after the limits in the new permit are attained, receiving water quality would be improved. We are seeking reconsideration of water quality goals which may never have been attained—and quite frankly never will be. These goals may have been adopted originally without any knowledge of their cost. It

may become apparent upon further scrutiny that these goals were ill-conceived, or not worth that cost.

First, the States should be given wider latitude to revise inappropriate designated uses. For example, the Nashua River in New Hampshire is classified as a salmon stream, even though its summer temperature exceeds 85 degrees Fahrenheit, a temperature at which salmon cannot survive. Other surface waters can never be fishable or swimmable due to such factors as drought flow, depth, temperature, and the basic geology and hydrology of the region. In such cases, the States should be permitted to revise the inappropriate use designation.

Second, some streams have been receiving industrial effluent for many years and are best suited for industrial uses. In fact, the flow of some streams consists primarily of industrial effluent, so without that effluent, there would be no stream much of the time. The States should be allowed to permit continued industrial use of such streams.

Finally, I want to comment that the States should be encouraged to revise water quality criteria based on stream studies. The States must establish water quality criteria—acceptable pollutant concentration limits—for streams based upon their designated uses. Pollutant loadings are allocated to streams so the applicable water quality criteria will not be violated. States should be encouraged to consider studies of the wildlife populations of specific receiving streams to determine whether the pollutant loadings allocated to that stream are overly stringent.

EPA's general water quality criteria, which are usually adopted verbatim by the States, were never intended to be taken as irrefutably accurate for all streams throughout the United States. Unfortunately, they are usually adopted without change because it is extremely expensive to conduct a study of a particular stream to determine what levels of pollutant loadings are in fact tolerable for that body of water. If a city, a State, or an industry is willing to undertake the expense of conducting such a study, however, the results should not be ignored.

Second, I would like to turn to the fundamentally different factors variance for pretreatment. Congress should restore the fundamentally different factors variance, which was vacated by the U.S. court of appeals for the third circuit on September 20, 1983. EPA relied on the availability of this variance when it devised the pretreatment standards for the leather tanning industry.

Effluent guidelines and pretreatment standards were issued for the tanning industry in the Federal Register of November 23, 1982. With respect to chromium, EPA recognized that "constraints on the availability of interior plant space and adjacent land" could be inadequate for the model chromium treatment technology on which these pretreatment standards were based. The agency concluded:

> Therefore, the agency believes that the more appropriate approach is to grant variances from the chromium pretreatment standard based upon a specific demonstration by the indirect discharger, as provided by the general pretreatment regulation of the fundamentaly different factor of inadequate interior plant space or adjacent land.

Thus, the availability of an FDF variance was one of the assumptions on which the leather tanning pretreatment standards were based. We know today at least three tanneries in the Milwaukee area have had their FDF applications returned to them by the Milwaukee Metropolitan Sanitary District as a result of the third circuit's decision. We suspect other tanneries are similarly adversely affected.

The basis for the court's decision was that section 301(l) of the Clean Water Act forbids the granting of variances for toxic pollutants. Section 301(l) provides as follows:

"The Administrator may not modify any requirement of this section as it applies to any specific pollutant which is on the toxic pollutant list under section 307(a) of this act." Presumably this preclusion was intended to apply to the economic variance—Section 301(c)—and water quality-based variance—Section 301(g).

Now, to the fundamentally different factor variance.

The FDF variance is different. The FDF variance does nothing more than permit EPA to establish appropriate limits for a particular facility based on the same technology considerations used to set the standard. An application for a FDF variance essentially requires a detailed engineering study showing the standards achievable by that particular facility at the pretreatment cost which EPA determined to be appropriate.

Because the standard itself was based on technological achievability—rather than a finding that greater discharge would harm the POTW—it is wrong to presume that a relaxation of the standard will harm the treatment plant. If such a danger in fact exists, the application would be denied by EPA or the local treatment works could impose a stricter standard under its own authority. Of course, a local POTW can always establish stricter limits to the extent it needs to protect its operation.

Third, I would like to turn to an issue that is specific to our industry: overregulation of trivalent chromium, removal credits, and sludge disposal guidelines.

Tanneries use and discharge chromium only in the trivalent form. It is universally recognized by toxicologists, and recognized in many EPA regulations, that trivalent chromium is much less toxic than hexavalent chromium. Trivalent chromium is an essential trace nutrient for humans. It does not interfere with POTW treatment processes. Trivalent chromium in tannery sludges does not cause ground water contamination problems when placed in landfills.

Finally, trivalent chromium has been found to be safe when applied in sludges to agricultural lands. In a study performend for EPA, the Oak Ridge National Laboratory concluded that trivalent chromium should not be a limiting factor in the application of sludges to agricultural lands.

Unfortunately, chromium is listed as a "toxic pollutant" under section 307(a) of the Clean Water Act without differentiating between the hexavalent and trivalent forms. Trivalent chromium has been tarred with the same brush as hexavalent. This situation raises the danger of overregulation under at least two sections of the Clean Water Act whose impact will be felt very soon.

The first of these is in the area of removal credits. Under EPA regulations, removal credits must be applied for within 18 months of the issuance of those pretreatment standards to which the credits will be applied. For the leather tanning industry, this results in a deadline of May 23, 1984.

Removal credits are mandated by section 307(b)(1) of the Clean Water Act. In essence, they permit relaxation of a pretreatment requirement for a toxic pollutant if the receiving POTW itself removes all or part of that pollutant from the effluent.

EPA issued a pretreatment standard for chromium discharged by tanners approximately 1 year ago. The pretreatment standard is based on settling of chromium-bearing solids by the tannery in a manner very similar to that which is commonly used by a POTW. In other words, this is a duplicative treatment process. In a well-operated POTW, removal of chromium will be 90 percent or higher. Thus, the pretreatment standard for chromium is a perfect candidate for a removal credit. In fact, EPA pointed to the availability of removal credits in response to criticism that a chromium pretreatment standard was inappropriate for the leather tanning industry.

To our knowledge, no discharger has yet received a removal credit for any parameter. Although our knowledge may not be complete, we are sure that if EPA's removal credits regulation has been used at all, such use has been rare. EPA's regulations make this process extremely complex and difficult. This fact has been noted by a report of the General Accounting Office in 1982 and a report by the House Subcommittee on Oversight and Review of the Committee of Public Works and Transportation in a report dated 1980.

Because EPA's regulations have made this process cumbersome, and because application is discretionary with the POTW, we fear many POTW's may not wish to take the immense time and effort required to make such an application. Often there will be no incentive for the POTW to do so.

If this problem occurs for the tanners, it will result in duplicative treatment for chromium and significantly wasteful expenditures. Accordingly, section 307(b)(1) of the act should be amended to permit the industrial discharger to make the removal credit application after giving notice to the receiving POTW. Second, the process should be made simpler and EPA's roadblocks to obtaining removal credits should be removed.

Second in this area is the question of sludge disposal. Heretofore, all studies of which we are aware have confirmed that tannery sludges can be put in landfills or spread on agricultural land without causing harm, or even potential harm, to the environment. Tanners in many different States are conducting experiments with the application of their sludges to agricultural lands. The environmental impact of this process is being monitored to demonstrate that it can be used safely and beneficially. Tannery sludges are rich in nitrogen which is an important soil nutrient. Thus, this process may prove to be an inexpensive, environmentally sound, and agriculturally beneficial method of sludge disposal.

Regulations issued in the near future under the Clean Water Act could either help or impede this process. Under section 405 of the act, EPA is authorized to issue guidelines for the disposal of sewage

sludges. These guidelines will include the identification of concentrations of pollutants which interfere with each designated use or disposal of sludge.

We understand that the Senate is considering an amendment to section 405 of the act to require EPA to expedite the process of issuing sludge disposal guidelines under section 405. We urge you to direct EPA to avoid setting standards under section 405 which unnecessarily limit the beneficial reuse of sludges by land application. Often EPA is given wide latitude to issue overly strict regulations. Directions such as those in section 307 to provide an "ample margin of safety" without regard for the wisdom of an undue restriction could frustrate the development by the tanning industry of sludge disposal options which are both environmentally safe and economically efficient.

Now, let me turn to the funding construction grants program. Some tanneries discharge directly into navigable waters. Often these tanneries are located in rural areas or other places where there is sufficient land to accommodate the waste water treatment equipment needed to meet effluent guidelines. Most tanners, however—probably 95 percent or so—discharge to POTW's. A great many of these are operating from old plants in urban areas where they do not have the space to treat their effluent to the extent necessary to discharge directly to the navigable waters. For these tanneries, there is no option but to discharge to the local municipal treatment plant. Many of these municipal plants need to be upgraded and cannot do so without Federal funds.

Accordingly, we support continued funding of the construction grants program under title II of the Clean Water Act. Without such funding, many urban tanneries would have to cease operation. Aside from the particular effect on tanners, cessation of this program would cause severe economic dislocation in many urban areas.

Next, I want to speak on the July 1, 1984, best available technology deadline.

The Tanners' Council supports an extension of the existing deadline for installation of best available technology. The effluent guidelines for the leather tanning industry were issued on November 23, 1982, which is only approximately 1½ years prior to the July 1, 1984, deadline. Moreover, in part because of the delay in issuance of effluent guidelines, most direct-discharging tanners do not yet have their final NPDES permits which will determine the limits which they must meet.

Accordingly, we support an extension of the July 1, 1984, deadline to 3 years from the date the NPDES permit is issued or at a minimum, July 1, 1988. This extension should give the leather tanning industry adequate time to install best available technology to achieve the limitations in the next round of NPDES permits.

Finally, let me touch on the point of permit duration. The issuance of an NPDES permit is a major undertaking. It involves extensive sampling of the industry's effluent, an evaluation of the water quality standards which should apply to the receiving stream, the suitability of variances for certain limitations, and numerous other terms and conditions which apply to any NPDES permit.

Second, the installation of treatment technology is a major expense for a leather tannery. No tanner can endure such a major capital expense every 5 years.

Accordingly, the maximum term of an NPDES permit should be 10 years.

Thank you very much for listening to our comments on the Clean Water Act. Dr. Lollar, Mr. Schwartz and I will be happy to answer any questions you may have.

Mr. ROE. We thank you, Mr. Rutland, for your in-depth testimony.

Mr. STANGELAND. I have one question, Mr. Chairman. It was suggested, and you suggested, the fundamentally different factor variances, but it was suggested yesterday that these variances are not needed because any problems that exist could be addressed by EPA through the creation of new industrial subcategories and accompanying regulations. How would you respond to that argument?

Mr. SCHWARTZ. As a practical matter, that would put an incredible burden on EPA. In other words, they have just gone through an incredibly long rulemaking proceeding for the leather tanning insustry to issue effluent guidelines and pretreatment standards. The chance of them going back to reopen that to create new subcategories, I think, is minimal. The administrative burden would be such that they just wouldn't do it.

Mr. ROE. The gentleman from Arizona.

Mr. MCNULTY. No questions.

Mr. ROE. Thank you very much. Your statement is very comprehensive.

Just one thing. What do you see about those credits? You spoke to the issue of the removal credits and it is very interesting because that has been talked about here as being sort of a panacea, but to your knowledge there has been none given at all that you are aware of?

Mr. RUTLAND. No, we are not aware of any. Obviously we don't know every situation in the country.

Dr. LOLLAR. There are none in the tanning industry.

Mr. ROE. So it is something that is floating around there?

Dr. LOLLAR. If the EPA's proposed removal credit which has been set aside now in the Third Circuit Court were to become effective, I have reason to believe that some removal credits would be approved. That is part of the simplification that we think ought to be accomplished.

Mr. SCHWARTZ. I think the existing removal credit provision has a lot of problems. I think, for example, one of the loudest opponents of the existing provision is the sanitary district of the city of Chicago. They basically say the program is unworkable, and they won't even try to get removal credits for anybody.

If you have that many industrial discharges being held hostage to what is considered to be an unworkable regulation, I think they hope something will be done about it.

Mr. ROE. Do you think it is unworkable?

Mr. SCHWARTZ. It is hard to say. It hasn't worked yet. What happened is EPA, when Congress wrote in a removal credit provision that said if there is removal by the POTW you give credit for it, but when EPA wrote the regulations, they held a lot of other

things hostage to granting removal credits. They said you can grant removal credits, but you have got to have a local pretreatment program and you have got to have a program to correct your combined sewer overflow problems, and you have to have a year's worth of data on influent and effluent removals.

Then when they said the credit you are going to get originally was going to be based on the average of the lowest 50 percent of the removals, they basically did everything they could to minimize the credit and make it very difficult to get it.

What happened was that in the pretreatment case, the third circuit approved the existing program to the extent it said it was not arbitrary and capricious, et cetera. But up until now, nobody has gotten one, and I think the idea that it is a panacea is probably the last thing that you could reasonably say about it.

Whether it will work depends on a couple of things. One is that on EPA's regulatory calendar they still have on the agenda modification of the existing removal credit provision and we don't know how that is going to come out, and I think our fear is that the third circuit, having said from a judicial standpoint they can't find any legal objection with what was done before, there is going to be very little incentive now for EPA to deal with the practical problems that everybody has been screaming about.

Hopefully we will know in January, but even then the situation is that the deadline for the tanning industry, no matter what EPA does, is May 23, and it is going to be very, very difficult for anybody even to get a proper application in by May 23 and changing the program in January, even if it happened then, might be too late for the leather tanning industry.

Mr. ROE. What did you see the delay to be caused by?

Mr. SCHWARTZ. The delay by EPA; I know what it is caused by. Their proposal was to simplify it by having a national removal credit program. And what they did was they had something called the 40 POTW fate study where they took 40 POTW's which they considered to be well managed and well operated and took the average removal for various toxic pollutants and said, just to make this process workable, we will give you, instead of having to give us all this data, we will give you that average removal automatically. Automatically is probably oversimplifying, but that would be a number that you could get without jumping through quite as many hoops as you would otherwise have to.

The problem is that they found out the study was lousy basically, and so they didn't know what to do. And for the tanning industry the study was doubly lousy because it was placed on POTW's that didn't have tanneries going into it and tannery chromium is very easy to remove because it is bound up with suspended solids.

So in any POTW, generally the first process that it has is a settling pond which settles out suspended solids for tannery chromium; when it does that it takes out the chromium. So as we said in the testimony, a POTW that is well operated is going to remove about 90 percent of the tannery chromium.

Well, when they did the study, because they didn't use POTW's that had tanneries going into them, they were doing influent/effluent comparisons for percent removal, and they might have had many, in fact they did have many POTW's where there is very

little chromium going in in the first place and very little came out, but the percent removal, of course, was very, very low.

So, when they averaged that all in, percent removal for chromium was much lower than you would get for tannery chromium, and so that is a particular problem for the tanning industry, but there were other defects in the study, the details of which I am not aware that made EPA stop, and they just didn't know what to do, and I think that caused the delay up until now.

Mr. ROE. How do you expect to be in compliance by May of next year? Do you want to sit here?

Mr. SCHWARTZ. Well, certainly. Could I have a vote?

Mr. ROE. That doesn't go with the offer.

Mr. SCHWARTZ. The May 23 deadline is to make the application. The final compliance deadline is November 25, 1985.

Mr. ROE. By the same token, in order to make an intelligent and well-rounded and productive application, you have got to have some facts to make it on.

Mr. SCHWARTZ. That is right, and that is a problem.

Mr. ROE. Do you feel comfortable enough without getting into hot water to answer the following question? Do you feel that EPA has been responsive to the needs of the tanning industry in establishing guidelines and criteria that are practical and can be met in a reasonable way?

Mr. SCHWARTZ. Well, we are in litigation with them, so the answer has to be limited. I think in some respects yes, and in some respects, no. I think, to be extremely candid, the methodology which they used to set the standard, the way they gathered the data, and the quality of data was terrible. Every once in a while they came out with the right answer, even though the way they gathered the data and the reliability was actually awful.

Mr. ROE. I am really leading to a serious question. We have 3 more days of this to go. When we listen to the testimony time and time and time again from the different categories of industry that testify, the platers, the tanners, whatever, with all of the deadlines involved, they have not been provided with the information that they need for the standards or criteria.

Mr. SCHWARTZ. That is right.

Mr. ROE. So two proposals are emerging as we have seen in the testimony. One is coming back and saying, "All right, instead of waiting until all of those criteria are promulgated then, as a set of rules and regulations are promulgated for one area, make the decision and let the 3 years starting at that point." I think that is what industry is saying.

Mr. SCHWARTZ. That is particularly a pretreatment problem. What they are saying is as the pretreatment standards dribble out, if they have discharges in three different categories, the clock has started ticking after they issue the first one, and the number keeps getting revised every time a new pretreatment regulation comes out in a different category.

Mr. ROE. When Congress said the basic rules and the basic programs since 1972, they assumed, and it sounds like I am coming down on EPA and I probably am, they were supposed to do certain things in a given period of time and if they did those things in a given period of time, the industry had that data available to them

and they could start making decisions or midcourse corrections, or whatever the case may be.

But if it has been 10 years and you still don't have the information, we can't really get all worked up about industry not complying if they haven't been given the information to base their decisions on in the first place. Isn't that reasonable?

Mr. SCHWARTZ. Yes. That is what has happened, and I think right now there are a lot of very tricky questions, particularly for pretreaters, because they were supposed to file a baseline report and the way the rules read, you have got to file the baseline report and commit to construction even before you know whether you are going to get a removal credit which is a very, very serious thing, and this has happened to the tanners.

Mr. ROE. Well, should we scrap the removal credit item? It is not working anyway.

Mr. SCHWARTZ. We would love to have it work, and there are tanners who are applying and hope that it will work out and they will get one. But the way the regulations are written, they are supposed to, and EPA wants those to be applied literally because we have raised this with EPA that the way the baseline report works, you are supposed to start on a construction schedule immediately and build as soon as possible after the regulations come out. The maximum intervals are supposed to be 90 days, and there is no provision for waiting to find out whether you are going to get a removal credit.

So the problem is if you take the regulations literally, even if you had a removal credit application in, you would have to start building before you found out what the answer was, and I am afraid that industries have gotten around it by fudging it. Really is a ridiculous result, and people live with it the way they can, but unfortunately from a practical standpoint, one of the acceptable answers is not provided in the regulations because they clearly say you have got to start building today and without regard to removal credit applications even if you know that the POTW is removing, let's say, 90 percent of your chromium for tanners.

And this applies to the steel industry equally, by the way. They have got roughly the same timing problem. Even though you know the POTW is removing it, even if you could walk up and show boatloads of data showing there was removal, if you followed EPA's pretreatment regulation literally the way they wish to have them applied, you still have to start building pretreatment facilities as if you were not getting the removal credit.

Mr. ROE. No further questions. I want to thank you very, very much for your testimony.

Our next witnesses today are the American Petroleum Institute, represented by Mr. Ken Blower from Standard Oil of Ohio, and Mr. William Manning, Louisiana Land & Exploration Co.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

Statement of
KENNETH E. BLOWER, THE STANDARD OIL COMPANY OF OHIO

on behalf of the
AMERICAN PETROLEUM INSTITUTE

before the
HOUSE SUBCOMMITTEE ON WATER RESOURCES
PUBLIC WORKS AND TRANSPORTATION COMMITTEE
U.S. HOUSE OF REPRESENTATIVES

Hearing on
CLEAN WATER ACT AMENDMENTS OF 1983

November 10, 1983

EXECUTIVE SUMMARY

The American Petroleum Institute supports amendments to the Clean Water Act which will eliminate costly delays and unnecessary expenditures and make the act more workable and flexible. Our statement discusses provisions of H.R. 3282 and S. 431 as well as certain provisions of the Clean Water Act that the Senate and House bills do not address.

Compliance Dates

API believes that the July 1, 1984 deadline for compliance with Best Available Technology and Best Conventional Technology effluent guidelines should be deleted and that compliance should be required 36 months from the date guidelines are established.

H.R. 3282 uses this approach for toxic pollutants but requires a deadline of July 1987 for conventional pollutants. The Senate bill sets a fixed deadline of July 1987 or earlier for all pollutants.

Experience has shown that fixed dates do not provide a workable approach -- the result, too often, is the need for another extension of the deadline.

Water Quality Standards

Section 6 of H.R. 3282 and comparable provisions of S. 431 which address water body use designations and protection of high quality waters are not necessary and should be dropped. The provisions were introduced in response to concerns of the environmental community and some members of Congress with certain aspects of EPA's proposed water quality standards regulations. However, EPA has since revised those portions of the regulations, and according to Senators Stafford, Chaffee, Randolph and Mitchell, "the final regulations reflect the requirements and policies of the Clean Water Act" and "the provisions of S. 431 governing the setting of standards and maintenance of high quality waters appear to be no longer necessary."

In addition, both bills require states to adopt numerical water quality criteria for toxic pollutants when water quality is impaired. The Association of State and Interstate Water Pollution Control Administrators have called the requirement to list toxic substances and develop national criteria an "unrealistically simple solution" because the list of pollutants could be expanded indefinitely. API opposes this provision since it would arbitrarily preempt sincere efforts underway to evaluate the proper role of biological versus numerical criteria for protection of aquatic life.

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Control of Toxics After BAT Attainment

Section 7 of H.R. 3282 and comparable provisions in S. 431 which address additional controls after Best Available Technology (BAT) has been achieved are unnecessary and should be deleted. The Clean Water Act already provides a mechanism for achieving water quality standards where BAT controls for toxic pollutants would not adequately protect water quality.

More important, the proposed amendments would prove ineffective for these reasons. First, the amendments would provide an inflexible strategy with unrealistic and rigid time tables. Second, the proposals rely solely on the control of industrial and municipal discharges and do not address the pollution caused by non-point sources.

Finally, the House proposal would transfer the states' traditional authority to develop water quality-based effluent limitations to the EPA administrator. API believes the states, with appropriate oversight and guidance from EPA, are better equipped to make the necessary decisions regarding the most cost-effective and rational strategies for achieving water quality. In fact, the states, EPA and industry are currently engaged in earnest efforts to create an effective and workable approach to control toxic pollutants.

The National Pollutant Discharge Elimination System (NPDES)

All facilities must obtain an NPDES permit before discharging pollutants into the nation's waters. However, the act requires EPA and the states to renew permits too frequently and to issue permits for sources which are insignificant contributors to water pollution. The Senate bill S. 431 has addressed these concerns with provisions that would extend the maximum lifetime of a permit to 10 years and exclude certain categories of stormwater runoff from the permit program. API supports the intent of these amendments but believes that some modifications are needed to make the amendments more workable.

Other Major Clean Water Act Issues

API believes that three other troublesome aspects of the Clean Water Act, not addressed by either the House or Senate bills, need to be considered.

The Treatment of New Sources

Two aspects of the act's requirements for new facilities are inefficient and costly: the definition of a new source and the requirement for preparation of an Environmental Impact Statement (EIS) when an NPDES permit is obtained.

A facility is defined as a new source if its construction is begun after an applicable performance standard is proposed.

Although final standards are to be promulgated within 120 days, in practice, EPA has not met this requirement. Thus, industry must design new plants to meet proposed effluent standards which EPA often changes as a result of public comments. Changing the definition of a new source to the date an applicable new performance standard is final rather than the date it is proposed would eliminate uncertainty and unnecessary expenditures.

The EIS requirement is intended to ensure that federal agencies adequately address environmental considerations. For NPDES permits, this costly requirement is redundant because environmental concerns already play a paramount role in EPA's decisions.

Application of Ocean Discharge Criteria

The "Ocean Discharge Criteria" requirements of Section 403 of the act duplicate other important environmental controls that already protect the ocean from unreasonable degradation. For example, several steps are required for oil and gas drilling on the Outer Continental Shelf. These include: an Environmental Impact Statement assessing the environmental effects of the proposed activity; an NPDES permit which imposes technology-based treatment requirements; a site-specific plan of exploration and an environmental report; a production plan and another environmental report; and, for a new producing area, another Environmental Impact Statement.

Section 403 should be modified to eliminate redundant environmental impact assessments.

Best Available Technology Requirements

In order to avoid "treatment for treatment's sake," the act's requirements for more stringent technology should be re-evaluated. For many industries, existing technology is effectively removing toxic pollutants present in raw waste waters. In these cases, more stringent industry-wide requirements should not be necessary. Further, the concentration of a pollutant which will produce a toxic effect on aquatic life in the receiving water varies from stream to stream and pollutant to pollutant. Therefore, the act should allow case-by-case modification of national guidelines in those limited circumstances where a discharger can show that the effluent from its facility does not violate water quality or adversely impact the receiving waters.

Testimony presented before the House Subcommittee on Water Resources, Washington, D.C., November 10, 1983

I am Kenneth E. Blower, Manager of Environmental Affairs for The Standard Oil Company of Ohio. I am representing the American Petroleum Institute (API) as chairman of API's Water Program Committee.

The Institute welcomes the opportunity to present its views on amendments to the Clean Water Act.

Our statement addresses provisions of H.R. 3282 and S. 431 relating to:

- Compliance Dates
- Water Quality Standards
- Control of Toxics After Attainment of Best Available Technology
- The National Pollutant Discharge Elimination System Permit Program

In addition, our statement dicusses provisions in the Clean Water Act that the Senate and House bills do not address. We urge you to consider improvements needed in these areas:

- Treatment of New Sources
- Ocean Discharge Criteria
- Best Available Technology Requirements

I. Compliance Dates

API supports the current congressional effort to extend Best Available Technology (BAT) and Best Conventional Technology (BCT) compliance deadlines. But we are concerned that the use of fixed dates in both the House and Senate bills will serve to continue the problems encountered with past and current deadlines. We believe that fixed deadlines should not be imposed and that compliance should be required 36 months from the dates BAT and BCT effluent guidelines are established.

H.R. 3282 uses this approach for toxic and non-conventional pollutants, requiring compliance three years after BAT effluent limitations are established for these pollutants. However, a fixed compliance date of July 1987 is required for conventional pollutants. The Senate bill requires compliance with effluent limitations for all pollutants by July 1987 or earlier.

The fixed dates in both the House and Senate bills will create problems for many industrial facilities. It can take at least three years from the time EPA promulgates effluent limitations for industry to design, purchase and install required technology. Thus, in order to comply with a July 1987 deadline, all limitations would need to be promulgated by July 1984.

However, EPA will not have enough time to promulgate limitations for many industries by that date. BAT limitations for some industries and BCT regulations for most industries have not been promulgated. Moreover, promulgation schedules have historically been subject to substantial slippage.

For example, EPA is developing BAT and BCT guidelines for the oil and gas extraction segment of the petroleum industry but has not set the date when those guidelines will be issued. Because this category is not covered by the strict schedule of the Toxics Settlement Agreement, the final guidelines will most likely be issued after July 1984. Therefore, depending on the exact requirements of the BAT guidelines, this segment of the industry may not have enough time to comply with the dates in H.R. 3282 and S. 431.

Continuing to schedule fixed dates for compliance only ensures that some industries will run into trouble and that another extension of the deadline will be necessary in the future.

II. Water Quality Standards

Both H.R. 3282 and S. 431 address water body use designations, protection of high quality waters, and the imposition of numerical water quality criteria for toxic pollutants.

A. Use Designation and Protection of High Quality Waters

Both bills would require any water quality standards revised after January 1, 1983, to maintain the designated uses in effect on that date. Less restrictive uses may be set if the existing use is not attainable because of natural background or irretrievable man-induced conditions or if controls beyond the application of BAT would result in substantial and widespread adverse economic and social impact.

Both bills would also require the states to upgrade a water body's designated use if water quality exceeds the existing use and to maintain and protect water quality which exceeds levels needed to support fish, shellfish, wildlife and recreation.

These provisions are not necessary and should be dropped. Introduction of these amendments was prompted by EPA's October 1982 proposal to revise its water quality standards regulations. Certain aspects of that proposal created concern among members of the environmental community and among some members of Congress. EPA has now changed those aspects of concern and according to Senators Stafford, Chaffee, Randolph and Mitchell "the final regulation reflects the requirements and policies of the Clean Water Act. ..." Moreover, congressional attempts to codify these complex regulations would eliminate much of the needed flexibility still contained in the regulations.

B. Role of Toxics in Use Attainment

The House bill would require the states to adopt numerical criteria for toxic pollutants when revising water quality standards. Numerical criteria would be required for each toxic pollutant which could interfere with the attainment or maintenance of the water quality needed to support designated uses. The Senate provision similarly requires the adoption of numerical criteria for toxic pollutants.

API opposes this provision since it would arbitrarily preempt sincere efforts now underway to evaluate the use of biological versus numerical criteria for protection of aquatic life..

The provision would mandate an enormously complex and expensive scheme for dealing with toxic pollutants with little certainty as to its feasibility or effectiveness. The major voice of the state regulatory community, the Association of State and Interstate Water Pollution Control Administrators, for example, has questioned the numerical criteria approach for toxic pollutants. They have called the requirement to list toxic substances and prepare national criteria an "unrealistically simple solution." They point out that the list of pollutants is expected to expand indefinitely and that this type of scheme would involve a massive new nationwide monitoring program.

EPA and the scientific and technical community are still grappling with the proper role of biological versus numerical criteria for toxic pollutants. A statutory provision at this time could significantly set back progress being made.

III. Control of Toxics After BAT Attainment.

The provisions in both the House and Senate bills mandate an inflexible strategy with unrealistic time tables for the imposition of water quality-based effluent limitations for discharges to waters which are not expected to achieve fishable/swimmable quality -- even after BAT controls on toxic pollutants are in place.

API believes that these provisions are counterproductive and unnecessary and recommends that they be deleted. The act already provides a mechanism for achieving water quality standards where BAT controls are found to be inadequate. Relying on existing authority under the act, EPA has been working diligently to refine its water quality programs to address this problem and to provide guidance and assistance to the states.

EPA has recently developed a draft "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants" (9/8/83). The policy addresses the need for additional controls on toxics once BAT has been implemented. Briefly, EPA proposes an integrated strategy consisting of both biological and chemical methods. This means that, in addition to enforcing specific numerical criteria, EPA and the states will use biological techniques and available data on chemical effects to assess toxicity -- with the goal of "no toxic materials in toxic amounts."

The Clean Water Act currently gives EPA authority to proceed. For instance, NPDES permit applicants can be -- and are being -- required to provide chemical and biological data. EPA and the states may call for aquatic toxicity testing after the required technology has been installed and may reopen the permit to incorporate additional limitations if needed to correct receiving water problems.

In the past, Congress has restrained from modifying statutory programs until EPA, the scientific community and the public have had an opportunity to develop workable programs. As the House Subcommittee on Oversight and Review of the Committee on Public Works and Transportation observed in its Report on Implementation of the Clean Water Act (December 1980, p. 61):

> The history of the toxic-control program inaugurated in 1972 is a classic case of demanding too much, too soon and winding up with too little, too late. ... If the question is [whether we should] demand less than what

> our known capabilities will produce, the answer is a resounding no. ... And if the question is whether our ultimate water quality goals should be lower, the answer is the same. However, if the question is interpreted as focusing our demands on objectives capable of achievement, then the answer is yes. ... The history of this program shows that the asking-for-everything-at-once approach has produced enough confusion and inefficiency to have all too often slowed, rather than accelerated, the achievement of our goals. Greater demands produce greater results only up to a point.

In light of the tangible progress that is being made to address toxic pollutants, Congress shoud continue to exercise restraint for just a bit longer to allow a fair appraisal of current efforts.

IV. The National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) Permit Program needs to be made more manageable by extending the maximum lifetime of permits to 10 years and excluding insignificant discharges from the permit program. API believes that S. 431's provisions addressing these problems need to be somewhat modified.

A. Extending the Maximum Lifetime of NPDES Permits

API supports the Senate's effort to extend the maximum lifetime of NPDES permits. However, one aspect of S. 431's Section 10 could largely eliminate the benefits to EPA, the states and industry of a 10-year permit term -- the requirement that existing permits be promptly modified whenever new or revised requirements that are more stringent than any in the permit are established under numerous other sections of the act.

The Clean Water Act already gives EPA the authority to reopen permits. Section 402(b)(1)(C) of the act allows EPA to modify or terminate a permit for cause. EPA has exercised this authority by requiring that permits be re-opened if more stringent requirements for toxics are established under Section 307 of the act. S. 431's provision would require permits to be reopened if more stringent requirements are established under Section 307 as well as sections 301, 302, 303, 304, 306, 403 and 405 of the act.

This provision would not allow EPA or the states to consider the significance of a more stringent requirement before deciding whether a permit should be reopened. Thus, for example, regulations involving toxic, conventional and non-conventional pollutants would be treated the same and would require in all cases that the permit be reopened. EPA and the state agencies would be swamped by this task and industry would lose any certainty of the duration of permit requirements. Thus the potential benefits of a ten-year permit lifetime would be lost.

API recommends that Section 402(b)(1)(B) of the Clean Water Act be amended to read as follows (changes are underscored):

> "(B) except as provided under paragraph (C) of this subsection, are for fixed terms not exceeding ten years, unless a permit includes a waiver or modification of any otherwise applicable requirement pursuant to Sections 301(c), (g), (h) and (m) of this Act, in which case such permit shall be for a fixed term not exceeding five years;".

Where a facility is granted an economic or water quality based waiver under the act, the permit lifetime would still be limited to five years. However, other minor modifications would not prevent a facility from obtaining a ten year permit.

The amendment recommended by API would allow a 10-year permit term that corrects the problems encountered with the five-year term. The existing five-year maximum lifespan for NPDES permits has imposed unnecessary burdens and costs on industry, EPA and the states alike. It may take as long as a year for a final permit to be issued. Up to three years may be required to install treatment technology necessary to comply with permit conditions. This scenario leaves little time to obtain data on effluents before the permit has to be renewed.

It has been estimated that about 65,000 permits have been issued since 1972.[1] EPA and the states are now facing an increasing backlog of permits which have expired and must be reissued. This problem could be alleviated in the future by amending the act to provide permit authorities the flexibility to issue permits for terms up to 10 years.

Moreover, the 10-year lifetime would make the NPDES permit program more consistent with permit programs enforcing other environmental laws. Congress has not placed restrictions on the duration of permit terms under the Resource Conservation and Recovery Act and the Clean Air Act.

B. Excluding Insignificant Discharges

S. 431's Section 13 recognizes the need to exempt from the NPDES permit program discharges that have little or no adverse impact on water quality. The provision exempts discharges of stormwater runoff from mining operations and oil or gas exploration, production, processing, or treatment operations that are not contaminated with process wastes, overburden, raw

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[1] Deputy Administrator, Dr. John Hernandez, Jr., U.S. Environmental Protection Agency, Testimony before the Subcommittee on Environmental Pollution, Senate Committee on Environment and Public Works, February 5, 1982.

materials, toxic pollutants, hazardous substances in excess of reportable quantities, or oil or grease from the Clean Water Act's requirement to obtain an NPDES permit.

However, the proposed language fails to explain what constitutes "contaminated by oil or grease." API recommends that line 17 of Section 13 be changed to read "or oil or grease in excess of reportable quantities." This is the phrasing used to define "contamination by hazardous substances."

In addition to the specific exemption provided by Section 13 of S.431, Congress should consider amending the act to provide authority for EPA to exempt other environmentally insignificant discharges from the NPDES permit program. That is, EPA should be allowed (a) to exempt appropriate discharges from categories of point sources and (b) to exempt specific point source discharges on a case-by-case basis.

A Clean Water Act amendment excluding insignificant discharges from the NPDES permit program will help address a problem that EPA, state agencies and industry have all acknowledged. Thousands of insignificant discharges are currently regulated under the NPDES permit program. Faced with the enormous task of renewing permits for major point sources, permit issuing authorities probably will not be able to act on most minor discharge permit applications during the next several years.

During the first round of NPDES permit issuances under the Federal Water Pollution Control Act of 1972, EPA attempted to exclude many stormwater discharges containing insignificant quantities of pollutants from NPDES permit requirements. This exclusion was challenged by the Natural Resources Defense Council (NRDC) which claimed that EPA had no authority under the act to exclude any point source discharges of pollutants.[2] The court agreed with NRDC, and, as a result, EPA now believes that it has little or no discretion in its application of the permit program. Based on a survey of 39 states, the Association of State and Interstate Water Pollution Control Administrators in May 1979 reported that a total of 5,808 major and 36,090 minor NPDES discharge permits had been issued to both industrial and municipal dischargers. The report stated: "About 51 percent of all permits issued ... involved relatively insignificant facilities with respect to point source pollution concerns."[3] In spite of EPA's efforts, thousands of permit applications (some submitted as long ago as 1972) for small sources are still pending.

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2 NRDC v. Train, 396 F.Supp 1393 (D.D.C. 1975), aff'd. NRDC v. Costle, 568 F.2d 1369 (D.C. Cir. 1977).

By excluding insignificant discharges from NPDES permit requirements, both industry and government will be able to better focus on eliminating major sources of pollution from the nation's waters.

V. OTHER CLEAN WATER ACT ISSUES

The American Petroleum Institute believes that the following aspects of the Clean Water Act need to be modified to eliminate costly delays and unnecessary expenditures of limited resources.

- The Treatment of New Sources
- Application of Ocean Discharge Criteria
- BAT Requirements

A. The Treatment of New Sources

API recommends that (1) the definition of a new source be based on the date an applicable new performance standard is promulgated, rather than on the date it is proposed; and (2) NPDES permits for new sources be exempted from review under the National Environmental Policy Act and its associated requirement for preparation of an Environmental Impact Statement (Sections 306 and 511).

1. Definition of a New Source. The Clean Water Act defines a new source as any facility whose construction is begun after the proposal of an applicable new source performance standard. Therefore, any facility meeting this definition must design and construct pollution control technology to comply with the proposed standard.

This situation creates more than just uncertainty for industry. Considerable resources can be expended in designing facilities to comply with proposed standards. Yet substantial changes in the performance standard often occur between proposal and final promulgation. Although EPA is required by law to promulgate new source performance standards within 120 days of their proposal, delays of months and even years are not uncommon. Thus, industry is required to design new plants to meet proposed standards which EPA may later change.

For example, new source performance standards for the Petroleum Refining Category were proposed on December 21, 1979. The standard required zero discharge of process water. On October 18, 1982 -- almost three years later -- final standards

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3 Association of State and Interstate Water Pollution Control Administrators, "Recommendation for an Improved National Water Quality Program," Washington, D.C., 1979.

for new source refineries were promulgated. EPA substantially modified the zero-discharge requirement because, as EPA noted, it would "generate significant adverse non-water quality environmental impacts . . . with only marginal additional water pollution reduction benefits."[4]

2. NEPA requirement for New Sources. Under Section 511 of the Clean Water Act, issuance of an NPDES permit for a new source is subject to the National Environmental Policy Act (NEPA) and can require the preparation of an Environmental Impact Statement (EIS). This EIS requirement is time-consuming, costly and redundant.

The EIS requirement is intended to ensure that federal agencies address environmental considerations when evaluating a proposed action. However, with EPA deciding on new source permits, environmental concerns are paramount. Moreover, EPA's permit issuing process for new sources provides opportunity for public comment on any potential environmental consequences.

Exempting new source permits from the EIS requirement of NEPA would make the Clean Water Act consistent with other environmental statutes. The Clean Air Act, the Safe Drinking Water Act and the Resource Conservation and Recovery Act are already specifically exempt from EIS requirements.

B. Application of Ocean Discharge Criteria

API recommends that the Ocean Discharge Criteria provisions (Sec. 403) be modified to:

1. Specify that permit writers can assume that ocean discharges cause no unreasonable degradation of ocean waters if the discharges comply with NPDES permit effluent limitations and conditions.

2. Specify that a separate Ocean Discharge Criteria Evaluation is not required in an area for which an Environmental Impact Statement or similar analysis has been prepared by the Department of the Interior or a state before a lease sale in the area.

3. Specify that an NPDES permit should not be denied under Section 403 of the Clean Water Act unless EPA determines that the discharge would cause unreasonable degradation of the marine environment.

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4 "Petroleum Refining Point Source Category Effluent Limitations Guidelines, Pretreatment Standards and New Source Performance Standards." Federal Register, October 15, 1982, Vol. 31, No. 201, p. 46438.

The ocean discharge requirements were originally inserted in the act because Congress was concerned that the technology-based controls mandated by the act would not adequately protect ocean waters. However, these requirements duplicate both the NPDES permit program and other environmental controls under the offshore leasing program that already protect the ocean.

Discharges into the ocean of drilling fluids, produced waters and other minor effluents associated with the exploration and production of oil or gas are regulated under the NPDES permit program of the Clean Water Act. In addition to the NPDES requirements, EPA has interpreted the Ocean Discharge Criteria provisions to require a separate, detailed environmental assessment. Companies must supply "sufficient information" in this assessment for a permit writer to determine that a proposed discharge will not degrade ocean waters.

The Ocean Discharge Criteria requirement duplicates the NPDES permit program and other important environmental controls that already protect the ocean from unreasonable degradation. First, at the time of every offshore lease sale, state and federal laws require a thorough environmental analysis of the area to be leased. For the Outer Continental Shelf, this means the preparation of a comprehensive Environmental Impact Statement. Next, all offshore operations must meet the strict requirements of the NPDES permit program before discharges are authorized. Before offshore drilling operations can begin, the company must prepare and have approved by the Department of the Interior a site-specific plan of exploration and an environmental report. Before production can begin, the company must prepare a production plan and another environmental report. And, for a new producing area, the Department of the Interior must prepare another Environmental Impact Statement.

Experience under the act has shown that the ocean is sufficiently protected by these controls. The petroleum industry has demonstrated through numerous studies and reports that typical effluents from exploration and production operations disperse rapidly and have an insignificant effect on marine ecosystems.

The Ocean Discharge Criteria requirement is, in effect, an additional and duplicative environmental study. The requirement for "sufficient information" is open-ended and subject to EPA's interpretation. EPA has required companies to prepare assessments that approach the length and complexity of an Environmental Impact Statement and that duplicate studies already completed. These additional assessments are required even though the act generally exempts the NPDES permit process from the requirement to prepare an Environmental Impact Statement. The result has been substantial delay and expenses for offshore oil and gas exploration without adding appreciably to existing information or improving water quality.

For example, by early 1983, EPA had issued no general NPDES permits for 14 separate scheduled lease sales in Alaskan waters, despite the agency's announced objective a year and a half before to do so. Beaufort Sea and Norton Basin sales had already been held, and the lessees were attempting to make firm plans and commitments to explore their leases. Without NPDES permits in hand, however, it is generally not prudent to commit to an expensive drilling rig or drilling program.

In short, the ocean discharge requirements in the Clean Water Act are often both expensive and unnecessary. They can block efficient and timely permit issuance, and they do not significantly improve water quality. As a result, exploration and development of OCS resources can be delayed.

C. Best Available Technology Requirements

API recommends that the Clean Water Act's effluent guidelines (Sections 301 and 304) be modified:

1. To designate Best Available Technology (BAT) as equivalent to Best Practicable Technology (BPT) for those industries where BPT is adequately controlling the discharge of toxic pollutants.

2. To allow modifications of BAT requirements in those limited cases where a discharger can demonstrate that the effluent from its facility does not violate water quality standards or adversely impact the receiving waters.

1. Designating BAT Equivalent to BPT. Greater flexibility is needed in assessing BAT requirements for toxic pollutants in order to recognize the substantial achievements industry has made to date and to avoid "treatment for treatment's sake."

The act's current BAT provisions could be interpreted to require the installation of controls more stringent than BPT in all cases, irrespective of cost effectiveness and the substantial achievements in removing toxic pollutants. For many categories and classes of point sources, BPT is effectively removing toxic pollutants present in raw wastewaters of industrial discharges.

For example, analytical data obtained by both EPA and industry on petroleum refineries indicate that only a limited number of toxic pollutants are present in refinery raw wastewaters. In fact, only 11 compounds were found having average concentrations greater than 100 parts-per-billion in the raw wastewaters during an extended study at two refineries in the Orleans area.[5] These [illegible] compounds were either not [illegible] or were present at very low concentrations in the final effluents of the refineries. In most cases, greater than 95 percent removal of individual toxic pollutants was found in this and other studies.

These data clearly confirm this statement from the December 1980 report by the House Subcommittee on Oversight and Review of the Committee on Public Works and Transportation:

"... it is now known that basic biological treatment technologies do in fact remove considerable quantities of the toxic (priority) and other pollutants, and in many instances either reduce or eliminate the threat of both acute and chronic toxicity to the aquatic environment." (emphasis added).[7]

Clearly, the development and installation of more stringent technology for industries where BPT adequately controls toxic pollutants is an unnecessary drain on limited time and resources and benefits neither the economy nor the environment.

2. Allowing Case-by-Case Modifications of BAT Limitations Where Appropriate. The 1977 amendments to the act provided for waivers, based on economic and water quality considerations, for BAT requirements and nonconventional pollutants, but not for toxic pollutants.

However, in limited cases, technology designated as BAT for toxic pollutants may provide significantly more stringent control than is needed to protect receiving waters. Industry-wide BAT limitations fail to recognize that the toxicity of pollutants varies greatly, depending on the characteristics of the pollutant itself and the physical/chemical characteristics of the receiving water. That is, the concentration of a pollutant which will produce a toxic effect on aquatic life in the receiving water varies from stream to stream and from pollutant to pollutant.

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5 API Publication 4346, "Refinery Wastewater Priority Pollutant Study -- Sample Analysis and Evaluation of Data," December 1981.

6 API Publication 4296, "Analysis of Refinery Wastewaters for the EPA Priority Pollutants," May 1978.

7 Subcommittee on Oversight and Review, Committee on Public Works and Transportation, Implementation of the Federal Water Pollution Control Act, U.S. House of Representatives, 96th Congress, 2d session, December 1980, p. 58.

Statement Summary of

WILLIAM MANNING, LOUISIANA LAND AND EXPLORATION COMPANY

on behalf of the

AMERICAN PETROLEUM INSTITUTE
WESTERN OIL AND GAS ASSOCIATION
ALASKA OIL AND GAS ASSOCIATION
MID-CONTINENT OIL AND GAS ASSOCIATION
and
WETLANDS ENERGY PRODUCTION ASSOCIATION

before the

HOUSE SUBCOMMITTEE ON WATER RESOURCES

of the

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

November 10, 1983

Regarding Legislative Amendments to Section 404 of the Clean Water Act

SUMMARY

The American Petroleum Institute, Western Oil and Gas Assocation, Alaska Oil and Gas Association, Mid-Continent Oil and Gas Association, and the Wetlands Energy Production Association appreciate this opportunity to comment on legislative reform to Section 404 of the Clean Water Act. The petroleum industry is active in various types of permitting activities under Section 404 in order to explore and, hopefully, develop vitally needed energy resources. Such activites include constructing drilling pads, access roads and pipelines.

In recent years, the industry has experienced problems and difficulties with the Section 404 permit program that regulates the discharge of dredged or fill material. The program is complex, often uncertain and, frequently, results in unnecessary costs and delays without providing additional environmental protection.

The petroleum industry is concerned with the implementation of the Section 404 permit program and has in the past recommended proposals to improve it. The industry supports the goals of the Clean Water Act and recognizes the Act as an important protection for our nation's waters.

Some progress in streamlining the permit review process while continuing to protect the environment has been achieved through the 1982 revised Memoranda of Agreement between the U.S. Corps of Engineers (Corps) and the Departments of the Interior and Commerce and the Environmental Protection Agency (EPA). However, to ensure continued adherence to the goals of the Act and to increase program efficiency, statutory changes in Section 404 are necessary. Eight recommended legislative revisions are described below.

(1) Centralize administrative authority over the Section 404 program in one federal agency, the U.S. Army Corps of Engineers.

Currently, the EPA develops guidelines, ostensibly in conjunction with the Corps, to specify disposal sites for discharged material; approves state program assumption; vetoes Corps' permit decisions; and brings suit against unpermitted dischargers of dredged or fill material. Dual responsibility by the two agencies over the Section 404 program has caused delays and uncertainties when processing permits. Section 10(a) of H.R. 3282 proposes to elevate EPA's role in this program by ensuring the EPA/Section 404(b)(1) guidelines are given regulatory effect. If enacted, the Corps would be put in the unreasonable position of having to prove that a proposed activity will not have an unacceptable adverse effect on the environment and that agency comments objecting to a permit are unwarranted. Thus, only

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environmental factors could be considered and mere conjecture about environmental harm could trigger lengthy studies and delays. This would eliminate the discretion necessary for the Corps to administer effectively its permit program.

An added concern to industry is the fact that the EPA guidelines are replete with procedural (i.e., non-substantive) requirements. Again, if given statutory effect, EPA could dictate to the Corps how it should implement the Corps' program. To conform to Section 404(b) of the Act, the guidelines should be limited to the establishment of substantive criteria for the specification of disposal sites -- not procedural requirements.

Therefore, the petroleum industry recommends deleting Section 10(a) from H.R. 3282 and adding language to the Act to:

(a) centralize administrative authority in the Corps over the Section 404 program;
(b) ensure that the EPA guidelines are used as guidelines --not inflexible regulations;
(c) limit the EPA guidelines to the establishment of substantive criteria to specify disposal sites; they should not set forth procedural requirements; and
(d) require that permitting authorities document that violation of the guidelines' substantive criteria would occur in order to deny a permit application.

(2) <u>Streamline the permit issuance process to minimize costs and unnecessary delays</u>.

Delays in the permit review process that unnecessarily increase compliance and project costs are one of industry's major concerns. The Corps usually takes from 4 to 15 months to process a permit, although Section 404 gives the Corps 105 days to do so. Frequently delays occur because of the involvement of federal, state and local agencies and private parties.

The 1982 revised Memoranda of Agreement (MOAs) have tried to alleviate this problem. For example, they require justification from parties seeking to extend the comment period. Industry has observed that interagency coordination has been more well defined and better focused upon issues of genuine concern. We are informed that the MOAs have saved one operator between $25-50 million per year without causing an increase in the degradation of the nation's waters. In short, the MOAs are working and the interests of the public and the regulated community are being served well.

Section 10(b) of H.R. 3282 proposes to allow: automatic extensions of agency comment periods without showing any justification; nondiscretionary administrative appeals; and an increase in the number of agency levels that could review a permit decision. If enacted, thus Section 10(b) would abrogate the beneficial effects of the 1982 MOAs. Therefore, industry

urges deletion of Section 10(b) from H.R. 3282 and adding language in the Act to codify the 1982 revised MOAs.

(3) Expand the use of general permits.

Section 404(e) of the Act provides general permits for any category of activities that is similar in nature and will cause only minimal adverse environmental effects. The Corps may consider itself limited in reviewing a permit application by considering only the proposed activity. Individual permits frequently impose conditions and/or stipulations for activities that are of a repetitious nature, such as drilling pads and laying of pipelines. To maintain adequate protection of the nation's waters and yet reduce unnecessary paperwork and permit delays, the petroleum industry recommends amending the Act to expand the use of general permits for both onshore and offshore activities that are similar and adequately conditioned to avoid any significant adverse environmental impacts.

(4) Eliminate dual federal - state review of permit applications.

Before a project may proceed, an operator must often secure federal, state, and local permits and approvals. Multi-tiered review by these agencies occurs in many forms: their programs regulate the same activities, they evaluate similar factors, provide similar opportunities for public participation, and impose the same or similar permit conditions and/or stipulations. This redundant permitting scheme does not enhance environmental protection, but it does add to unnecessary permit costs and delays. Therefore, to reduce such extra costs and delays while continuing to protect the environment, the Act should eliminate dual federal-state review by specifically allowing the Corps to approve without additional review state permits that meet the Corps' requirements.

(5) Require permit conditions to relate only to the permitted activity.

The purpose of imposing conditions and/or stipulations on permits is to reduce or eliminate adverse impacts on the environment by a proposed activity. However, conditions and/or stipulations are often used to regulate activities that are not directly related to the Section 404 permitted activity. This unwarranted conditioning can be eliminated if the Act were amended to require permit conditions and/or stipulations to relate only to the permitted activity -- the discharge of dredged or fill material.

(6) Require a demonstration of the need for permit conditions by commenting agencies.

Under the current administration of the Section 404 program, the applicant must prove that no significant harm to the nation's waters will occur during operations without his applying extra

protective permit conditions. To avoid additional costs and delays associated with challenging these conditions, the applicant often accepts unsubstantiated permit conditions. However, unsubstantiated conditions frequently result in unnecessary extra costs. To prevent this situation, the Act should be amended to require reviewing agencies to demonstrate to the Corps the need for their requesting permit conditions.

(7) Substantially reduce the geographic scope of the Section 404 permit program.

Prior to 1975, the Corps regulated activities in navigable waters. In 1975, the District Court for the District of Columbia ruled that "navigable waters" under the Clean Water Act, including Section 404, were to extend to the furthest limits of constitutional power. As a result, the Corps regulates activities not only in traditionally navigable waters but also in land areas that may not be waters at all, such as intermittent streams, sandflats, and in some cases, merely damp ground.

Overly expansive federal programs, such as the Section 404 program, cause unwarranted federal regulation and needless imposition of uncertainty and delay upon the regulated community. This results in unnecessary added costs to industry and federal government.

In addition, the Act states a policy "to recognize, preserve and protect the responsibilities and rights of States ...to plan the development and use...of land and water resources." It is also the policy of the Act that the states regulate dredging and filling activities within their borders. Under the current scheme, the Corps regulates dredge and fill operations, makes land use decisions and significantly affects land use planning.

Industry recommends that the Act be amended to substantially reduce the geographic scope of Section 404. By so doing, this permit program would better conform to the stated policies of the Clean Water Act and would reduce unnecessary federal regulation.

(8) Balance national energy and other natural resource needs with environmental considerations when deciding permits.

Permit review policies of the Corps and EPA emphasize protection of the environment to the exclusion of other important, national interests, such as energy self-sufficiency and food and fiber. To ensure a proper balancing of all relevant factors in permit decision-making, the Act should be amended. Consideration of important national needs and values, including energy development, should be statutorily required during permit review.

In summary, we urge that necessary legislative changes described above be enacted to eliminate those problem areas and points of imbalance that Congress can best remedy. A meaningful and responsive program can then be established that will not only improve the Section 404 program but will also protect our nation's waters.

Statement of

WILLIAM MANNING, LOUISIANA LAND AND EXPLORATION COMPANY

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November 10, 1983

Regarding Legislative Amendments to Section 404 of the Clean Water Act

The American Petroleum Institute (API), the Western, Alaska, Mid-Continent Oil and Gas Associations, and the Wetlands Energy Production Association wish to thank the House Subcommittee on Water Resources for this opportunity to comment on Section 404 of the Clean Water Act. These associations represent all segments of the petroleum industry who explore (and hopefully discover and produce hydrocarbons) in a wide variety of terrains and climatic conditions onshore and offshore. In order to engage in these activities, which are so vital to our nation's goal of reducing our dependence of foreign oil, we must secure both mineral leases and access rights from the owners of the land over which we must travel, explore, and operate. In addition, we must obtain necessary federal, state and local permits and comply with their respective requirements. If our activities will occur in the waters subject to Section 404 of the Clean Water Act, we invariably must secure a permit for the disposal of dredged or fill material which is issued by the U.S. Army Corps of Engineers ("Corps").

Administration of the Section 404 permit program to regulate the discharge of dredged or fill material is complex and often uncertain. The permit decision-making process frequently results in unnecessary costs and delays without providing additional environmental protection. The problem is not permit denial; it is permit delay. For example, oil industry experience indicates that, on average, it takes approximately four months to receive Section 404 permits. A predictable permitting process that eliminates costly reviews and delays is necessary.

The petroleum industry has been concerned with the conduct of this program for several years. API has recommended several regulatory and legislative proposals to improve it. Some progress is being made in the wake of the 1982 revisions to the Interagency Memoranda of Agreement (MOAs) and recent regulatory proposals. We are informed that the revised MOAs have saved between $25-50 million per year for just one operator. Significantly, this has occurred with no increased degradation of the nation's waters.

Industry supports the goals of the Clean Water Act and recognizes the Act as an important protection for our nation's waters. To ensure increased program efficiency and continued adherence to these goals, statutory changes in Section 404 are necessary. Such desired revisions include changes to:

(1) Centralize administrative authority over the Section 404 program in one federal agency, the U.S. Army Corps of Engineers;

(2) Streamline the permit issuance process to minimize costs and unnecessary delays;

(3) Expand the use of general permits;

(4) Eliminate dual federal-state review of permit applications;

(5) Require that permit conditions relate only to the permitted discharge activity;

(6) Require a demonstration of the need for permit conditions by commenting agencies;

(7) Substantially reduce the geographic scope of the Section 404 permit program.

(8) Balance national energy and other natural resource needs with environmental considerations when deciding permits; and

Each of these points will be discussed in detail below.

(1) Centralize administrative authority in one federal agency - the U. S. Army Corps of Engineers

Authority for implementing the Section 404 program is divided between two agencies, the U.S. Army Corps of Engineers and the Environmental Protection Agency. The Corps administers the Section 404 program, including making permit denial and approval decisions. The EPA develops guidelines, ostensibly in conjunction with the Corps, to specify disposal sites for discharged material. The EPA also has veto authority to override a Corps' permit decision (Section 404 (c)). Dual responsibility by the two agencies over the Section 404 program has caused delays and uncertainties when processing permit applications because of presumptions in the EPA guidelines not required by the statute. As a means to expedite permit processing, the principal administrative agency, the Corps, should be the final authority for determining and implementing the Section 404 program.

Section 10(a) of H.R. 3282 proposes to elevate EPA's role in this program by ensuring that the Section 404(b)(1) guidelines are given regulatory effect. For example, if this provision were enacted, the Corps would be put in the unreasonable position of having to prove that every proposed activity would not cause adverse effects, a negative burden of proof. Moreover, only environmental factors may be considered, even though other

factors may be relevant to the proposed activity and may benefically outweigh any possible adverse environmental effects. Thus, Section 10(a) of H.R. 3282 could eliminate the discretion the Corps must have to administer effectively its permit program.

Under the current EPA guidelines, an applicant must show that his discharge, if permitted, will not cause any unacceptable adverse environmental impacts. Federal agencies and the public are given an opportunity to comment on the application and the anticipated environmental impacts. The Corps then decides whether to grant, conditionally grant, or deny the permit. Under the proposed legislation, the Corps' analysis would be focused upon making a discrete, factual determination that the proposed discharge will not have any adverse environmental impacts.

The proving of a negative has been seen in other contexts as creating an unnecessary hurdle to prompt agency decision-making. This hurdle is the extra step of data gathering and collecting additional information. For example, under Section 403 (ocean discharge criteria), if insufficient information exists to make the necessary determination, no permit may be issued. As under Section 403, Section 10(a) of H.R. 3282 would undoubtedly necessitate data gathering and studies to prove that no conceivable environmental harm could possibly occur (a negative burden of proof). In short, this imposition of a statutory burden of proof to prove a negative would result in the preparation of unnecessary, time consuming and expensive new studies based upon mere conjecture about possible environmental harm. Lengthy permit delays would inevitably result without affording any greater environmental protection to the nation's waters.

Even after having required these new studies and delaying the issuance of needed permits, the Corps' permit decision would still be susceptible to ready challenge by those opposed to any development that requires a Section 404 permit, regardless of how environmentally benign it may be. Such challenge may develop through statutory citizen suit provisions. In such cases, the plaintiffs could easily allege that the Corps inadequately determined, based upon the record then developed, that the proposed activity would not harm the nation's waters.

An added issue of concern to industry involves the fact that the current EPA guidelines are replete with numerous procedural requirements. This has enabled EPA to dictate to the Corps how to implement the Corps' program. In consonance with the language of Section 404(b), the guidelines should be limited to the establishment of substantive criteria for the specification of disposal sites -- not procedural requirements.

If enacted, Section 10(a) of H.R. 3282 would ensure that EPA would retain and possibly expand upon the onerous procedural

requirements already found in its guidelines. In addition to the practical difficulties in effectively administering the program under guidelines that have intrusive procedural requirement, these guidelines encourage litigation based on alledged failures to comply with procedural requirements. To avoid this and in keeping with Congressional intent, the Act should be amended to specify more clearly the role guidelines are intended to play in the permit process: the establishment of substantive criteria for the specification of disposal sites.

API and other petroleum industry associations, therefore, recommend deleting Section 10(a) from H.R. 3282. We also recommend that language be included in the Clean Water Act to: (1) ensure that the Section 404(b)(1) guidelines are used as guidelines -- not binding regulations; and (2) require that permitting authorities establish a violation of the guidelines' substantive criteria in order to deny a permit application. To ease the burden on the permitting authority, a relatively low threshold of proof could be imposed. For example, the permitting authority might only have to establish some evidence that a violation would occur if the applicant conducts the discharge activity as proposed. Or, the permitting authority could be required to demonstrate that a violation might occur. In either case, the applicant would then have the opportunity to rebut this showing in order to secure a permit. An approach such as this would have the practical effect of more equitably assigning who has what burden of proof, while at the same time adequately protecting environmental values appropriate for consideration under Section 404.

(2) Streamline the permit issuance process to minimize costs and unnecessary delays

Delays in the permit process which unnecessarily increase compliance and project costs are one of industry's major concerns. Although Section 404 gives the Corps 105 days to act on a permit application, it usually takes from 4 to 15 months or more to decide whether or not to issue a permit. Frequently, the delays occur because of the involvement of federal, state and local agencies and private parties who generally oppose activities on lands subject to Section 404 permitting.

The 1982 Memoranda of Agreement (MOAs) between the Corps and the Departments of the Interior and Commerce and the EPA have tried to alleviate this problem. The MOAs require that: (1) requests for extensions to the comment period be justified by a showing of need; (2) extensions are not to exceed 30 days; and (3) discretionary review of permit applications be limited to one agency level.

For over the year that the MOAs have been in effect, API has observed that interagency coordination has been more well defined

and better focused upon issues of genuine concern. In addition, the MOAs generally have speeded up the permit review process while continuing to provide protection for the nation's waters. In short, the MOAs are working and the interests of the public and the regulated community have been well served by these revised MOAs.

Therefore, the petroleum industry recommends that this important reform effort be given the permanance of a legislative mandate. Unfortunately, Section 10(b) of H.R. 3282 proposes to abrogate the beneficial effects of the MOAs. Section 10(b) would: (1) allow automatic extensions of agency comment periods without any showing of justification; (2) reinstitute nondiscretionary administrative appeals; and (3) increase the number of agency levels which would review a permit decision. The Corps would also have to document its reasons for failing to follow the recommendations made by commenting agencies. All of this adds up to additional delays without any added environmental protection. Consequently, Section 10(b) of H.R. 3282 should be deleted and Section 404(q) should be amended to codify the current MOAs which have effectively streamlined the permit process.

(3) Expand the use of general permits

The use of general permits, on a regional and nationwide basis, can be an efficient and practicable means to reduce unnecessary delays, costs, and paperwork. Indeed, it was the avoidance of these problems that gave rise to the enactment of Section 404(e). 4 A Legislative History of the Clean Water Act (Serial No. 95-14) at 708 and 713. Although numerous general permits have been issued under this section, the need for more general permits is clear. Therefore, express authorization for the expanded use of general permits should be incorporated into the Act.

General permits expressly provided for in the Act (Sec. 404(e)) may cover any category of activities that is similar in nature and that will cause only minimal adverse environmental effects. In deciding whether a category of activities is appropriately subject to a general permit, the Corps may consider itself limited by Section 404(e) to considering just the proposed activity. In fact, conditions and/or stipulations are attached to many repetitious to activities to ensure that such activities will not cause undue environmental harm. Examples of such repetitious activities in the petroleum industry that often receive similar permit conditions and/or stipulations are the construction of drilling pads and the laying of pipelines.

The Act should be amended to provide greater flexibility in the use of general permits, particularly for activities that are of repetitious nature. In this vein, the Act should expressly recognize that when the Corps determines that an activity is

appropriately subject to a general permit, it may consider not only the proposed activity but also available protective conditions and/or stipulations. By so doing, the Act would provide for greater general permitting that will adequately control environmental effects and address the need to reduce red tape, unnecessary paperwork and permit processing delays.

(4) Eliminate dual federal-state review of permit applications

Before a project may proceed, an operator must often secure federal, state, and local permits and approvals. Multi-tiered review by these agencies occur in many forms: their programs regulate the same activities; they evaluate similar considerations; they provide similar opportunities for public participation; and they impose the same or similar permit conditions and limitations. This redundant permitting scheme does not enhance environmental protection, but it does add to unnecessary permit and project delays and costs. Therefore, industry recommends that the Act address this issue of dual federal-state review of 404 permit applications.

Although state assumption of the Section 404 program under Section 404(g)-(1) could resolve this problem, the fact remains that no state has even applied for this authority. The reasons for this are many and varied (e.g., budgetary constraints, complexity of assumption requirements, etc.). A compromise solution between total state delegation (which has proven to be unacceptable to the states) and dual federal-state review (which is cumbersome, costly, time consuming and unnecessary) would be to expressly authorize the Corps to accept and adopt, without additional federal review, state permits that meet Corps' requirements.

The Corps has attempted to implement just such a program under its existing legislative authority. This effort, however, is currently the subject of pending litigation. Legislative attention to this issue at this time would ensure the continued vitality of this much needed tool for enhancing administrative efficiency while also adequately protecting physical and biological integrity of our nation's waters.

(5) Require that permit conditions relate only to the permitted discharge activity

The purpose of imposing conditions and/or stipulations on permits is to reduce or eliminate any adverse impact on the environment by a proposed activity. With respect to Section 404 permits, conditions and/or stipulations should be imposed that relate directly to the permitted activity, that is the discharge of dredged or fill material. In practice, however, conditions and

stipulations have been frequently used to regulate activities that are not directly related to the discharge of dredged or fill material. Such activites may occur after the permitted discharge is completed. For example, one member company's Section 404 permit included a condition that required the Corps of Engineers to approve production from a well that was to be drilled after the Section 404 permitted activity was completed.

In addition, a 1982 General Accounting Office report by the Comptroller General to the Congress of the United States 1/ concluded that permit conditions have often been imposed that do not relate directly to the proposed discharge site. GAO noted that some of these requirements are extremly costly and "the effectiveness of these measures has not been ascertained." 2/

industry, therefore, urges Congress to amend Section 404 by requiring that all permit conditions and/or stipulations must relate directly to the permitted activity, the discharge of dredged or fill material.

(6) Require a demonstration of the need for permit conditions by commenting agencies

A related concern is the frequent lack of justification of permit conditions and/or stipulations requested by commenting agencies and other interested parties. Unjustified conditions or stipulations are those that lack any scientific or site specific evidence that environmental harm will occur if such conditions are not followed. The 1982 GAO report, supra, observed that most Section 404 permits in Alaska include some sort of stipulation. Of those, 40 percent lacked any site specific support for their need.

Under the current administration of the Section 404 program, the applicant must prove that no significant harm to the nation's waters will occur during operations without his applying extra protective permit conditions. To avoid additional costs and delays associated with challenging these conditions, the applicant often accepts unsubstantiated permit conditions. This practice, however, inevitably results in additional and unnecessary costs.

1/ Developing Alaska's Energy Resources: Actions Needed to Stimulate Research and Improve Wetlands Permit Processing (GAO/EMD-82-44, June 17, 1982).

2/ Id, p. 34.

In light of the above reasons, industry recommends that the Act require permit reviewing agencies to justify, in writing, to the Corps and to the applicant the need for requested permit conditions or stipulations.

(7) Substantially reduce the geographic scope of the Section 404 permit program

Section 404(a) requires that a permit be secured from the Corps before any dredged or fill material is discharged into "navigable waters". In 1975 the District Court for the District of Columbia interpreted Section 404's legislative history as intending "navigable waters" to extend to the furthest limits of constitutional power. As a consequence, the Corps regulates not only activities in traditionally navigable waters, but also activities in land areas that may not be waters at all (e.g., intermittent streams, sandflats, normally dry river bottoms and, in some cases, merely damp ground). In Alaska, the Corps' jurisdiction has been asserted over an estimated 57% of the state, including the North Slope and coastal areas vital to energy development. To bring this extensive regulatory program in line with stated purposes of the Clean Water Act and to provide greater certainty as to that which properly should be regulated, a definition of "navigable waters" specifically applicable to Section 404 is needed.

Overly expansive federal programs result in: unwarranted federal regulation; the dissipation of scarce federal manpower, money and other resources; and, the needless imposition of uncertainty and delay upon the regulated community resulting in unnecessary added costs to industry and increased federal regulatory expenses. All of these extra costs are ultimately passed on to the consumer and the taxpayer.

In addressing this issue the Congress should be congnizant of the fact that wherever wetland regulation exists, land use restrictions are imposed. The inherently localized state prerogative to make land use decisons and to engage in land use planning has been sacrificed under the current, overly expansive interpretation of the proper scope of the Corps' permitting program. What is more, this has occurred despite the stated policy of the Act and the Congress "to recognize, preserve and protect the responsibilities and rights of States...to plan the development and use (including restoration, preservation and enhancement) of land and water resources." (emphasis added; Section 101(b)). It is also the policy of the Act that the states regulate dredging and filling activites that occur within their borders. Under the current scheme, the Corps regulates dredge and fill operations, makes land used decisions and

significantly affects land use planning. This imbalance should be corrected if the announced policies of the Act are to be faithfully adhered to.

To reduce unnecessary federal regulation, to add certainty to the Section 404 program, and to ensure Section 404 conformity to the Act's stated policies, the Act should be amended to better define "navigable waters" and reduce the geographic scope of the Section 404 program.

(8) Balance national energy and other natural resource needs with environmental considerations when deciding permits

Another major issue is the balancing of factors to be considered during the permit decision-making process. The administrative policies of the Corps and EPA, particularly under the Section 404(b)(1) guidelines, emphasize protection of the environment to the exclusion of other important, national goals and priorities (e.g, energy self-sufficiency, food, fiber, housing, mineral and other essential natural resource needs). Many geographical areas that come under the jurisdiction of Section 404 have enormous energy value to the nation. Currently, these other important factors can be considered only after the permit application has satisifed the rigors of the environmental protections under the EPA guidelines.

To ensure a proper balancing of factors when deciding whether or not to issue permit, legislation is necessary. A balanced consideration of all relevant factors in permit decision-making should be added to Section 404(b). Consideraton of important national interests and values would then become a statutorily required part of the Corps' permit decison-making process.

We urge that necessary legislative changes described in this statement be enacted to eliminate those problem areas and points of imbalance that Congress can best remedy. A meaningful and responsive program can then be established that will not only improve the system but will also protect our nation's waters.

Mr. ROE. Please proceed.

TESTIMONY OF KENNETH E. BLOWER, MANAGER OF ENVIRONMENTAL AFFAIRS, STANDARD OIL OF OHIO, AND WILLIAM MANNING, SAFETY AND ENVIRONMENTAL AFFAIRS MANAGER, LOUISIANA LAND & EXPLORATION CO., ON BEHALF OF THE AMERICAN PETROLEUM INSTITUTE

Mr. BLOWER. Mr. Chairman, members of the subcommittee, I am Kenneth E. Blower, manager of environmental affairs for the Standard Oil Co. of Ohio. Today I am representing the American Petroleum Institute as chairman of API's water programs committee. We have submitted a written statement that I would ask be included in the official record.

Mr. ROE. No objection. So ordered.

Mr. BLOWER. API supports the House and Senate efforts to insure the Clean Water Act's workability. Provisions to extend compliance deadlines and to make the national pollutant discharge elimination system permit program more manageable move in this direction. We do, however, suggest some modifications to these provisions that I will discuss in a moment.

I would like to talk first about proposed amendments dealing with water quality standards and the control of toxics after best available technology is achieved. API is concerned that these proposed amendments will create more problems than they will solve.

Both the House and Senate bills have sections that would define just how the States designate the use of water bodies and how they insure the protection of high-quality waters. These provisions should be deleted because EPA has recently changed its proposed regulations which prompted these amendments. Senators Stafford, Chafee, Randolph, and Mitchell have told Mr. Ruckelshaus that they support EPA's revised approach. In fact, they intend to offer an amendment to remove from S. 431 the language related to these provisions when the act is debated on the floor of the Senate. Codifying these complex regulations would not insure their effectiveness. It would instead reduce the flexibility needed to make them workable.

We would urge that the House also delete this section from their bill.

Both bills also require States to adopt numerical criteria for toxic pollutants. The Association of State and Interstate Water Pollution Control Administrators has questioned this approach. They point out that the list of pollutants would expand indefinitely and that an unworkable monitoring program would be required.

API believes that a statutory provision on this issue is premature. EPA and the scientific and technical community are still grappling with the proper role of biological versus numerical criteria for protection of aquatic life. Congress would be unwise to arbitrarily preempt current efforts to resolve this issue.

The provisions in both bills that would mandate additional controls for toxic pollutants after BAT has been achieved are particularly disturbing to us. These proposed amendments would be ineffective for these reasons. First, the amendments set up an unrealistic and rigid timetable for identifying impaired waters and for es-

tablishing additional controls for industrial and municipal dischargers. Second, the proposals do not address the considerable pollution caused by nonpoint sources. Finally, the House proposal would preempt State authority to develop water-quality-based effluent limitations—even though the States, with guidance from EPA, are better equipped to make these decisions.

In short, a new statutory provision is not needed to insure that the problem of toxic pollutants is addressed. In fact, under the authority already provided in the Clean Water Act, the States and EPA are working to create an effective approach to control these pollutants. Those efforts are more likely to solve any problems than a hasty and rigid statutory provision.

On the issues of compliance deadlines and the manageability of the NPDES permit program, API does believe that the Clean Water Act should be amended.

Although we agree that compliance deadlines need to be extended, we do not support the fixed deadlines in the House and Senate bills. Experience has shown that fixed dates do not provide an effective approach—the result too often is the need for another extension of the deadline. API believes that compliance with best available technology and best conventional technology should be required 36 months from the date guidelines are established.

Under the NPDES permit program, EPA and the States are now required to issue permits for sources which are insignificant contributors to water pollution and to renew permits too frequently. The Senate bill S. 431 has addressed these problems. One provision would exclude certain categories of storm water runoff from the permit program. We favor this approach and urge similar action in the House.

A second provision would extend the maximum lifetime of permits to 10 years. We agree that this extension is needed, but the stipulation in S. 431 would require permits to be reopened so frequently that EPA and the States would be swamped with constantly modifying permits and industry would lose any certainty of the duration of permit requirements. We suggest specific language on this point in our written statement.

I would also like to discuss three aspects of the Clean Water Act that have not been addressed in either the House or Senate bill: The treatment of new sources, application of ocean discharge criteria, and best available technology requirements.

With regard to new sources, API believes that the definition of a new source should be based on the date an applicable new source performance standard is promulgated rather than the date it is proposed. Also, discharge permits for new sources should be exempt from review under the National Environmental Policy Act as are new sources under other statutes such as the Clean Air Act and the Resource Conservation and Recovery Act.

An amendment to the ocean discharge criteria section is also needed because these requirements duplicate other environmental assessments. Briefly, these are the assessments now required for oil and gas drilling on the Outer Continental Shelf—an environmental impact statement assessing the environmental effects of the proposed activity; an NPDES permit which imposes technology-based treatment requirements; a site-specific plan of exploration and an

environmental report; a production plan and another environmental report; and, for a new producing area, another environmental impact statement.

The ocean discharge requirement is an additional and redundant environmental review that results in unwarranted costs and unnecessarily delays the search for oil and gas.

Turning to BAT, to avoid treatment for treatment's sake, some modification of the act's best available technology requirements is warranted. When BPT adequately controls the discharge of toxic pollutants, and further control is not cost-effective, BAT should be designated as equivalent to BPT. And in those limited cases where a discharger can demonstrate that the effluent from its facility does not adversely impact the receiving water, modification of BAT requirements more stringent than BPT should be allowed.

In summary, we are all concerned that any changes in the Clean Water Act increase its effectiveness and we support approaches that will do that. However, in the case of water quality standards and control of toxic pollutants, rigid statutory solutions will not. We urge Congress to consider this observation on the toxics control program made in a 1980 House committee report on the implementation of the Clean Water Act:

> The history of this program shows that the asking-for-everything-at-once approach has produced enough confusion and inefficiency to have all too often slowed, rather than accelerated, the achievement of our goals.

To present API's views on amendments to section 404 of the Clean Water Act, I would like now to introduce William Manning, safety and environmental affairs manager of the Louisiana Land & Exploration Co.

Mr. ROE. Mr. Manning.

Mr. MANNING. Thank you.

Mr. Chairman and members of the committee, I, too, would like to express my thanks and appreciation for this opportunity to present the petroleum industry's views on section 404 of the Clean Water Act. In addition to API, I am speaking on behalf of the Western, Alaska, and Mid-Continent Oil and Gas Associations and the Wetlands Energy Production Association.

We support the goals of the Clean Water Act and recognize the act as an important protection for our Nation's waters. However, there are areas of concern regarding section 404 of the act that I would like to discuss. Because time is limited, I will summarize the key problem areas. We have submitting written comments which discuss in detail our concerns with section 404 and proposed legislation.

First, sections 10 (a) and (b) of H.R. 3282 propose to amend section 404 of the act. If enacted, these provisions would compound the existing complexities and uncertainties in the section 404 permit program.

Section 10(a), in effect, converts the EPA/section 404(b)(1) guidelines into regulations. This provision also adds a new clause to section 404(b)(1) which would place the Corps of Engineers in the unreasonable position of having to prove a negative—that the proposed activity would not cause adverse environmental effects. Section 10(b) of H.R. 3282 would allow: automatic extensions of agency

comment periods without showing any justification; nondiscretionary administrative appeals; and an increase in the number of agency levels that could review a permit decision.

Together, these sections would eliminate the discretion the corps must have to administer effectively its permit program and would lengthen the permit review process without adding any greater environmental protection. For these reasons, the petroleum industry strongly urges deletion of sections 10 (a) and (b) from H.R. 3282.

In addition, we have several problems with section 404. We recommend the following legislative changes be made:

Administrative authority over the section 404 program should be centralized in one Federal agency—the Corps of Engineers.

The permit issuance process should be streamlined to minimize unnecessary costs and delays.

The use of general permits for both onshore and offshore activities that are similar and adequately conditioned to avoid any significant adverse environmental impacts should be expanded.

Dual Federal-State review of permit applications should be eliminated by specifically allowing the corps to approve without additional review State permits that meet corps' requirements.

Permit conditions and stipulations should be required to relate only to the permitted activity; that is, the discharge of dredged or fill material.

Reviewing agencies should be required to demonstrate to the corps the need for requested permit stipulations.

The geographic scope of the section 404 permit program should be substantially reduced.

Consideration of important national interests and values, including the Nation's need for energy, should be required throughout the decisionmaking process.

Because time does not permit discussion of all of our recommendations, I would like to discuss briefly one of them; that is, elimination of multiple Federal-State review of permit applications. Before a project may proceed, an operator must often secure Federal, State, and local permits and approvals. Multitiered review by these agencies occurs in many forms and they frequently vary from State to State. Their programs regulate the same activities; they evaluate similar considerations; provide similar opportunities for public participation; and impose the same or similar permit conditions and limitations. This redundant permitting scheme does not enhance environmental protection, but it does add to unnecessary permit and project delays and costs.

Although State assumption of the section 404 program could resolve this problem, the fact is no State, to my knowledge, has even applied for this authority. A compromise solution between total State assumption and dual Federal-State review would be to expressly authorize the corps to accept and adopt, without additional Federal review, State permits that meet corps' requirements. Legislative attention to this issue could enhance administrative efficiency while also adequately protecting the chemical, physical, and biological integrity of our Nation's waters.

Again, I thank you for the opportunity to express industry's views on improving section 404, and I would be happy to answer any questions you may have.

Mr. ROE. I thank you both for your comprehensive testimony.

Mr. Stangeland.

Mr. STANGELAND. Mr. Blower, in discussing proposed amendments, you declare in your statement that EPA and the scientific community are still grappling with the proper role of biological versus numerical criteria. Would you expand on that statement and what are the advantages and disadvantages in your opinion of biological versus numerical.

Mr. BLOWER. I think that we are unsure of just where biological criteria fit into the whole scheme of things. When you think of controlling a large number of toxic pollutants, and I think we are moving in this direction in the water program, the numbers may be up to 10, 20, or 30 and the techniques for analyzing these individual parameters are very expensive and very time consuming. Research efforts at the American Petroleum Institute, and research efforts at EPA, are looking at biological techniques as a surrogate measure of toxicity. If that were the case, one would not have to measure individual pollutants but one could measure the effects of the water discharge on certain biological organisms.

What we don't know is how effective that will be, whether it will be beneficial, whether it will reduce costs of analytical testing, whether it can be relied upon, and how it will be incorporated in a permit. This is a slowly maturing program and I would say at the infant stages. There may be benefits from the approach. We don't know. I am aware that in one of Standard Oil's facilities in Ohio that both approaches are being tried and on experimental basis and I think it is just too early to know whether there are benefits there.

Mr. STANGELAND. I have some other questions, Mr. Chairman, but I would ask permission to submit them in writing.

Mr. ROE. No objection. The gentleman will submit some additional questions to you in writing.

Mr. BLOWER. Please do.

[The questions submitted to Mr. Blower follow. Responses to the questions had not been received by the subcommittee at time of publishing.]

QUESTIONS FOR AMERICAN PETROLEUM INSTITUTE

1. MR. BLOWER, ON PAGE 4 OF YOUR ORAL STATEMENT, YOU INDICATE THAT THAT NPDES 10-YEAR PERMIT PROVISION OF S. 431 COULD ALLOW FEW, IF ANY, PERMITS TO BE EXTENDED TO 10 YEARS. WOULD YOU EXPLAIN IN MORE DETAIL WHAT IT IS ABOUT THE SENATE'S LANGUAGE THAT YOU BELIEVE WOULD PRODUCE THIS RESULT?

2. MR. BLOWER, ON PAGE 4 OF YOUR ORAL TESTIMONY, YOU STATE THAT "AN AMENDMENT TO THE OCEAN DISCHARGE CRITERIA SECTION IS ALSO NEEDED BECAUSE THESE REQUIREMENTS DUPLICATE OTHER ENVIRONMENTAL ASSESSMENTS." YOU THEN LIST A NUMBER OF THE OTHER ASSESSMENTS TO WHICH YOU REFER. DO YOU BELIEVE THAT THE REQUIREMENTS OF SECTION 403 OF THE ACT ARE TOTALLY DUPLICATED BY OTHER ENVIRONMENTAL STATUTES? OR ARE YOU SAYING THAT SECTION 403'S REQUIREMENTS ARE SUBSTANTIALLY DUPLICATED?

3. MR. MANNING, YOUR TESTIMONY PRESENTS THE PETROLEUM INDUSTRY'S STRONG FEELINGS THAT SECTIONS 10(A) AND 10(B) OF H.R. 3282, BOTH DEALING WITH AMENDMENTS TO SECTION 404 OF THE CLEAN WATER ACT, SHOULD NOT BECOME LAW. WHAT SPECIFIC CONSEQUENCES WOULD YOU ENVISION IF THOSE PROVISIONS WERE TO BE ENACTED? CAN YOU GIVE ANY EXAMPLES OF HOW YOUR INDUSTRY WOULD BE DIRECTLY AND ADVERSELY AFFECTED BY THESE PROVISIONS?

4. MR. MANNING, YESTERDAY A NUMBER OF WITNESSES TESTIFIED, BASED ON AN ANALYSIS OF THE NUMBER OF 404 PERMITS ISSUED AND THE

LENGTH OF TIME TYPICALLY REQUIRED, THAT THE CURRENT 404 PROGRAM HAS NOT BEEN OVERLY TIME CONSUMING. THEY BELIEVE THAT, IF ANYTHING, PERHAPS MORE TIME SHOULD BE TAKEN BEFORE PERMIT DECISIONS ARE REACHED IN A NUMBER OF CASES. I WOULD EXPECT THAT YOU WOULD NOT AGREE WITH THIS STATEMENT. HAVE YOU DONE ANY PROGRAM ANALYSIS TO SUPPORT THE POSITIONS YOU ARE ADVOCATING TO EXPEDITE THE 404 PROCESS?

5. MR. MANNING, ON PAGE 2 OF YOUR WRITTEN TESTIMONY, YOU STATE THAT "WE ARE INFORMED THAT THE MOA'S HAVE SAVED ONE OPERATOR BETWEEN $25-50 MILLION PER YEAR WITHOUT CAUSING AN INCREASE IN THE DEGRADATION OF THE NATION'S WATERS." COULD YOU PLEASE DESCRIBE THIS SITUATION MORE FULLY FOR THE COMMITTEE?

Mr. ROE. I have no further questions.

Thank you very much for being with us today. I think you stated your case clearly.

Mr. MANNING. Thank you.

Mr. ROE. Our next witness will be Mr. William W. West, the director of environmental control, Republic Steel Corp., and chairman of the AISI Committee on Environment.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF WILLIAM L. WEST, DIRECTOR OF ENVIRONMENTAL CONTROL, REPUBLIC STEEL CORP.

Mr. Chairman, Members of the Subcommittee,

I am William L. West, Director of Environmental Control for Republic Steel Corporation. I am appearing here today on behalf of the American Iron and Steel Institute, the principal trade association for the American steel industry, whose 60 domestic member companies represent 86% of the steel production capacity in the United States. I am Chairman of AISI's Committee on Environment. We are most appreciative of this opportunity to appear today.

On August 2, 1983, I appeared before this Subcommittee to present the viewpoints of AISI on amending the Clean Water Act. At that time, I discussed the background of the steel industry and of our concern with the Clean Water Act. I will not repeat that testimony today, other than to state again that the steel industry has already invested over $2 billion in facilities for control of water pollution, that we have in place facilities to control over 95% of all water pollutants generated in our plants, and that we will be installing within the next few years additional facilities to comply with the BAT effluent limitations guidelines and achieve about 99% control of all pollutants. The steel industry has today such major problems that the Administration has recently established a Steel Advisory Committee to examine the problems that affect our industry.

When I testified previously, I stressed our industry's urgent need for extending the deadlines under the Clean Water

Act, particularly the July 1, 1984 deadline in the Act for compliance with technology based requirements. We still believe that it is essential that the Clean Water Act be amended to extend the deadline for these technology based requirements by a period of 42 months after the date of enactment or 36 months after the imposition of specific limits for industrial operations, whichever is later.

Today, I would like to concentrate on two other very important issues: (1) the pretreatment program, and (2) water quality standards.

It has long been recognized that the joint treatment of industrial and municipal wastes can in many cases provide an extremely cost effective method of eliminating pollution and achieving water quality goals. Municipal sewage treatment plants are designed to, and by their very nature must, effectively remove many pollutants which occur in industrial discharges. For those pollutants only partially removed in municipal sewage works, proper pretreatment by industrial operators, combined with the treatment provided in municipal sewage treatment plants, can result in a protection of water quality with optimum utilization of funds. The Congress clearly recognized the advantages of this joint treatment in establishing the pretreatment program provisions in the Clean Water Act.

EPA has established a pretreatment program attempting to implement the provisions of the present Clean Water Act.

Industry believed that many of the provisions of these regulations were unreasonable and challenged them in court. The recent decision by the U.S. Court of Appeals for the Third Circuit (National Association of Metal Finishers, et al. v. Environmental Protection Agency, No. 78-2256, September 20, 1983) has essentially affirmed the definition of regulations under the present Act. It is now clear that there are three problems which make the present program so unworkable that the Act should be amended. These problems are the issue of removal credits, the deadlines established in the law, and the moving target problem. The problems of deadlines and removal credits are inextricably bound together and today put industry in a real dilemma.

As to the deadline problem, I can cite the experience of my own company which has several facilities that discharge to POTWs. Two facilities are covered by the categorical pretreatment standards of the iron and steel effluent guidelines, while six fall under the integrated electroplating/metal finishing regulations. The compliance date for those under iron and steel regulations is July 10, 1985, while the first deadline for the integrated electroplating/metal finishing category is June 30, 1984. Republic filed the EPA mandated "baseline reports" for all eight facilities by the April 6, 1983 deadline. As of November 1, 1983, Republic has received no response from EPA, nor from state agencies, nor from the local POTWs as to the completeness of our proposed plan of

action. As a result, Republic Steel is proceeding to comply with each of the above deadlines, assuming that the baseline reports are acceptable. Since the EPA rulemaking of January 28, 1981 on removal credits had been deemed unworkable by many local POTWs, EPA proposed revised removal credit provisions on September 28, 1982. Republic relied upon that September 28, 1982 document in preparation of the above mentioned baseline reports. EPA has now stated that they will promulgate new removal credit provisions in early 1984. Should these final provisions be substantially different from the September 1982 proposal, Republic would need to amend the baseline reports and can do so within the 180-day mandate. Clearly, the compliance deadline of June 30, 1984 for six of Republic's eight facilities will have passed within this timeframe. It is very doubtful that such a schedule would allow compliance by July 10, 1985 for at least one of the two iron and steelmaking facilities. Industrial dischargers should not be precluded from the credits provided by Congress in the Act simply because the administrative procedures for implementing the program have not been developed in a timely fashion.

This problem can be illustrated in detail by the following examples from several steel companies.

1. Republic Steel Corporation, Chicago, Illinois Iron and Steelmaking Facilities

Along with other wastewaters, partially treated coke

plant wastewater is discharged to the Chicago Metropolitan Sanitary District (MSD) system. Republic's pretreatment system is currently not meeting the categorical pretreatment standards for ammonia and phenol. If the Chicago MSD receives the authority from EPA, they can grant substantial removal credits for phenol and ammonia. Present removal rates for phenol indicate that on the average 99% of the phenol and some percentage of the ammonia received at the MSD plant are removed by the POTW. When the system is upgraded to advanced treatment in the late 1980s, higher removal credits for ammonia can also be allowed.

If removal credits are not granted, Republic must spend at this one plant several million dollars for additional phenol removal and substantially increase its current operating costs to remove ammonia. The compliance date for this facility is July 10, 1985, so Republic must act soon if it is to meet this deadline.

2. Armco Inc., Middletown, Ohio

Coke Plant

This facility currently discharges partially treated coke plant flushing liquor into the Middletown, Ohio, POTW. The pretreatment system is currently not meeting the categorical pretreatment standards. Preliminary data on POTW removal efficiency, however, suggest that the combined removal achieved by pretreatment and the POTW is at least equal to and probably greater than the categorical standards.

If the POTW receives authority to grant removal credits of 82% for phenol and about 70% for ammonia, the Middletown Works will not be required to provide expensive, additional pretreatment facilities. However, should the POTW not receive removal credit authority, Armco is faced with spending several million dollars for a phenol removal system and to increase substantially current operating costs to remove additional ammonia.

The City of Middletown is currently in the process of applying for approval to grant removal credits for phenol and ammonia. Based on historical operating data, it is probable that the City will be granted the authority to give removal credits in the range of those outlined. Based on the probability that removal credits will be granted, Armco has delayed installation of additional pretreatment facilities. If, however, the credits are denied or delayed in EPA's administrative procedures, then the coke plant will physically be unable to comply with the categorical pretreatment standards by the July 10, 1985 deadline.

3. National Steel Corporation, Great Lakes Steel Division, Detroit, Michigan

The Great Lakes Steel Division plant currently discharges partially treated coke byproduct plants wastewater into the Detroit wastewater treatment system in compliance with their sewer use ordinance. Removal efficiency data on the POTW show that the combined removal of phenol by existing

retreatment and the POTW is at least euqal to and probably greater than that required by the categorical pretreatment guidelines. The POTW has filed an application for permission to grant removal credits for phenol. If such authority is granted, Great Lakes will not be required to provide expensive additional pretreatment facilities with their accompanying operational costs. If the removal credits are denied or delayed in the administrative procedure, then Great Lakes faces the risk of being unable to comply with the categorical pretreatment guidelines by the specified date of July 10, 1985.

These three examples clearly illustrate the dilemma brought about by the combination of deadlines and removal credit provisions of the current Clean Water Act. AISI strongly recommends that the Act be amended to allow local POTWs more flexibility in the handling of their pretreatment programs. This flexibility should provide to the POTW authority to grant case-by-case extension of pretreatment compliance deadlines were preliminary evidence suggests removal credits are appropriate. The suggested removal credit program would be to allow a POTW a reasonable time, say, up to six months from enactment of Clean Water Act amendments, to submit an application for removal credits. EPA could then temporarily stay the pertinent categorical pretreatment standards until it acted upon that application, perhaps within another four to six months. If the application is granted,

the POTW's NPDES permit should be modified to authorize the operation of an alternative local pretreatment program and the stay of categorical pretreatment standards should be extended. In the unlikely case that the application were denied, the categorical pretreatment standards would on the date of denial become effective and enforceable and compliance therewith required in the shortest practical time.

We believe that such a program could be fully workable and would bring pretreatment on a schedule quite comparable to that of direct dischargers.

Another procedural problem in the program is total plant compliance with two or more sets of pretreatment standards for the same point of discharge. It is likely that a plant will have electroplating/metal finishing operations and iron and steelmaking operations adjacent at the same location. As noted earlier in the testimony, the compliance date for electroplating/metal finishing is June 30, 1984 and for iron and steel is July 10, 1985. Thus, the combined plant outfall has a "moving target" compliance deadline. We recommend that the Act be simply amended to require that a facility meet the applicable pretreatment standards three years after promulgation of the <u>last</u> set of regulations applicable to each specific facility.

In another area, proposals have been made for the establishment of new provisions in the water quality standards program, particularly for "toxic" pollutants, and for a

mechanism to deal with "toxic hot spots" in streams. There has been considerable pressure to freeze present water quality standards and to impose new water quality standards for all of the "toxic" pollutants listed in the Act. AISI does not believe that any amendments to the Clean Water Act are essential to provide for adequate protection of water quality through the mechanism of water quality standards. EPA has just issued revised regulations for the establishment and maintenance of water quality standards, which we believe provide very adequately for maintenance and improvement of water quality. Concern has been expressed about the possibility of "downgrading" water quality. The new regulations would not permit this. Some of the current designated water uses and standards do not represent uses now attained or even potentially attainable but are the results of hasty and sometimes improper rulemaking. Thus, revised standards for those streams would involve at least maintenance of existing uses and no real degradation.

One of our member companies, Armco Inc., has submitted for the record a statement concerning three examples of this type of water quality standards problem. I will not go into the details of these examples. Mr. Bruce Steiner, Manager of Environmental Engineering of Armco Inc., is here with me today and would be glad to discuss them in more detail. We believe, however, that these and other examples are indicative of the current problems of water quality standards and

that they can be solved by a regulatory approach rather than any amendments to the Act.

There has also been considerable pressure for the establishment of water quality standards for all of the "toxic" pollutants in the Act. We believe strongly that water quality standards should be set for protection of the appropriate uses. However, with respect to many of these toxic pollutants, there is a dearth of data on the presence of these pollutants in the nation's waters, and there are simply no data available on the toxicology of these materials which provide an adequate basis for the establishment of water quality standards. For many, analytical techniques have only recently been developed. Yet it has been proposed the Act be amended to include a specific timetable requiring standards development. It is AISI's belief that a legislative timeframe forcing EPA to make premature regulatory decisions without an adequate scientific basis is not good legislation. Therefore, we recommend against such a proposal.

We thank you very much for this opportunity to appear before you to express our opinions on amendments to the Clean Water Act. We will be happy to provide any additional information you require and will be happy to provide any assistance in the drafting of effective amendments to the Clean Water Act.

Mr. ROE. Please proceed.

TESTIMONY OF WILLIAM L. WEST, DIRECTOR OF ENVIRONMENTAL CONTROL, REPUBLIC STEEL CORP. AND CHAIRMAN OF THE AISI COMMITTEE ON ENVIRONMENT ON BEHALF OF THE AMERICAN IRON AND STEEL INSTITUTE, ACCOMPANIED BY BRUCE STEINER, MANAGER OF ENVIRONMENTAL ENGINEERING, ARMCO, INC.

Mr. ROE. Would you identify your colleague for the record.

Mr. WEST. Thank you, Mr. Chairman and members of the subcommittee. I am William L. West, director of environmental control for Republic Steel Corp. I am accompanied today by Bruce Steiner who is a manager of environmental engineering at ARMCO, Inc. We are appearing here today on behalf of the American Iron and Steel Institute, a principal trade association for the American steel industry whose 60 domestic member companies represent about 86 percent of the steel production capacity in the United States.

I am chairman of AISI's committee on environment. We are most appreciative of this opportunity to appear today.

In the interest of time, I will summarize my statement but ask respectively that our full written statement appear in the record.

Mr. ROE. Your full statement has been entered into the record.

Mr. WEST. On August 2, 1983, I appeared before this subcommittee to present the viewpoints of AISI on amending the Clean Water Act. At that time, I discussed the background of the steel industry and of our concern with the Clean Water Act.

When I testified previously, I stressed our industry's urgent need for extending the deadlines under the Clean Water Act, particularly the July 1, 1984, deadline in the act for compliance with technology-based requirements. We still believe that it is essential that the Clean Water Act be amended to extend the deadline for these technology-based requirements by a period of 42 months after the date of enactment or 36 months after the imposition of specific limits for industrial operations, whichever is later.

Today, I would like to concentrate on two other very important issues: One, the pretreatment program, and two water quality standards.

It has long been recognized that the joint treatment of industrial and municipal wastes can in many cases provide an extremely cost-effective method of eliminating pollution and achieving water quality goals. The Congress clearly recognized the advantages of this joint treatment in establishing the pretreatment program provisions in the Clean Water Act.

EPA has established a pretreatment program attempting to implement the provisions of the present Clean Water Act. It is now clear that there are three problems which make the present program so unworkable that the act should be amended. These problems are the issue of removal credits, the deadlines established in the law, and the moving target problem. The problems of deadlines and removal credits are inextricably bound together and today put industry in a real dilemma.

As to the deadline problem, I can cite the experience of my own company which has several facilities that discharge to POTW's. Republic filed the EPA-mandated baseline reports for all eight facilities by the April 6, 1983, deadline. As of November 1, 1983, Republic has received no response from EPA, nor from State agencies, nor from the local POTW's as to the completeness of our proposed plan of action.

EPA has now stated that they will promulgate new removal credit provisions in early 1984. Should these final provisions be substantially different from the September 1982 proposal, Republic would need to amend the baseline reports and can do so within the 180-day mandate. Clearly, the compliance deadline of June 30, 1984, for six of Republic's eight facilities, will have passed within this timeframe. It is very doubtful that such a schedule would allow compliance by July 10, 1985, for at least one of the two iron and steelmaking facilities. Industrial dischargers should not be precluded from the credits provided by Congress in the act simply because the administrative procedures for implementing the program have not been developed in a timely fashion.

This problem can be illustrated in detail by the three examples in our prepared statement.

These three examples clearly illustrate the dilemma brought about by the combination of deadlines and removal credit provisions of the current Clean Water Act. AISI strongly recommends that the act be amended to allow local POTW's more flexibility in the handling of their pretreatment programs. This flexibility should provide to the POTW authority to grant case-by-case extension of pretreatment compliance deadlines where preliminary evidence suggests removal credits are appropriate.

The suggested removal credit program would be to allow a POTW a reasonable time, say, up to 6 months from enactment of Clean Water Act amendments, to submit an application for removal credits. EPA could then temporarily stay the pertinent categorical pretreatment standards until it acted upon that application, perhaps within another 4 to 6 months. If the application is granted, the POTW's NPDES permit should be modified to authorize the operation of an alternative local pretreatment program and the stay of categorical pretreatment standards should be extended. In the unlikely case that the application were denied, the categorical pretreatment standards would, on the date of denial, become effective and enforceable and compliance therewith required in the shortest practical time.

We believe that such a program could be fully workable and would bring pretreatment on a schedule quite comparable to that of direct dischargers.

Another procedural problem in the program is total plant compliance with two or more sets of pretreatment standards for the same point of discharge. The combined plant outfall has a moving target compliance deadline. We recommend that the act be simply amended to require that a facility meet the applicable pretreatment standards 3 years after promulgation of the last set of regulations applicable to each specific facility.

In another area, proposals have been made for the establishment of new provisions in the water quality standards program, particu-

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larly for toxic pollutants, and for a mechanism to deal with toxic hotspots in streams.

There has been considerable pressure to freeze present water quality standards and to impose new water quality standards for all the toxic pollutants listed in the act. AISI does not believe that any amendments to the Clean Water Act are essential to provide for adequate protection of water quality through the mechanism of water quality standards.

EPA has just issued revised regulations for the establishment and maintenance of water quality standards, which we believe provide very adequately for maintenance and improvement of water quality. Concern has been expressed about the possibility of downgrading water quality. The new regulations would not permit this.

Some of the current designated water uses and standards do not represent uses now attained or even potentially attainable but are the results of hasty and sometimes improper rulemaking. Thus, revised standards for those streams would involve at least maintenance of existing uses and no real degradation.

One of our member companies, Armco, Inc., has submitted for the record a statement concerning three examples of this type of water quality standards problem. I will not go into the details of these examples. Mr. Bruce Steiner, manager of environmental engineering of Armco, Inc., is here with me today and would be glad to discuss them in more detail. We believe, however, that these and other examples are indicative of the current problems of water quality standards and that they can be solved by a regulatory approach rather than any amendments to the act.

There has also been considerable pressure for the establishment of water quality standards for all of the toxic pollutants in the act. We believe strongly that water quality standards should be set for protection of the appropriate uses. However, with respect to many of these toxic pollutants, there is a dearth of data on the presence of these pollutants in the Nation's waters, and there are simply no data available on the toxicology of these materials which provide an adequate basis for the establishment of water quality standards.

For many, analytical techniques have only recently been developed. Yet, it has been proposed the act be amended to include a specific timetable requiring standards development. It is AISI's belief that a legislative timeframe forcing EPA to make premature regulatory decisions without an adequate scientific basis is not good legislation. Therefore, we recommend against such a proposal.

We thank you very much for this opportunity to appear before you to express our opinions on amendments to the Clean Water Act. We will be happy to provide any additional information you require and will be happy to provide any assistance in the drafting of effective amendments to the Clean Water Act.

Mr. ROE. Thank you very much, Mr. West.

Mr. Steiner.

Mr. STEINER. I have nothing to say.

Mr. ROE. The gentleman from Arizona.

Mr. MCNULTY. No questions.

Thank you, Mr. Chairman.

Mr. ROE. Thank you very much.

Mr. WEST. Thank you, sir.

Mr. ROE. We appreciate your testimony.

Our next group is the National Environmental Development Association; Mr. William Haun, chairman of the NEDA clean water project and vice president of energy policy, General Mills, Inc.; Mr. J. Jeffrey Zimmerman of NEDA/WATER's Technical Committee and manager, external affairs, health and environment, Occidental Petroleum Corp.

Mr. STANGELAND. It is my distinct pleasure to welcome Dr. Haun to the subcommittee today. Dr. Haun received his Ph.D. in chemical engineering from the University of Texas. His many years of valuable research with General Mills and elsewhere are direct evidence of his capabilities.

Dr. Haun serves on numerous national and international bodies, especially on environmental issues. I am especially pleased with his selection as Engineer of the Year in Minnesota. Dr. Haun has been an expert witness for clean water issues for several decades. He is now serving as Chairman of the National Environmental Development Association's Clean Water Project and Industry Labor Coalition.

I am sure the committee will gain a good deal of useful information from this panel who are very knowledgeable witnesses.

Mr. ROE. Does the good doctor come from Minnesota originally, is that your home State?

Dr. HAUN. No, sir. I was born in Alabama. I have moved around. I am a modern-day nomad, Mr. Chairman.

Mr. STANGELAND. Is it true, Dr. Haun, that you were the person in charge of devising and developing the Betty Crocker Kitchens at General Mills?

Dr. HAUN. Yes.

Mr. STANGELAND. And having achieved a great deal of success with that endeavor, he ended up becoming a vice president.

Mr. ROE. We need a good cook around here too.

We welcome you very much, Dr. Haun and Mr. Zimmerman.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT
by the
National Environmental Development Association
Clean Water Project
before the
Subcommittee on Water Resources
of the
Committee on Public Works and Transportation
U.S. House of Representatives

November 10, 1983

Good afternoon, Mr. Chairman and Members of the Subcommittee. My name is J. William Haun. I am Vice President of General Mills and I am here today speaking for the Clean Water Project of the National Environmental Development Association, of which I am chairman.

With me are Mr. Jeff Zimmerman of Occidental Petroleum, chairman of the Project's Technical Committee, and Mr. James Sheets of the Laborers' International Union, AFL-CIO.

The NEDA Clean Water Project is a coalition of industry, labor, agriculture and other interests seeking a balanced consideration of issues relating to the Clean Water Act.

Today, we will present recommended changes to the Act dealing with Pretreatment, Compliance Deadlines, Integrated Facilities, Permit Life, De Minimis Exemptions, Intermittent Streams and Construction Grants.

Perspective

Mr. Chairman, before we offer our recommendations for amendments to the Clean Water Act, I would like to bring into perspective the pollution sources which are the central focus of these hearings.

It is often assumed that industrial dischargers are responsible for the largest share of water pollution. Let's examine the facts: Chart A shows the overwhelming majority of water pollutants are not coming from point sources subject to regulation under the Clean Water Act. With the exception of dissolved heavy metals, the chart shows that nonpoint sources, far and away, contribute the greatest amount of water pollution.

This is not to say that there is no room for improvement among industrial dischargers, particularly in the area of toxic pollutants. Rather, we make this point simply to put into perspective the net result of further regulation of point-source dischargers.

Second, among point-source dischargers, one group stands out above all others in the amount of water pollution emitted. Chart B shows total amount of pollutants for the top 10 point source groups. Within this category, publicly owned treatment works are compared to nine industrial sources.

This comparison clearly shows that the image of industry as the nation's principal polluter is not based on fact. Point sources contribute only a fraction of the overall water pollution and, among point sources, industry is not the major polluter.

We bring this to the attention of the Subcommittee not to sidestep our responsibility for improving water quality or blame others. Rather, we hope that this perspective will be kept in mind as the Subcommittee and Congress seek meaningful ways to increase the effectiveness of the Clean Water Act.

Recommendations

We are here today to urge the Subcommittee to amend the Clean Water Act to...

...achieve more widespread and effective water pollution control;

...accelerate the process of cleaning up the nation's waters;

...reduce the tangle of red tape which interferes with the above goals and results in undue cost to the public.

The NEDA Clean Water Project offers recommendations which will make the Clean Water Act more comprehensible, less complex and a more efficient vehicle for attaining the nation's water pollution control objectives. The Act needs strengthening through clarification and simplification.

Mr. Chairman, over the past few weeks you have received a great deal of information concerning the Clean Water Act, much of it in support of positions similar to those of the NEDA Clean Water Project. Therefore, we will not give you yet another treatise on these issues. We will briefly highlight our major concerns, with a more detailed treatment of the issues provided separately to the Subcommittee.

Also, we have listened to the questions that you and other members of this Subcommittee have been asking in the course of these hearings, and we will try to answer some of those questions in our remarks today.

Here to present our recommendations for changes to the Clean Water Act is Jeff Zimmerman, chairman of the Project's Technical Committee.

Statement by Jeffrey Zimmerman

Mr. Chairman and Members of the Subcommittee, we thank you for this opportunity to discuss our recommendations for changes to the Clean Water Act.

Echoing the remarks of Dr. Haun, I would like to begin by emphasizing that the following changes to the Clean Water Act are intended to result in a national program which will attain more pollution control, faster and at less public cost.

Pretreatment

The NEDA Clean Water Project supports the concept of pretreatment for certain industrial wastes. Specifically, we support without change, the objectives of the program which are to pretreat pollutants which:

(1) are not susceptible to treatment by POTWs and which, therefore, would pass into the water body untreated;

(2) interfere with the operation of the treatment works; or

(3) interfere with the proper disposal of sludge.

We also support Congress' intent to encourage joint treatment through a municipal treatment plant. Congress believes, and we agree, that joint treatment is a cost-effective and efficient way of controlling water pollution.

It is in the mechanisms for implementing the program where we and others, including state and local government, see the program's greatest weakness and where, we believe, the Committee should concentrate its attention.

Why is the pretreatment program a problem to industry? Very simply, it will result in redundant treatment of wastes at great and needless cost to industry and, ultimately, the public.

Consider this example: Since 1981, an aluminum plant has been discharging its waste into a local POTW. The waste contains small quantities of heavy metals and considerably larger quantities of aluminum in the form of soluble aluminum hydroxide.

The impact of the discharge on the POTW has been closely studied. Not only has the discharge not harmed the POTW, it has actually improved sludge settling and thickening performance, saving the POTW money.

Under the federal pretreatment program, this aluminum plant must pretreat its waste before discharging to the POTW. It will cost the discharger millions of dollars, and it will take away from the POTW certain performance improvements it now enjoys.

POTWs can effectively treat many of industry's wastes without any industrial pretreatment. While the current program recognizes this and theoretically provides for "removal credits," this credit program is so complicated that it defies comprehension. The result is that many local POTWs refuse to implement the program because of

its complexity -- a fact which will undoubtedly be aired in next week's testimony before this Subcommittee -- and industry is forced to unnecessarily pretreat wastes which could be removed by these POTWs.

EPA's recent moves to simplify the program by creating "national removal credits" apply to only a few pollutants and are consequently of little use.

Therefore, we recommend that the Act be changed to allow qualified local POTWs to establish their own pretreatment program which would be as good if not better than the federal program in terms of pollution control. We do not advocate eliminating the federal program. That program would remain in effect unless a POTW successfully qualifies to implement its own local program. The effect on water quality would be the same as or better than the federal program, with only the methods being different.

How would we measure whether the results are at least as good as the federal program? There are several possible methods. One is to measure effluent at the end of the POTW pipe to see if it is the same as it would have been under the federal program. Another is to measure against water quality standards in the receiving water, and another is to study the effects of effluent on biota in the water body.

Under the federal pretreatment program, the only tests to show compliance with permit limitations are those by POTWs. The federal program simply requires that a company install technology necessary to meet the national categorical pretreatment standards. The program does not measure the effects on the water body. Our recommended change goes a step beyond what the federal government now requires.

Would such an approach reduce protection of human health? Not at all. In fact, the federal program, as it is now structured, addresses control technology -- not the effect on the water body or human health. Our approach would at least move us a step closer to measuring these effects.

In short, we recommend that eligible POTWs, those in compliance with the Clean Water Act or on a compliance schedule, be allowed to operate their own pretreatment program. POTWs which are under construction could apply later to implement their own programs. We would be pleased to provide the Subcommittee with more details about how this alternative program could be structured.

Pretreatment of Compatible Pollutants

Another important issue in the pretreatment area is that of compatible pollutants. There is sufficient history in the record to show that it was not the intent of Congress to require industry to

pretreat recognized compatible pollutants -- conventional pollutants toward which POTW technology is directed. Nonetheless, EPA after the 1977 amendments acted counter to Congressional intent by encouraging cities with inadequate or poorly operated POTWs to require pretreatment of conventional pollutants by users, rather than correct the problems of POTWs.

We believe that ensuring the construction and proper operation of needed POTWs has been the basis for this federal pollution control program. Congress should not allow EPA to continue substitution of pretreatment of conventional pollutants for properly functioning POTWs.

Compliance Deadlines and Integrated Facilities

Because of the inability of the Environmental Protection Agency to promulgate effluent guidelines in a timely manner, there is a serious problem in complying with Best Available Technology Economically Achievable (BAT) and Best Conventional Technology (BCT) deadlines as set forth in the Act.

Simply stated, industry can't comply with requirements which don't exist or which have only recently been promulgated.

To deal with this in an equitable manner, we propose that dischargers be given 3 years to comply with BAT or BCT requirements

after EPA issues the applicable effluent guideline. This approach would treat everyone equally, regardless of when effluent guidelines are promulgated.

Some proposals take this approach but also incorporate a closing date, such as July 1, 1987. The rationale for an arbitrary closing date is to avoid extensive delays in compliance because a guideline has not been promulgated. Also, it is believed that a closing date will cause industry to put pressure on EPA to develop the guideline in sufficient time -- a practice which has yet to work.

The EPA schedule for promulgating effluent guidelines has once again slipped and, if July 1, 1987 is the deadline, there are already several industries which will have less than 36 months to comply.

If this Subcommittee is favoring a fixed deadline, we encourage the Subcommittee to set a reasonable period of time in which industry can comply with requirements or, once again, we will be back asking for yet another extension.

A parallel problem regards what we call "integrated facilities," which are dischargers subject to more than one guideline, particularly those required to pretreat their wastes.

An example from our membership concerns a diversified manufacturing plant -- consisting of 6 manufacturing buildings on 1,800 acres. All wastewater is treated at one facility. In all, there are 60 regulated processes with over 20 miles of wastewater pipe with a flow of 6 to 7 million gallons per day.

This plant is subject to six pretreatment categories, four of which have been promulgated, one which has been proposed, and another which has yet to be proposed. Until all the standards are known, this plant will not be able to calculate what the ultimate end-of-pipe limitations will be. In the meantime, the compliance clock is ticking on those standards which have already been issued.

EPA issues pretreatment standards one at a time, and the compliance clock starts running at the time the first applicable pretreatment standard is issued. Integrated facilities are faced with having to plan, design, and construct pretreatment systems far in advance of knowing all the standards they will ultimately have to meet. In many cases, it is physically impossible for integrated facilities to comply with sequentially issued pretreatment standards.

The solution is to set a single compliance deadline, requiring integrated facilities to be in compliance with effluent guidelines or pretreatment standards three years from the time the last

applicable standard is promulgated. If the Subcommittee considers coupling this with a fixed compliance deadline, it should be careful to allow a reasonable period, since the problem of timely promulgation is compounded for integrated facilities.

Permit Life

EPA now faces a backlog of approximately 30,000 permit applications. Of the initial permits issued in the program, 44,000 were granted without final effluent guidelines and must be modified when those guidelines are promulgated. The need for renewal of permits every five years, or even more frequently in many instances, subjects EPA and the state agencies to substantial administrative burdens.

Many of the organizations which have testified before this Subcommittee, as well as the NEDA Clean Water Project, recommend that the maximum life for NPDES permits be extended from 5 to 10 years.

This raises the issue of when and under what circumstances permits can be reopened. Under current regulations, there are several provisions which allow for reopening of permits, including a mandatory reopener any time a new toxic effluent standard is developed. We support this and other reopener provisions in current

regulations. If EPA is concerned about the effect of changing cleanup requirements and its ability to reopen the conditions of the permit, it has the option to either issue the permit for a shorter period of time or propose changes to its reopener regulations.

De Minimis Exemptions

The majority of Clean Water Act permits are for minor discharges. Literally thousands of NPDES small-source discharge permit applications, some written as long ago as 1972, are awaiting action.

An illustration of the problem is an actual case where a company's drinking fountain, because of its location, drains its overflow into a water body. That drinking fountain requires an NPDES permit, and there is no provision allowing it to be exempted.

The EPA Administrator should be allowed to exempt de minimis point source discharges and channeled stormwater runoff containing de minimis quantities of pollutants from the NPDES permit procedure. Determination of eligibility for exemption should be based on concentration, volume and type of discharge.

The Senate Committee has, in part, recognized this point and has included in S.431 exemptions for channeled stormwater runoff which contains no pollutants for oil, gas, and mining industries. However, we see no reason to limit this exemption to certain industries or types of discharge. All discharges which contain little or no pollutants should be eligible for exemption.

Intermittent Streams

In adopting water-quality-based standards, states have traditionally applied them to all streams, with little or no field studies to determine whether or not the criteria are appropriate.

This has resulted in requiring facilities to install water pollution controls on discharges into intermittent streams where the effluent is the sole source of stream flow. Application of such control technology is, in many cases, unnecessary, inappropriate, and needlessly expensive.

Water quality standards should only be applied to intermittent streams (streams not having a constant, natural flow) in cases where the Administrator or the state agency determines it is necessary for protection of aquatic life in the perennial stream.

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Mr. Chairman, the final topic we would like to cover in our statement is Construction Grants. Here to present information on construction grants is Mr. Jim Sheets of the Laborers' International Union.

Statement by James Sheets

Construction Grants

As pointed out earlier in this testimony, the largest single sources of water pollution in this country are municipal treatment works. You have received testimony which discusses the fact that many municipalities are not in compliance with the law.

We are aware of areas which even today have no wastewater treatment. EPA estimates that by the year 2000, $118 billion will be needed for the construction of wastewater treatment plants. Congress has only made a dent in these needs.

The inability of municipalities to meet their pollution control obligations creates serious problems, not only in regard to the environment but also with regard to an area's economic health. You have heard that nearly one-half of the nation's communities are unable to add additional homes or businesses to their sewage treatment systems because they are already operating at full

capacity. If a production facility is prohibited from locating in a particular site or expanding an existing facility because of inadequate municipal sewage treatment, the municipality could suffer the economic hardship of losing a major source of new jobs and tax revenue.

If, in order to offset pollution from municipal discharges, a producer is required to use more expensive controls to balance the effect of municipal waste, he might be forced to look for another site where pollution cleanup costs are more equitably shared.

Only adequate funding and legislative and program reforms will assure that dollars are spent productively to control the nation's water pollution problems. The reduction in funding to $2.4 billion a year does not mean that the overall cost of the municipal cleanup has gone down. In fact, if the reduction in funding has slowed the progress of the program -- which is likely -- the overall cost of the program is likely to rise as the stalled projects are hit with inflation.

Over the past few weeks, you have heard a variety of opinions about what to do about this problem. The opinions have ranged from increasing federal grants to phasing the program out entirely and allowing municipalities to develop their own source of funds.

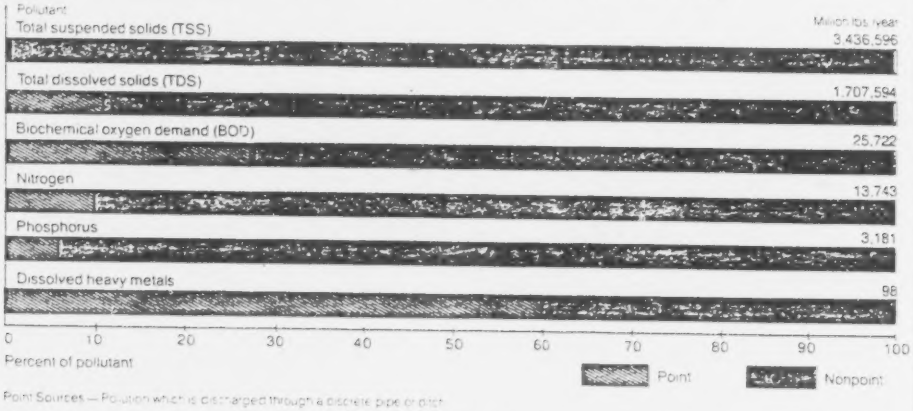
We seriously question the ability of municipalities to raise these cost-sharing funds under the current program, let alone raise 100 percent of these funds.

There have been innovative suggestions such as privatization of POTWs and allowing federal grants to be used for low interest loans. We do not pass judgment on these suggestions, they may be workable. However, today we are faced with an ever increasing need to get these plants up and running. The most immediate vehicle for getting funds in the hands of municipalities is the existing construction grants program. Consequently, we support the funding provisions now included in Chairman Howard's bill H.R.3282.

Thank you for your attention. We will be happy to answer your questions.

CHART A

Point *vs.* Nonpoint: Where Does Pollution Come From?



Point Sources — Pollution which is discharged through a discrete pipe or ditch.

Nonpoint Sources — The effects from urban runoff, construction, hydrologic modification, silviculture, mining, agriculture, irrigation return flows, solid waste disposal, and individual sewage disposal.

Source: Council on Environmental Quality, *Environmental Trends*, July 1981

CHART B

POTWs *vs.* Industry: Who Pollutes the Most?

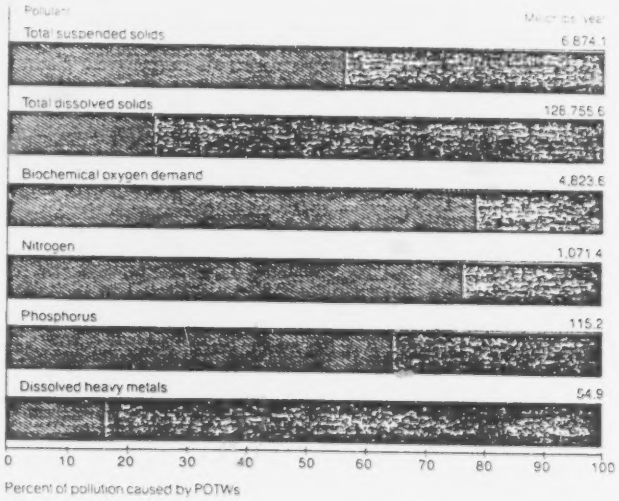
The image of industry as the nation's principal point-source polluter is not based on the facts. As the figures to the right conclusively show, municipal sewage facilities, referred to as Publicly Owned Treatment Works (POTWs), contribute the most pollution to waterways. This chart shows total amount of pollutants for the top 10 point source sectors. POTW pollutant loadings have been contrasted with the remaining nine sectors.

Publicly Owned Treatment Works

Total, Remaining Nine Sectors

Reflects 1977 data

Source: Council on Environmental Quality, *Environmental Trends*, July 1981



NEDA
CLEAN WATER PROJECT
NATIONAL ENVIRONMENTAL DEVELOPMENT ASSOCIATION, 605 Fourteenth Street, NW, Washington, DC 20005 • 202 638-1230

The Clean Water Act: Congress Takes Another Look

"The challenge is to develop programs which effectively implement the law's intent and principles without frustrating the best efforts of both industry and government."

Congress faces a challenging job: reauthorization of the landmark Federal Water Pollution Control Act, also known as the Clean Water Act.

- Is it a perfect law?
- Is there room for improvement?
- What improvements are needed?

Enacted in 1972 and amended in 1977, the Act has been heralded by environmentalists as the "perfect example" of achieving widespread benefit through legislative initiative. American industry — which has borne the main burden of implementing the Act — and segments of organized labor see the Act as far from perfect and want a number of changes made during the reauthorization process.

Early last spring, speculation in Washington was that EPA would develop a list of amendments to the Act which would be compatible with those sought by industry.

When the Administration's bill finally emerged in late May, however, it succeeded in upsetting both environmentalists and industry in nearly equal degrees.

Environmentalists claim that EPA's proposed amendments would greatly weaken the Act and several industry groups feel that some of the most urgently needed reforms were ignored.

Congress has now waded into the controversy by holding hearings, in both the House and the Senate, on the Clean Water Act reauthorization. (An account of those hearings is contained in this publication, with details on the recommendations given to Congress by NEDA/Water.)

Key players in the issue on Capitol Hill include John H. Chafee (R-RI), chairman of the Senate Environmental Pollution Subcommittee, and Robert A. Roe (D-NJ), chairman of the House Water Resources Subcommittee.

Chafee has made it clear that he believes the Act should be reauthorized without substantive amendment.

Roe feels there is not sufficient time in this legislative session to properly weigh the alternatives and come up with well-crafted amendments. He favors a simple one-year reauthorization of the Act with the understanding that it will be taken up next year.

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NEDA Urges Congress to Make Federal Law Simple, Realistic, Flexible

J. William Haun, chairman of the NEDA Clean Water Project, called on Congress to remove "the flaws which have caused confusion, frustration and friction between those who regulate and those who are regulated" under the Clean Water Act.

Testifying before the Senate on July 21 and before the House on July 29, Haun pointed to excessive complexity, regulatory inefficiencies and unrealistic expectations in the Act.

Haun said that these weaknesses often have caused industry and government to be cast in the role of adversaries "because of problems in the Act which we now have the opportunity to correct."

Reminding members of Congress that he participated in the 1971 hearings on clean water, Haun stated: "Ten years' experience with the law provides us with valuable insight into both the strengths and weaknesses of the Act. There can be no question that the strengths of the Act have brought many tangible benefits. However, with 10 years of success

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J. William Haun, chairman of NEDA/Water, urged Congress to eliminate the problems that hamper the efforts of both government and industry to comply with the intent of the Clean Water Act.

Here Are Issues Needing Attention, Says NEDA

The NEDA Clean Water Project, made up of environmental professionals with extensive experience in the implementation of the Clean Water Act, has developed recommendations for amendments to the Act.

The thrust of these recommendations is to simplify and clarify provisions of the Act which are now causing unnecessary regulatory burdens on industry and government, without significant offsetting environmental benefits.

The NEDA Clean Water Project hopes, through its examination of the issues and its recommendations, to contribute constructively to Congressional consideration of the law's legislative and regulatory problems.

Following are summaries of the NEDA Clean Water Project's recommendations. More detailed information may be obtained by contacting NEDA.

De Minimis Exemptions

The Clean Water Act requires that a NPDES permit must be obtained for a point source discharge even if the discharge is small and contains only minute quantities of benign pollutants. The law even requires a permit for uncontaminated stormwater runoff channeled into ditches around an industrial plant.

The effect of unnecessary permitting requirements is an undue burden upon permit-issuing agencies. A 1979 survey by the Association of State and Interstate Water Pollution Control Administrators revealed that about 51 percent of all permits issued involve relatively insignificant facilities with respect to point source pollution. Meanwhile, literally thousands of NPDES small-source permit applications are waiting for action by permitting agencies, some applications submitted as long ago as 1972.

De minimis point source discharges and channeled stormwater runoff containing de minimis amounts of pollution should be exempt from NPDES requirements.

Compliance Deadlines

Because EPA has not been able to promulgate final guidelines, large segments of American industry will not be able to meet the July 1, 1984 deadline for installing Best Available Technology Economically Achievable (BAT) and Best Conventional Technology (BCT) controls.

Even if EPA published final guidelines today, the affected industrial facilities could not be brought into compliance by the statutory date since it typically takes about three years to design, purchase, manufacture and install new treatment facilities.

NEDA/Water recommends that, recognizing realities, Congress should amend the law so that when EPA promulgates requirements, industry will be encouraged to comply as expeditiously as practicable, and in any event, within three years.

Section 301 of the Act should be amended to allow for BAT compliance three years after effluent guidelines have been promulgated. Uniform national deadlines for control technology installation should be avoided since they would set up inequitable compliance situations; instead, Congress should provide guidance to EPA on developing a timetable for the issuance of guidelines. In order to provide equity among industrial operations, sources should have three years from the date of promulgation of a BAT guideline for particular categories or classes. If a source's discharges are subject to two or more categorical effluent guidelines, a source should have three years from the date of promulgation of the latest BAT guideline.

BAT Determinations

The Act requires industry to install increasingly more stringent water pollution controls. The first level of control — Best Practicable Technology (BPT) — was required in 1977. The next level — Best Available Technology Economically Achievable (BAT) for toxic pollutants and Best Conventional Technology (BCT) for conventional pollutants — is to be installed by 1984.

However, there is growing evidence that, for many industries, the installation of water pollution controls beyond those required under BPT may not significantly improve water quality. Studies indicate that there are far fewer toxic pollutants present in treated industrial and municipal effluents than was previously assumed due to the unexpectedly effective treatment of toxics by BPT. EPA now forecasts that many industries will be able to achieve the law's more stringent BAT requirements with their current level of treatment.

Therefore, in developing various categories of BAT effluent guidelines, the adequacy of BPT to remove toxic pollutants should be taken into account. The EPA Administrator should be allowed to set BAT as equal to BPT where control beyond BPT would not result in significant additional removal of pollutants.

NPDES Permit Life

Under present law, NPDES permits must be renewed every five years even though it frequently takes more than one year for the final permit to be issued and typically takes three years to design, purchase and install treatment technology. A five-year permit life allows little time for the permit holder to test the effectiveness of the treatment before the permit renewal application process begins again. Further, EPA is facing a backlog of approximately 60,000 permit applications.

This substantial administrative burden could be relieved by extending the maximum allowable life of an NPDES permit from five to 10 years.

Zero Discharge

At first glance, the goal stated in Section 101(A) of the Act, that "discharge of pollutants into the navigable waters be eliminated by 1985," appears to be a worthy if ambitious aspiration.

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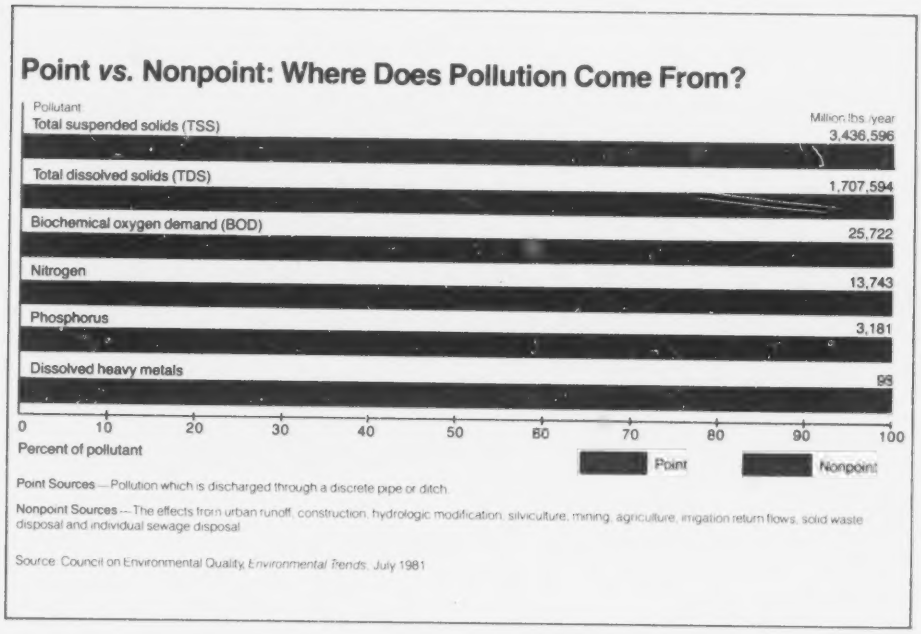

Congress could not foresee, however, that the goal would be literally interpreted to mean zero *discharge* of pollutants in even the smallest amounts regardless of the difficulty or cost related to the absolute elimination of water-borne pollution. EPA and the courts have used the goal to move toward increasingly stringent discharge guidelines which often provide little, if any, environmental benefit.

Assuming that the goal could be met in certain cases, attainment of "zero discharge" in waters often would only cause the pollutant to be transferred to another portion of the environment: air or land or within geological formations.

The NEDA Clean Water Project recommends that the language of Section 101(A)(1) be amended to delete the 1985 attainment date and require a study to be conducted to determine the appropriateness of the "zero discharge" goal. Results of the study should be presented to Congress prior to the Act's next reauthorization, NEDA/Water believes.

Dredged or Fill Materials

Section 404 of the Clean Water Act authorizes the Secretary of the Army to issue permits for the deposition of dredged or fill material into the waters of the United States and at disposal sites designated by EPA guidelines.

Problems abound with this section of the Act. Permit decisions hinge on EPA consultation with a number of other federal agencies such as the Fish and Wildlife Service. This causes confusion and delay. Further confusion is caused by the lack of definition of what constitutes "adjacent wetlands" where permits are required.

The scope of the program should be clarified. Technically quantifiable criteria should be used to determine whether permits are required. Present functions of the EPA should be transferred to the Corps of Engineers. The permit programs which are currently part of the dredged or fill program should be expanded to incorporate inundated land areas. The permit process should be streamlined.

BAT Modifications

Congress allows EPA to grant modifications to the more stringent technology requirements for nonconventional pollutants based on the fact that under certain conditions, water bodies can absorb pollutants without harming water quality. Congress specified stringent tests for these modifications.

In contrast, Congress allows no such modification from BAT limits for toxic pollutants. The Act requires that dischargers install increasingly stringent water pollution controls for toxic pollutants without regard to the effect on water quality.

In Congressional testimony, EPA Deputy Administrator John Hernandez outlined the reasons why allowance for BAT modifications makes sense. He said, "We believe that by carefully targeting BAT controls, we will address the bulk of the toxics problems and will not be forcing industries to adopt incrementally more stringent controls than are necessary to meet water quality standards and protect the environment. In those cases where BAT rules will require treatment for treat-

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ment's sake, waivers should be available to keep us from wasting resources."

Control-technology modifications from BAT toxic pollutant requirements should be provided for toxic pollutants discharged in insignificant amounts which do not cause and are not likely to cause toxic effects. They should be contingent on stringent tests already applicable to other pollutants. This can be accomplished by repealing the prohibitions in 301(g)(1) and 301(1).

National Environmental Policy Act

To obtain an NPDES permit for a new source, EPA must subtait to a National Environmental Policy Act (NEPA) review and may be required to prepare an Environmental Impact Statement (EIS). These requirements can create an unnecessary expense for the agency and the applicant, and can cause long delays in the permit decisionmaking process.

The NEPA review is redundant. It covers not only water quality effects but includes all media including air, water and solid waste. Other statutes already cover every environmental aspect of constructing a new source. The information required for submission of an NPDES permit is more than sufficient for the agency to determine any potential water quality impacts.

There is a demonstrated need to make EPA's implementation of the Clean Water Act consistent with its implementation of RCRA, the Clean Air Act and other environmental statutes by exempting issuance of new source NPDES permits from NEPA's requirements.

Pretreatment

Pretreatment requirements were established by Congress in 1972 to prevent industrial pollutants from interfering with the proper operation of publicly owned treatment works, and to prevent the pass-through of toxic pollutants into receiving water. Later, the law as amended in 1977 also authorized EPA to develop national technology-based pretreatment standards for toxic pollutants.

In carrying out this program, EPA has developed a complex and sometimes unmanageable plan. In addition, the national pretreatment regulations fail to consider the diversity of design and operation of each POTW and the diversity and variety of wastes handled by each POTW. Pretreatment programs need to be flexible in order to give the POTW latitude to develop its own specifically tailored programs.

In its review of the law, Congress should reassess its position on having EPA require such a complicated program. Experience indicates that pretreatment would be handled better if it were turned back to the states and municipalities so that they can develop their own specially-tailored pretreatment programs. EPA should continue to play a strong role in providing technical guidance to the municipalities

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POTWs *vs.* Industry: Who Pollutes the Most?

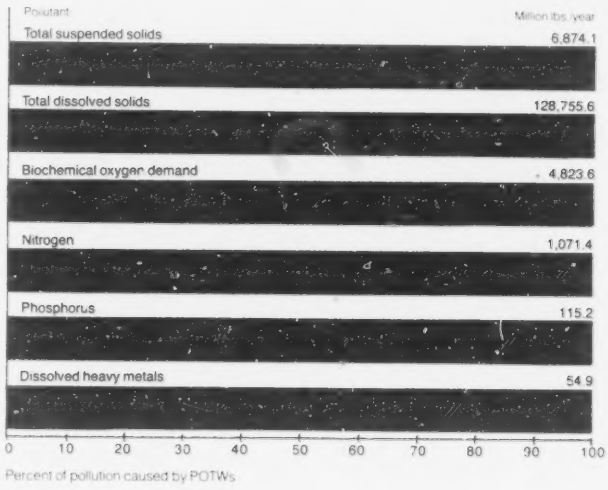
The image of industry as the nation's principal point-source polluter is not based on the facts. As the figures to the right conclusively show, municipal sewage facilities, referred to as Publicly Owned Treatment Works (POTWs), contribute the most pollution to waterways. This chart shows total amount of pollutants for the top 10 point source sectors. POTW pollutant loadings have been contrasted with the remaining nine sectors.

Publicly Owned Treatment Works

Total, Remaining Nine Sectors

Reflects 1977 data

Source: Council on Environmental Quality, *Environmental Trends*, July 1981



that need it. Ultimately, protection of the environment derives from the enforcement of the POTWs' permit.

BPJ Guidance

In many cases, EPA will not develop the comprehensive set of effluent guidelines meant to provide the basis for Best Available Technology effluent limits in NPDES permits. In the absence of these nationwide BAT guidelines, EPA is likely to substitute unilateral, unreviewed guidance documents for permit writers making ad hoc determinations of BAT.

The setting of case-by-case limits based on the judgment of individual permit writers (referred to as "best professional judgment" or BPJ) can cause considerable variation in treatment of similar industrial dischargers. With no firm guidelines to follow, and looking only to documents which have not undergone scientific peer review, permit writers produce results which contain both wide variations and inequities.

Specific statutory criteria should be taken into account when determining BAT by best professional judgment: (1) the age of the equipment and facilities involved; (2) the engineering aspects of the application and various types of control techniques; (3) process changes; (4) the cost of achieving such effluent reduction; and (5) non-water-quality environmental impact (including energy requirements). Use of these criteria will assure that case-by-case permit limits set by BPJ guidance are based on the same criteria as limits based on nationwide BAT guidelines.

Ocean Discharge

The Act requires that any direct discharger of water, other than those who discharge to a POTW, must obtain a NPDES permit under Section 402. If the discharge is to ocean waters, Section 403 further limits the conditions under which the Section 402 NPDES permit may be issued. The special requirement for ocean waters was devised at a time when Congress was unsure whether the environmental consideration under the Section 402 permit process would sufficiently protect ocean waters.

It is clear today that the NPDES program has been effective in protecting ocean waters. Section 403 adds unnecessary, indefinite procedures and an adequacy-of-data test subject to interpretation by each consultant or permit writer.

The Act should be changed to enable EPA to deny NPDES permits only if unreasonable water quality degradation would occur from the discharge. Also, EPA should be required to limit the examination of ocean discharge impacts and the promulgation of guidelines only to aspects of potential ocean degradation that (1) are not already addressed under Section 402, and (2) are reasonably likely to occur from the type of operation for which a permit is sought. If projects are subject to an EIS requirement, any Section 403 determination should rely on EIS data and analyses, not require redundant analyses.

Restoration of Natural Resources

Section 311 of the Act imposes civil penalties against any discharger of oil or hazardous substances in violation of the Act's guidelines. While such penalties have played a role in the protection of the environment, the guidelines have three major flaws. First, penalties are automatic and do not consider the impact of the spill on the environment. Second, the discharger is liable for the cost of restoration or replacement of natural resources without any consideration of the ecosystem's ability to recuperate. Third, the law indiscriminately applies to all spills, even those which occur within artificial impoundments.

The solutions to these three problems are (1) to make the penalty apply to real need, requiring that no penalty be assessed until spills are proven harmful to the environment; (2) when penalties are assessed, the restorative process of nature should be taken into account and (3) spills which occur in artificial impoundments should be exempt from penalty.

Agricultural Stormwater Discharges

Stormwater discharges from agricultural water management systems become subject to Clean Water Act Section 402 permitting requirements under the definition of "point source" in Section 502(14). Under this definition, structural and mechanical water management systems which handle stormwater in flat land areas become point sources, even though the discharge is similar to discharges which are not confined. The opportunities for pollution reduction by Best Management Practices are similar whether the discharge is confined or unconfined. Moreover, Best Management Practices for agricultural runoff usually require structural detention systems which convert the discharge from the non-point to point source category.

Agricultural stormwater discharges should be excluded from the definition of point source in Section 502(14). State and local programs should continue to control non-point source pollution.

Intermittent Streams

For intrastate water, Section 303 of the Act requires states to adopt water-quality-based standards. Failure of the states to act leads to adoption of water-quality-based standards developed by EPA.

In adopting these standards, states have traditionally applied them to all streams, with little or no field studies to determine whether or not the criteria are appropriate. In some cases this has required plant facilities to install water pollution controls on discharges into intermittent streams where the effluent is the sole source of stream flow. Application of such control technology is expensive, inappropriate and, in some cases, unnecessary.

Water quality standards should be applied at the confluence of the intermittent stream with a perennial stream instead of being applied at the discharge point into the intermittent stream. This would assure the protection of the perennial stream. ■

TOWARD A BETTER CLEAN WATER ACT:
NEDA OFFERS SOLUTIONS TO WATER ACT PROBLEMS

A SUMMARY OF THE SPECIFIC RECOMMENDATIONS MADE TO CONGRESS FOR AMENDMENTS TO THE CLEAN WATER ACT BY THE NEDA CLEAN WATER PROJECT.

De Minimis Exemptions

De minimis point source discharges and channeled stormwater runoff containing *de minimis* amounts of pollution should be exempt from NPDES requirements.

Compliance Deadlines

Recognizing realities, Congress should amend the law so that when EPA promulgates requirements, industry will be encouraged to comply as expeditiously as practicable, and in any event within three years.

Section 301 of the Clean Water Act should be amended to allow for BAT compliance three years after effluent guidelines have been promulgated. Uniform national deadlines for control technology installation should be avoided since they would set up inequitable compliance situations. Instead, Congress should provide guidance to EPA on developing a timetable for the issuance of guidelines. In order to provide equity among industrial operations, sources should have three years from the date of promulgation of a BAT guideline for particular categories or classes. If a source's discharges are subject to two or more categorical effluent guidelines, a source should have three years from the date of promulgation of the latest BAT guideline.

Best Available Technology Determinations

In developing various categories of BAT effluent guidelines, the adequacy of BPT to remove toxic pollutants should be taken into account. The EPA Administrator should be allowed to set BAT as equal to BPT where control beyond BPT would not result in significant additional removal of pollutants.

NPDES Permit Life

The Clean Water Act should be changed to extend the maximum allowable life of an NPDES permit from five to 10 years to ease the permit log-jam and to reduce administrative burdens on industry, EPA and state agencies.

Zero Discharge

The language of Section 101 (A)(1) should be amended to delete the 1985 attainment date and require a study to be conducted to determine the appropriateness of the "zero discharge" goal. Results of the study should be presented to Congress prior to the Act's next reauthorization.

Dredged or Fill Permit

The scope of the dredged or fill permit program should be clarified, particularly in the area of "adjacent wetlands." Technically quantifiable criteria should be used to provide certainty in determining which situations do and which situations do not require a permit. The criteria defining "adjacent wetlands" should be limited to include only those areas which affect the attainment or maintenance of the environmental goals of the Act. "Adjacent" should be limited to areas contiguous to or bordering on waters of the United States. Vegetation- and saturation-related criteria should be dropped from the definition of wetlands, retaining only frequency of inundation and specific time periods between inundations. Substitution of "inundated lands" for "wetlands" would more clearly describe the area which the program is intended to cover.

Present functions of the Administrator of EPA under Section 404 should be transferred to the Secretary of the Army. EPA would participate in the decision process through the normal commenting and consultation procedures in subsections (m) and (q) of Section 404.

The general permit programs currently part of the dredged or fill permit program should be expanded to the maximum extent possible to incorporate inundated land areas.

The permit process should be streamlined, and decisionmaking should be centralized in the Corps of Engineers or the authorized state agency. Most important is a realignment of the relationship between the Corps and the U.S. Fish and Wildlife Service to emphasize that the decision resides with the Corps and it will not be *de facto* delegated to another agency.

Best Available Technology Modifications

Control technology modifications from BAT toxic pollutant requirements should be provided for toxic pollutants discharged in insignificant amounts which do not cause and are not likely to cause toxic effects. They should be contingent on stringent tests already applicable to other pollutants. This can be accomplished by repealing the prohibitions in 301(g)(1) and 301(i).

Those states which have been delegated NPDES permitting authority also should have the authority to grant modifications.

National Environmental Policy Act

NPDES permit applications for new sources should be exempt from NEPA review. An exclusion under the Clean Water Act would make the law consistent with the procedures already effective in other environmental acts. Section 511(c)(1) of the Act should be amended to incorporate this exemption.

Pretreatment

The provisions which require EPA to publish regulations establishing pretreatment standards (including categorical standards for toxic pollutants) should be deleted. EPA should provide guidance for POTWs' development of pretreatment programs.

As a part of the NPDES permits, POTWs should be required to establish pretreatment programs. This would require development and enforcement by POTWs of pretreatment standards.

Section 307(b) of the Act should be amended to focus more clearly on the problems of interference and pass-through from industry discharges to POTWs.

It should be made clear that it is not the intent of Congress to encourage pretreatment of compatible pollutants as a substitute for adequate capacity or proper operation of POTWs. Section 307(b) of the Act should be amended to prohibit EPA from requiring specific pretreatment programs above and beyond those developed by POTWs to meet their permit as a condition for approval of POTW construction grants.

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Haun Testimony Cites Water Act Weaknesses; Calls on Congress for Needed Changes

continued from page 1

have come 10 years of problems, many of them seriously hampering the efforts of both government and industry to comply with the intent of the Act. If the Clean Water Act is in need of change, and we believe that it is, the needed changes are those which will improve our ability to continue the important work of restoring and protecting our nation's waters."

Haun identified three categories of weakness in the Act: excessive complexity, regulatory inefficiencies and unrealistic expectations.

Haun said the Act's pretreatment provisions are an example of excessive complexity. The NEDA project chairman testified: "The [pretreatment] requirements of this program boggle the mind." He urged Congress to reassess its position on having EPA require such a complicated program, recommending instead that states and municipalities be given the authority to develop pretreatment programs, tailored to local needs.

In the category of regulatory inefficiency, Haun pointed to the massive size of the program, which has resulted from the statutory directives to issue permits for every discharge even if the discharge is insignificant. "One cannot look at this program without being staggered by its scope," he said.

It is estimated that EPA is facing approximately 60,000 permit applications. Of the initial permits issued in the program, 44,000 were granted without final effluent guidelines and must be modified when those guidelines are promulgated. Because of the backlog, there are many dischargers that have been waiting for permit decisions since 1972.

Unrealistic expectations is the third category of weakness in the Act, Haun told Congress. Exemplifying that flaw is the so-called "zero discharge" goal of the Act which calls for complete elimination of water pollution by 1985, he said.

"This goal appears to be unrealistic," Haun testified. He pointed out that 10 years ago, zero discharge would have meant reducing pollutant levels to nondetectable levels, measured in parts per million. Today, he stated, we can measure some pollutant levels down to *parts per trillion*. "We could be discharging the equivalent of drinking water, in some cases, and still not be meeting the goal of zero discharge," he said.

Concluding his testimony, Haun asked Congress to strive for three goals in its review of the Clean Water Act:

- First, he said, the administration of the law should be kept as *simple* as possible so as not to tie up our resources in arguing over complicated programs which don't result in pollution control.
- Second, there is a need to be *realistic*, rather than setting unachievable goals which frustrate both government and the public.
- Third, the law shold be *flexible* enough to deal with unique situations and give those implementing it some leeway in applying its requirements. ■

Best Professional Judgment Guidance

Special statutory criteria should be taken into account when determining BAT by "best professional judgment:" (1) the age of equipment and facilities involved; (2) the process involved; (3) the engineering aspects of the application and various types of control techniques; (4) process changes; (5) the cost of achieving such effluent reduction; and (6) nonwater-quality environmental impact (including energy requirements). Use of these criteria will assure that case-by-case permit limits set by BPJ guidance are based on the same criteria as limits based on nationwide BAT guidelines.

Ocean Discharge Criteria

The Act should be changed to enable EPA to deny NPDES permits only if unreasonable water quality degradation would occur from the discharge. Also, EPA should be required to limit the examination of ocean discharge impacts and the promulgation of guidelines only to aspects of potential ocean degradation that (1) are not already addressed under Section 402, and (2) are reasonably likely to occur from the type of operation for which a permit is sought. If projects are subject to an EIS requirement, any Section 403 determination should rely on EIS data and analyses and should not require redundant analyses.

Restoration of Natural Resources

Make the penalty apply to real water degradation. Section 311 of the Clean Water Act should be amended to require that no penalty be assessed until spills of oil or hazardous substances are proven harmful to the environment. When penalties are assessed, the restorative process of nature should be taken into account. Spills that occur in artificial impoundments, from which a discharge is covered by a NPDES permit, should be exempt from the penalty provision.

Agricultural Stormwater Discharges

The definitions of point source in Section 502(14) should be amended to exclude all agricultural stormwater discharges. Existing authority and support should be continued for state and local programs (under Section 208 of the Clean Water Act) to control nonpoint source pollution which is identified as a water quality problem in local areas.

Intermittent Streams

Congress should amend the Clean Water Act to make it clear that, except in limited instances, states should not apply water-quality-based standards to streams having only intermittent natural flow. States should apply limits beyond technology-based effluent limitations to intermittent streams on a case-by-case basis *only* when there is significant environmental benefit from the added control.

Construction Grants Program

Maintain financial assistance at a level sufficient to assure the cleanup of water pollution from municipalities. The assistance program should assure that funds are spent on projects that will produce the greatest amount of water pollution cleanup and control. In order to assure that funds are spent effectively, the program should be reformed so that it requires more money to be spent on the construction of needed facilities and less money wasted on needless studies and paperwork which only cause delay, confusion, and inflated costs, and which deliver no benefit to the environment. Federal involvement should be limited to oversight and guidance, and EPA should permit states to set their own programs for administering financial assistance. ■

Congress Takes A Look At Clean Water Act Amendments

continued from page 1

Few members of Congress seem eager to enter a full-blown debate on the Clean Water Act at this stage of the election year.

However, regardless of when the action occurs, reauthorization of the Clean Water Act could be among some of Congress' most controversial debates.

The challenge of Congress is to deal with the implementation difficulties while preserving the basic intent of the Clean Water Act, to protect our nation's waters.

The challenge is to develop programs which effectively implement the law's intent and principles without frustrating the best efforts of both government and industry.

That balance served as the guiding principle as the members of the NEDA Clean Water Project examined the Clean Water Act and developed the recommendations and rationales contained in this publication. NEDA's suggestions are aimed at reducing the paperwork burden on industry and government, eliminating the regulatory maze which slows economic development, and facilitating compliance with environmental goals. ■

Chairman Haun Brings Extensive Experience to NEDA/WATER

J. William Haun, chairman of the NEDA/Water Project, brings to the coalition a variety of experience in both environmental affairs and policy coordinating.

As Vice President, Engineering Policy and Corporate Energy Coordinator, General Mills, Inc., Haun advises senior management on environmental compliance and on energy and resource conservation.

He has been involved in environmental activities since the late 1960s when he joined the Environmental Quality Committee of the National Association of Manufacturers. He later served as chairman of the committee and was also elected to the NAM Board of Directors.

Haun has testified before Congress more than 30 times on environmental matters and he has participated in numerous meetings with members of the EPA, Commerce and State Departments, and the Council on Environmental Quality.

As part of the International Working Group that founded the International Centre for Industry and Environment in 1973, Haun served as the group's chairman for two years. The function of the organization was to supervise the United Nations' environment program. ■

ABOUT THE NEDA CLEAN WATER PROJECT:

Sponsor

The Clean Water Project is a special undertaking of the National Environmental Development Association, a coalition of industry, labor, agriculture and other interests founded in 1973 as an advocate of balanced economic, energy and environmental development.

Origin

NEDA/WATER is the result of a meeting in June 1981 of leaders of a number of companies and labor unions concerned about the effects of federal clean water regulations on industrial development. J. William Haun, Vice President, Engineering Policy and Corporate Energy Coordinator for General Mills, Inc., serves as Project Chairman.

Goal

NEDA/WATER is an established forum for considering problems related to the Clean Water Act, involving government, industrial, labor, and environmental interests. Functional goal of the Project is to achieve legislative and regulatory changes which will ease Clean Water Act uncertainties and restrictions of concern to industry and labor without harming the nation's waters.

Focus

NEDA/WATER, through its Steering Committee and Technical Committee, identifies problems and suggests legislative and regulatory aims. Areas being explored are related to source permitting and technological compliance requirements.

Activities

NEDA/WATER functions through its committees and members in a range of efforts aimed at improved understanding of the issues and full participation by all concerned in the problem-solving process. A state outreach program identifies, informs, and cooperates with interested state and local organizations. A regulatory agency program seeks opportunities to document problems in the federal regulatory framework and to seek useful alternative structures. A congressional relations program offers a resource of information and perspectives of specific value to individual members of Congress. A communications program produces publications, speeches, news media materials, and other information on Clean Water Act issues.

Members of NEDA Clean Water Project

AFL-CIO Building & Construction Trades Department
(Represented by Laborers' International Union of North America)
America)
Allied Corporation
Anheuser-Busch Companies, Inc.
Atlantic Richfield Company
Campbell Soup Company
Chevron U.S.A., Inc.
Consolidation Coal Company
Exxon Corporation
Florida Fruit & Vegetable Association
Florida Sugar Cane League, Inc.
General Electric Company
General Mills, Inc.
Getty Oil Company
Gulf Science and Technology Company
Kaiser Aluminum & Chemical Corporation
Occidental Petroleum Corporation
Pennzoil Company
Phillips Petroleum Company
PPG Industries, Inc.
The Procter & Gamble Company
Shell Oil Company
Standard Oil Company (Indiana)
The Standard Oil Company (Ohio)
Sun Company, Inc.
Tenneco, Inc.
Union Oil Company of California

Mr. ROE. Please proceed.

TESTIMONY OF WILLIAM HAUN, CHAIRMAN, NEDA CLEAN WATER PROJECT, AND VICE PRESIDENT, ENGINEERING POLICY, GENERAL MILLS, INC.; J. JEFFREY ZIMMERMAN, CHAIRMAN, NEDA/WATER'S TECHNICAL COMMITTEE, AND MANAGER, EXTERNAL AFFAIRS, HEALTH AND ENVIRONMENT, OCCIDENTAL PETROLEUM CORP.

Dr. HAUN. First I will say to you, Mr. Chairman, that I am accompanied by Mr. Jeff Zimmerman. Mr. Sheets had serious brain surgery about 5 or 6 weeks ago and is recuperating, but he just couldn't make the day here, and if you will permit me, I will summarize his statement.

Mr. ROE. If we keep this up, we are going to need the same treatment.

Dr. HAUN. If you will permit me, at the end of our presentation, I will summarize the Laborers' International statement.

Mr. ROE. Fine.

Dr. HAUN. I might say just before I begin the prepared remarks, I think that this committee deserves our thanks and appreciation for the way these hearings have been conducted and the patience that you have shown and your willingness to listen to all those who have something to say. This is not always our experience with committees of the Congress, and we want very much to thank you, Mr. Roe and Mr. Stangeland and members of your staff, for having set this up in this way.

Mr. ROE. Very fine.

Dr. HAUN. The NEDA clean water project is a coalition of industry, labor, agriculture and other interests seeking a balanced consideration of issues relating to the Clean Water Act. For your information, we have about 22 major corporations. We have the building trades department of the AFL-CIO and two agricultural organizations as the membership basically of our NEDA group. So that is the perspective from which we speak today.

Today we will present recommended changes to the act dealing with pretreatment, compliance deadlines, integrated facilities, permit life, de minimis exemptions, intermittent streams and construction grants. That could keep us all afternoon.

With your permission, we have submitted a prepared statement, and we would like to paraphrase and summarize the remainder of this statement.

We know you have received a tremendous amount of information in the past few weeks and rather than going into another treatise of information, we will briefly highlight our major concerns. Also we have tried to listen to the questions that you have been asking over the last couple of weeks at these hearings, and we are trying to incorporate some of those responses into the statement, itself.

Before we offer our recommendations for amendments to the act, I think we need to step back again and take a perspective look. This has already been suggested at today's hearings.

We need to focus our attention on where the problem is, and we have provided two charts which will be included with our formal statement, the first showing the present state of sources of major

pollutants in the country, from point sources, the dark part of those bars, and from nonpoint sources, the light gray portion of those bars.

That is 100 percent over the full size of the bar, and you can see in some cases that the point source category itself is quite small. That comes as no surprise to this committee.

The second chart, the lower one, chart B, we have taken the whole category of point sources, and we have isolated POTW's as opposed to nine major categories of industrial point sources and done the same sort of analysis. On this basis the POTW's then are the primary source of water pollutants in some classifications. In fact, the only one in which that is not necessarily true is dissolved heavy metals, and that is a problem which you have been addressing here rather rigorously this afternoon.

We bring this to the attention of the committee not to sidestep our responsibility as point source operators nor to point fingers of blame at others, but we think this perspective is important as the committee and Congress seek meaningful ways to increase the effectiveness of the Clean Water Act.

Basically, we are here today to offer recommendations which we think will speak to the act for clarification and simplification. That has been our objective since we formed the coalition nearly 3 years ago, and we are staying with that objective.

I would like to ask Mr. Jeffrey Zimmerman, who is chairman of the NEDA Technical Committee that has prepared most of the policy papers on which we have been operating, to give you a summary of our views on the major technical issues.

Mr. ZIMMERMAN. Mr. Chairman and members of the subcommittee, I would like to discuss a few of our recommendations for improvements in the act. I would like to concentrate this discussion on what I believe are the questions you have been asking during these hearings so far and try to give you our answers to some of those questions.

The first topic I would like to address is pretreatment. The NEDA water project supports pretreatment for industrial pollutants which are, one, not susceptible to treatment by POTW's and which, therefore, would pass into the water body untreated, two, interfere with the operation of treatment works or, three, interfere with the proper disposal of sludge. We do not take issue with the intent, but rather the implementation of the present pretreatment program and in particular the categorical standards.

Here is an example of the problems we face. Since 1981, an aluminum plant owned by one of our members has been discharging its waste into a local POTW. The waste contains a substantial amount of aluminum, in the form of soluble aluminum hydroxide.

The effect of this stream has been very closely studied. Not only has the discharged not had any negative effect on the POTW, it has actually improved the sludge settling and thickening performance. This has been achieved without any cost to the POTW.

Now under the Federal categorical pretreatment standards that aluminum plant will be required to remove the aluminum hydroxide from its waste before it sends it to the POTW. It will cost the plant a substantial amount of money and deprive the POTW of the treatment benefits it now obtains from that particular waste

stream. To get the treatment the POTW would have to buy the chemical and add it to its system.

Along with the categorical pretreatment standards program, Congress directed in 1977 that industry be given credit against the pretreatment requirements for pollutants that the POTW was capable of removing. You have already discussed to some extent the removal credits portion of the pretreatment program.

This simple, equitable, and efficiency-oriented notion has produced probably the major stumbling block in the implementation of the pretreatment program. The removal credits portion of EPA's regulations, in my opinion, defies comprehension. It occupies 11 double-columned, single-spaced pages of the Code of Federal Regulations just to state the formulas, conditions, and procedures and includes numerous cross-references to other sections and procedures that must be followed in order to make a removal credits application.

As you have heard, it is so burdensome that many local POTW's refuse to even consider trying to implement its provisions. You have to wonder whether this regulation was actually designed to prevent anyone from ever being able to satisfy its requirements. I would be happy to discuss, if you would like, some of the problems we see with the removal credits portions of the regulations.

We recommend that the act be changed to allow qualified local POTW's to establish their own pretreatment programs. We do not advocate scrapping the Federal program, although it certainly could be improved. That program would remain in effect unless the POTW successfully qualifies to implement its own program.

Let me quote, if I might, with your indulgence, some of the findings of this committee during its oversight and investigations hearings on the Clean Water Act some 2 or 3 years ago.

As stated by the Subcommittee on Oversight and Investigations, "It is obvious to the subcommittee, that a more reasonable approach for implementing a pretreatment program is absolutely necessary. The simple fact is that both the current and original approaches have not worked and are not likely to unless changes are made. The primary concern for the pretreatment program should be the quality of the water that is discharged into the municipal works.

"So long as a municipal treatment plant can meet its permit requirements, there is no rationale for Federal meddling in local decisions as to how this should be accomplished." That is what we are here to endorse.

How would we measure whether the results are at least as good as the Federal program? I think this is one of the questions you have been asking over these hearings. Well, we think there are several methods. One would be to measure the effluent at the end of the POTW pipe to see if it is as good as it would have been under the Federal program. Another is to measure against water quality standards in the receiving water and another is to study the effects of the effluent on biota in the receiving waters.

Under the Federal program, the only tests are those by the POTW to show compliance with its permit limits. The Federal pretreatment program simply requires that a company install technology necessary to meet the categorical standards. The program does

not measure the effects on the water body after such pretreatment and treatment by the POTW. Our recommended change goes a step beyond what the Federal Government would require.

Would such an approach reduce protection of human health is another very important question that I believe this committee has been asking. Not at all. In fact, the Federal program as it is now structured addresses control technology only, not the effect on the water body or human health. Our approach would take us a step closer to knowing these effects.

Let me shift now to the subject of compliance deadlines. It is generally understood that there is a serious problem in complying with the BAT and BCT compliance deadlines as set forth in the act. Simply stated, industry can't comply with requirements until it knows what those requirements are and has a reasonable time to translate numerical limits into installed and properly operating control equipment.

The present deadline and EPA schedule for promulgation of the BAT, BCT and pretreatment standards will not provide a reasonable time for most industries. We propose that dischargers be given 3 years to comply with BAT or BCT requirements after EPA issues the applicable final effluent guidelines.

Some proposals take this approach but also incorporate a closing date. However, the schedule of EPA for promulgating effluent guidelines has once again slipped and if July 1, 1987 is the deadline, there are already several industries which will have less than 36 months in which to comply with BAT, BCT and pretreatment standards.

If this committee is leaning in the direction of a fixed deadline, we urge you to set a reasonable period of time in which industry can comply with requirements or, once again, we will be back here asking for another extension.

A parallel problem is what we call integrated facilities. These are dischargers subject to more than one guideline, particularly those required to pretreat their waste. An example from our membership is a plant which contains six manufacturing buildings on 1800 acres. All the water is treated at one facility before it is sent to the POTW. In all, there are 60 regulated processes with over 30 miles of wastewater pipe and a flow of 6 to 7 million gallons per day.

This plant is subject to six pretreatment categories. Four have been promulgated, one has been proposed but not promulgated in final form, and one has yet to be proposed. Until all the standards are known, this plant will not be able to calculate what the ultimate limitations for its pretreatment system will be. In the meantime, the clock is ticking on those standards which have already been issued.

This same type of situation occurs to one degree or another for our membership in over 100 plants in 35 States. The solution is to set a single compliance deadline requiring integrated facilities to be in compliance with effluent guidelines or pretreatment standards within 3 years from the time the last applicable standard is promulgated.

The next area I would like to discuss is the permit program——

Mr. ROE. Will you hold on that point.

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What you are fundamentally saying is if we have multiple operations that are related to different guideline standards that what would be the common sense of putting in one system to do one thing and then when you get the new guidelines 6 months later, you put another set of equipment in, and so forth and so on; it doesn't give you a chance to plan and pretreat it. We may be able to do that and benefit from one element that is involved with the other.

So basically what you are saying is there is a facility that has a multiple effluent line, if you like, which is not all in the same category and guidelines that are just economically unsound. You put one system in it and you have to add another one later on for another set of guidelines. That is basically what you are saying?

Mr. ZIMMERMAN. That is right, Mr. Chairman.

The system is such that when EPA puts out these pretreatment standards, it has to look at the industry across the country, all of the various sources. Now we are seeing where you have an integrated facility, you may have the same pollutant in five different subcategories and you may have a different number come out of the national standards for each one of those five different categories for the same pollutant.

Dr. HAUN. It is not only poor public policy, Mr. Chairman, it is lousy engineering.

Mr. STANGELAND. I have a question that relates to that same thing. Yesterday this panel may have received the impression that industries which are integrated facilities have known what some of these pretreatment standards are and they have chosen not to do anything, claiming that they were special cases.

Do you have any comment on that?

Mr. ZIMMERMAN. Yes, I do. I anticipated that this might be asked. Neither of us here is an expert in the integrated facilities question, and I would suggest that we could provide you with a more detailed answer to that question in writing.

[The following was received from Dr. Haun:]

NEDA
CLEAN WATER PROJECT

National Environmental Development Association • 605 Fourteenth Street NW, Washington DC 20005 • 202 638-1230

J. WILLIAM HAUN, Project Chairman

January 17, 1984

The Honorable Robert A. Roe
Chairman
Water Resources Subcommittee
Committee on Public Works and Transportation
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On November 10, 1983 the NEDA Clean Water Project testified before the Water Resources Subcommittee and recommended a number of changes to the Clean Water Act that would make the Act more effective without weakening its substance and goals.

One of the issues addressed was "Integrated Facilities" -- a special problem of facilities that are subject to more than one categorical pretreatment standard. In our testimony we talked about the many problems of just one of our members' facilities where 6 pretreatment standards apply.

You asked for additional information with regard to the problems that integrated facilities face. Attached is that report.

The report makes these points:

- Integrated facilities are treated inequitably under the present law. The multiple deadlines which these facilities are subject to can result in the initial construction of a treatment plant which later is either inadequate, necessitating upgrading, or overdesigned, resulting in excess treatment capacity and wasted resources. Allowing these facilities to comply with these standards -- without altering the standards -- three years from the issuance of the last applicable guideline would solve the problem.

- The Combined Waste Stream Formula, which EPA holds out as the solution to this problem, is flawed and unworkable.

- The courts have taken away the last avenue of relief that had been open to integrated facilities whose discharges are fundamentally different from those studied by EPA. In 6 months, industrial users of POTWs will first become liable for

violations of pretreatment standards and will later be exposed to new liabilities each time the compliance date for a different categorical standard passes.

The point we want to emphasize is that integrated facilities do not need relief from pretreatment standards. Rather they need adequate time to plan, design, install, and start up treatment facilities after all the final pretreatment standards applicable to the plant are known.

If you should have any questions about this report, please do not hesitate to contact us. If possible we would request that this report be attached to the hearings formal record.

Thank you for your consideration.

Sincerely,

J. William Haun
Chairman

cc: Water Resources Subcommittee

JWH:bjl:0132W

Integrated Facilities Report
Prepared by the
National Environmental Development Association's
Clean Water Project
for the
Subcommittee on Water Resources
Committee on Public Works and Transportation

Need for a Legislative Amendment

NEDA/Water believes that facilities subject to 2 or more categorical pretreatment standards are not being dealt with equitably under the Clean Water Act and the current general and categorical pretreatment standards. Good faith attempts by industry to seek administrative relief from inequity have been rejected. There is no reason to believe that subsequent attempts to seek timely relief will succeed. The courts recently invalidated the one avenue of relief that had been available to dischargers whose facilities are fundamentally different from those studied by EPA in developing category-by-category standards. In 6 months, industrial users of Publicly Owned Treatment Works (POTWs) will first become liable for knowing and willful violations of categorical pretreatment standards, and will be exposed to new liabilities each time the compliance date arrives for a different categorical standard.

A legislative amendment is required because "integrated facilities" need the opportunity and time to plan, design, install, and start up treatment facilities after they see final standards for all of the categories affecting them. That opportunity and time is available for facilities that are much simpler. It stands to reason that more complex facilities should have at least equal opportunity under law.

Report Summary

"Integrated facilities" refers to those industrial plants that are subject to more than one categorical pretreatment standard. These facilities generally have one wastewater treatment plant for all wastes generated in the plant. It is this one treatment facility which will need to be modified in order to comply with upcoming pretreatment requirements. These facilities are not being dealt with equitably under the Clean Water Act. Plants which fall into one industry category are subject to only one pretreatment standard. For these plants, a company can plan, design, and install treatment facilities one time after the pretreatment standard is promulgated.

The current Clean Water Act requires integrated facilities to meet more than one deadline for compliance, since more than one pretreatment standard will apply to these facilities. The problem is the lag time between the issuing of EPA's various pretreatment standards. EPA issues pretreatment standards one at a time, and the

compliance clock runs separately for each one. Since the compliance clock starts running at the time the first applicable pretreatment standard is issued, inte- grated facilities are faced with having to plan, design, and construct pretreatment systems far in advance of knowing all the standards they will ultimately have to meet. In many cases, it is physically impossible for integrated facilities to comply with sequentially issued pretreatment standards. In addition, substantial amounts of money will be misspent if the pretreatment facilities have to be redesigned each time a new standard is promulgated.

The enclosed report gives an example of how a plant subject to both electroplating and metal finishing would be adversely affected. The plant must meet electroplating pretreatment standards by June 1984 by installing added wastewater treatment capacity. The electroplating standards will be superceded by metal finishing standards in February 1986 which will require a total treatment capacity 46 percent smaller than that required under the 1984 electroplating standards. The result is that when the metal finishing standards take effect in 1986, the company will be left with excess treatment capacity which had been installed in 1984 to meet electroplating standards.

A related but separate issue involves the the so-called Combined Waste Stream Formula (CWSF). EPA has taken the position that a legislative amendment is not necessary because the CWSF is universally applicable and workable for all integrated facilities. This formula in theory is designed to recognize that many industrial facilities combine their waste streams prior to sending them to a POTW.

However, the CWSF is not workable for many integrated facilities for two important reasons. First, it still requires all pretreatment standards to be promulgated so they can be used in the formula. For those facilities whose pretreatment standards are not promulgated or even proposed, the formula is useless. Second, EPA has not completed rulemaking and has not corrected past rulemakings on the CWSF. Even if all the pretreatment standards are known, there are a number of technical problems with the CWSF which remain to be resolved. The result is that the CWSF is unworkable because necessary inputs are not currently available and are not likely to be available in time to make it useful for integrated facilities. In the meantime, the compliance clock continues to tick.

The courts recently invalidated the one avenue of relief that had been available to dischargers whose facilities are fundamentally different from those studied by EPA in developing category-by-category standards and who could not use the CWSF. EPA in its rulemakings had viewed the so-called Fundamentally Different Factors (FDF) variance provision of the Clean Water Act as an integral part

of this regulatory program for integrated facilities under the pretreatment regulations. Facilities which could not make use of the combined waste stream formula could seek relief under the FDF variance mechanism.

As a result of the court ruling, in 6 months industrial users of POTWs will first become liable for knowing and willful violations of categorical pretreatment standards, and will be exposed to new liabilities each time a compliance deadline for a different categorical standard passes.

INTEGRATED FACILITIES REPORT
NEDA Clean Water Project

Effect of Sequentially-Issued Standards
On Cost-Effective Compliance

The issuance of categorical pretreatment standards with sequential compliance dates can create peculiar and disadvantageous situations for industrial users of POTWs. Such situations can waste resources and promote only trivial benefits to the environment.

Example A (attached) is a case in point. The facility, a real and major facility, must first comply with electroplating pretreatment standards in 6/84 and then with metal finishing pretreatment standards in 2/86. Oddly, EPA has decided that the electroplating category will be subsumed by the metal finishing category in 2/86, thereby establishing a commonality of wastewaters from the 2 categories that does not exist in the real world. The result is that under the current law with separate compliance deadlines, this facility will build a larger treatment plant than it would if the compliance deadline were combined.

The Combined Waste Stream Formula is not Workable
for a Large Portion of Industry

EPA has taken the position that a legislative amendment is not necessary because the Combined Waste Stream Formula (CWSF) is universally applicable and workable for all integrated facilities.

The formula, shown below, was developed in 1981 in recognition of the fact that many industrial users of POTWs combine their waste streams prior to sending them to a POTW. It was intended to enable the industrial user to calulate an "end-of-pipe" pretreatment standard when the facility was subject to 2 or more categorical pretreatment standards. The end-of-pipe standard would serve as the basis for designing and installing appropriate treatment.

The formula is not workable for a large number of integrated facilities because EPA has not completed new rulemaking and has not corrected past rulemaking that is no longer valid. Following are specific problems with this formula:

a. Pretreatment standards are not available for several industry categories because EPA has neither proposed nor promulgated them. Examples of standards yet to be issued are Metal Molding and Casting, Organic Chemicals & Plastics and Synthetics, Nonferrous Metals (both phases), Plastics Molding and Forming, and NonFerrous Metals Forming (Phase 2). The Agency will not issue all of these standards until some time

in 1985. So at the first instance, the formula is unworkable because not all the pretreatment standard inputs are known.

b. The point at which a waste stream becomes "regulated" has not been defined by EPA. Does a waste stream become regulated upon the date of promulgation or on the compliance date of the pretreatment standard? Until EPA defines a "regulated" stream the formula cannot be used.

c. The definition of flow rate for dilute streams, issued in 1981, is totally incorrect but has not been corrected by a regulatory amendment. That definition, included in the rules governing the CWSF (403.6(e)), references an Appendix D that EPA acknowledges to be useless. The definition must be known with certainty if the CWSF is to be of any value.

d. The definition of "unregulated" waste stream does not exist. Unregulated waste streams are an integral part of the formula and must be known with certainty if the CWSF is to be of any value. The difference between dilute streams and unregulated streams is critical because the ability of a discharger to comply is more sensitive to the dilute/unregulated designation than to the categorical standards. Example B (attached shows that such a distinction makes a difference between compliance and noncompliance with the law.)

Also, it is not clear whether a waste stream targeted for regulation but not yet regulated should be treated as part of an unregulated stream in the formula. Again, EPA has provided no guidance.

e. EPA has proposed to amend the general pretreatment regulations to make the distinction between dilute and unregulated streams somewhat discretionary (48 FR 46956, October 14, 1983). The formula cannot be used now until final action has been taken on that proposal. If dilute unregulated determinations are made discretionary, how can EPA retain the CWSF as a rigid formula?

f. Flow rate may not be available for many waste streams generated in a factory because of the piping configuration. It is impossible to measure (or even make a reasonable estimate) of the flow rate of a waste stream if the pipes conducting that stream are not accessible. This is a particular problem if the regulated streams are numerous and all have different pretreatment standards, as in the copper forming category (see Example C).

g. Some pretreatment standards are expressed in mass units and some in concentration units. EPA has issued no guidance on calculating an equivalent concentration limit using a single formula when the combined waste stream contains one or more of each type of standard.

In addition, we question whether the pretreatment standard for a production-based mass-limit stream changes each time the production level changes.

Conclusion

Total flow rate is the only item in the combined waste stream formula that to date has been defined in sufficient detail for use in a rigid compliance formula across the broad range of integrated facilities in industry. The current CWSF is unworkable because the necessary inputs are not yet available and are not likely to be in time to make it useful for integrated facilities.

EXAMPLE A

NON-COST-EFFECTIVE TREATMENT WITH MINIMAL BENEFIT TO THE ENVIRONMENT

One major facility generates both electroplating (EP) and metal finishing (MF) wastewaters, which are currently regulated under 2 different categorical pretreatment standards. The electroplating compliance deadline is 6/84 and the metal finishing compliance deadline is 2/86.

- Status

Currently, the manufacturing plant generates the following gallons per day of electroplating and metal finishing wastes. The plant does not yet meet electroplating pretreatment standards.

```
51,900 GPD (EP)---->|
                    |  Combined
                    |  Waste (CWS)
20,400 GPD (EP)---->|  Stream      ---------> To POTW
                    |  250,700 GPD
178,400 GPD (MF)--->|
```

- Planned to Meet 6/84 Electroplating Deadline

In order to meet the 6/84 electroplating pretreatment standard deadline, a new pretreatment plant with design capacity A is installed.

```
51,900 GPD (EP)---->[New Treatment Plant Capacity A]->|
                                                      |
20,400 GPD (EP)---->No Treatment Required->           |   CWS
                                                      |  250,700 GPD ---> To
178,400 GPD (MF)--->Not Yet Regulated--->             |                   POTW
```

- Projected Need to Meet 2/86 Deadline

The treatment plant constructed to meet electroplating standards in 6/84 would enable the facility to comply with 2/86 metal finishing pretreatment standards. However, a treatment plant of design capacity B would be adequate. Design capacity B would be approximately half the size of capacity A (the treatment plant already installed to comply with electroplating requirements). The result is that in 1986, the facility will have unneeded, surplus treatment capacity due to the sequential deadline imposed under the current law.

```
27,900 GPD (MF)*--->[Treatment Plant Capacity B]--->|
                                                    |-> 51,900
24,000 GPD (MP)*--->No Treatment Required--->       |    GPD
                                                    |     |
                                                    |     v
20,400 GPD (MP)*--->No Treatment Required--->       |   CWS
                                                    |  250,700 GPD ---> To
178,400 GPD (MP)--->No Treatment Required--->       |                   POTW
```

* EP wastewater becomes MF wastewater in 2/86

GPD = Gallons Per Day
EP = Electroplating waste stream
MF = Metal finishing waste stream
CWS = Combined waste stream

Net Impact

Because of the sequential compliance dates and the nature of the waste streams eventually co-regulated under the Metal Finishing Category, this facility is being forced to install a treatment plant that:

- Will require an initial investment 52 percent greater than necessary to meet its long-range treatment needs.
- Will have 46 percent excess capacity (after 2/86) for the rest of its useful life.
- Will cost significantly more to maintain and operate because of its size.
- Will remove only an incremental 12 oz. of regulated metals per day from the waste wastewater discharged to the POTW. (After incidental removal by the POTW treatment plant, the incremental discharge of metals to surface waters will be negligible.)

EXAMPLE B

EFFECT OF DESIGNATING WASTEWATERS THAT ARE NOT REGULATED AS "DILUTE" VS. "UNREGULATED"

Following is an example of how designating a waste stream either "dilute" or "unregulated" affects compliance. The example compares zinc concentrations under each approach. A facility discharges a combined waste stream to a POTW that consists of porcelain enameling wastewater and a waste stream not scheduled for regulation under a categorical pretreatment standard. The flow rates are:

Porcelain Enameling Wastewater 50,000 Gal./Day	→	70,000 Gal./Day Combined Stream To POTW (A)	(Actual Zinc Concentration is 0.51 mg/l)
Other Wastewater Stream 20,000 Gal./Day	→		

- What is the compliance limit for zinc at Point A if the other wastewater stream is designated "unregulated"?

$$C_E = (0.56)\left(\frac{70{,}000 - 0}{70{,}000}\right) = 0.56 \text{ MG/L}$$ (facility in compliance)

- What is the compliance limit for zinc at Point A if the other wastewater stream is considered "dilute"?

$$C_E = (0.56)\left(\frac{70{,}000 - 20{,}000}{70{,}000}\right) = 0.40 \text{ MG/L}$$ (facility not in compliance)

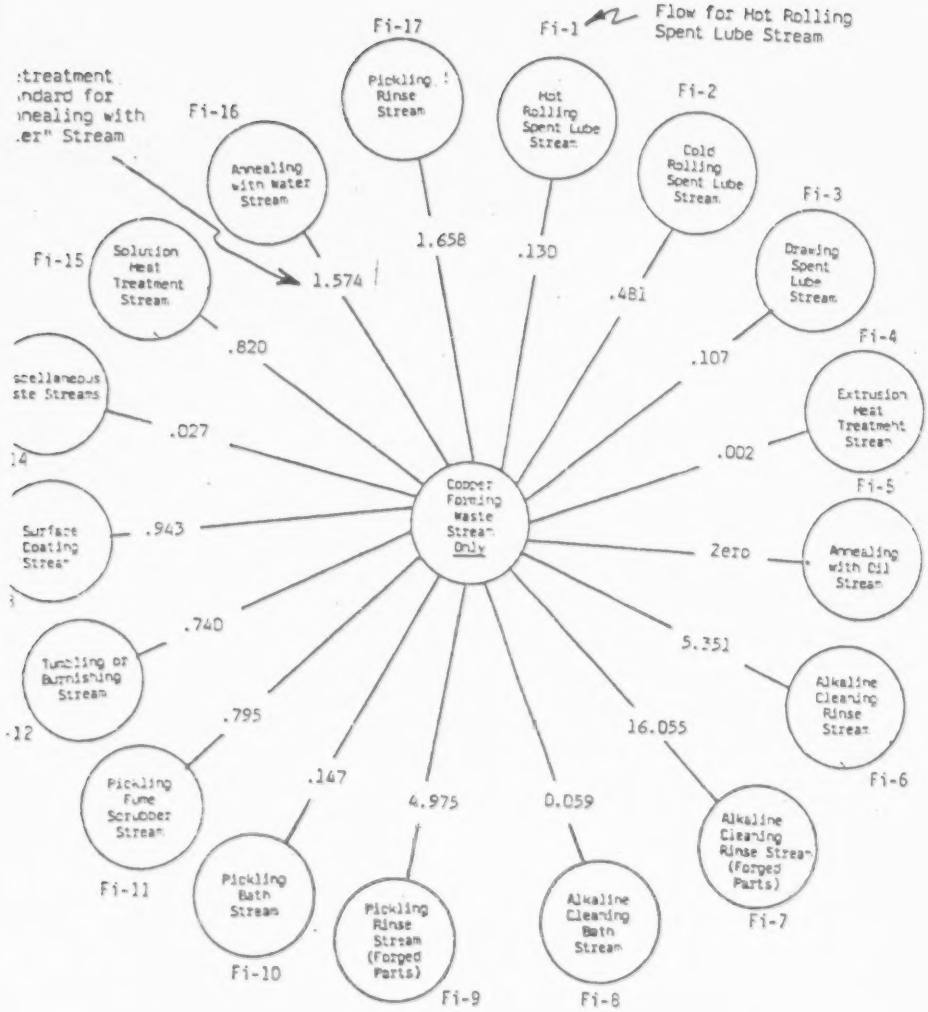
Conclusion

Designating a non-regulated waste stream as "dilute" instead of "unregulated" can make the facility noncompliant, even though the categorical standard applicable to the regulated stream and the actual concentration in the combined waste stream do not change.

NEDA/Water:0121W

EXAMPLE C

COPPER FORMING CATEGORY



17 waste streams that must be accessible and measurable to enable a copper forming facility to assess compliance with just one categorical pretreatment standard. An integrated copper forming facility would also have to measure many other regulated streams from other categories and calculate a pretreatment standard for the combined waste stream. This is done for each

Mr. ZIMMERMAN. But from what I understand of the testimony yesterday, the impression may have been given that some companies knew about the electroplating standards and were simply sitting there willfully ignoring the standards. I want to make it clear that the particular company that was referred to yesterday, General Motors, is not a member of our coalition. So as far as we know, our members will not have any problem meeting the electroplating standards.

But to get back to the point of whether industry was ignoring a standard when they knew it was out there, the events, the chronology of events, does not bear that out. The electroplating standards in question, the BAT and pretreatment standards, were promulgated at the end of 1980 or the beginning of 1981, somewhere in that timeframe, and they were then stayed by the administration because there was substantial question as to whether there was any good basis for them.

In particular, it stayed critical parts of the regulation, such as the removal credits portion, the combined waste stream formula, the definition of passthrough and the definition of interference, indefinitely while it was going through a rulemaking process on those particular parts of the regulation.

Now that decision was challenged by NRDC, and in July 1982, the court ruled that the agency had followed improper procedures in staying those portions of the regulation and directed that it be instituted retroactively to the point in time when they were stayed. That sort of put industry in a bad situation. They had lost 15 to 18 months from the time period to comply with the standards.

But the court also in that ruling allowed EPA to go forward and look at the substance of the regulations and decide whether there was a problem with the removal credits, et cetera, and make some proposed regulations on that. The agency did that, proposing last September revisions to the removal credits portion of the regulations, and I believe in October to the combined waste stream formula.

There has been a substantial amount of comment on those two proposals. There are severe defects with the removal credits proposal as you heard Mr. Schwartz addressing in quite accurate terms a few moments ago, and it is our understanding, although we haven't seen this finally, that EPA is probably going to drop the revision of the removal credits formula. That is perhaps unfortunate, but it is indicative of the problems in the removal credits formula that they can't seem to be able to figure out how to implement a national removal credits program even for a very limited set of nine pollutants, which is far from the total number of pollutants that they need to address in terms of removal credits.

Dr. HAUN. They have given us reason to believe that they are still struggling with the combined waste formula even though the court said the one they have is not arbitrary and capricious, but EPA said yes, but it is not sound technically either.

So they are still giving signals that they are working on this problem.

Mr. ZIMMERMAN. Now, what happened at that point in time, about this time last year, is the monitoring portions of the categorical pretreatment standards, the removal credits and the combined

waste treatment formula started to go into effect and industry started to collect the monitoring data, to make the submissions by June of 1983.

When GM made those submissions, they found the majority of their plants, the vast majority were already going to meet the standard—but 27 would not meet the standard, so they applied under the provisions that were then in effect for an FDF variance for those 27 plants in very detailed applications.

Now, 6 weeks ago or so, the third circuit ruled that the FDF variance EPA had in the regulations was illegal. So, GM was stuck with not having any place to go.

It could not use the FDF variance provision. Right now they are in a situation where some of their plants, as I understand it, may not be able to meet the standards by the deadline of 1984.

The second part that I would like to address is that you may have been left with the impression that the combined waste stream formula has been around for a long time, and that it is stable, and that there is no problem with it, by the testimony that you heard yesterday.

Well, it has undergone substantial changes. It has been proposed for revision. Further, that it is not quite as long as the removal credits portion of the regulation simply because they put in a lot of formulas in it.

It is, in my judgment about equally incomprehensible. The biggest problem we see with it, although you can, I suppose, run the calculations, is you have to know what all the pretreatment standards are going to be before you can make the calculations.

And with a lot of categories, you don't know at this time, what the pretreatment requirements are going to be. So, if you are an integrated facility where four of your standards are out there and two or three of them haven't been promulgated yet, you can't make the combined waste stream calculations. So you don't know what kind of treatment you are going to have to design.

We have also heard that there are substantial concerns about the compliance aspects of the combined waste stream formula. It is so difficult to run the formula and so uncertain as to what standard you get, that you are not going to be able to use it as an enforcement or compliance assurance mechanism.

If there are other questions on that portion of this discussion, I will be happy to answer them.

Let me go on with a few points briefly on the permit program. As you know, there are thousands of permits that are in a backlog situation. We understand the number is around 30,000 that have not been issued. Many organizations have testified that one effective means of rectifying the situation would be to change the permits from 5 years to 10 years.

This recommendation for 10-year permits is supported by the NEDA water project, but it has also raised issues of reopeners. We support the reopener provision in the current regulations. Beyond such provisions, if the EPA is concerned about the effect of changing cleanup requirements and its ability to reopen the conditions of the permit, it has the option to either issue the permit for a

shorter period of time or to propose changes to its reopener regulations. We urge you to extend the maximum permit life up to 10 years.

A closely related matter for us is the subject of de minimus exemptions to the permit program. The majority of the permits are for minor discharges. One illustration that we have is a case where a company's drinking fountain, because of its location, drains its overflow into a receiving water body.

That drinking fountain, believe it or not, requires an NPDES permit and there is no provision under which it can be exempted or otherwise permitted. The EPA Administrator should be allowed to exempt certain de minimus point sources and channeled storm water runoff which contains de minimus quantities of pollutants from the NPDES permit procedure.

The last point I would like to address is the subject of intermittent streams. In their water quality standards programs, many States have automatically extended the application of these standards beyond the point where the stream becomes intermittent.

In other words, to the point where there is no aquatic ecosystem present, because there is no continuous flow. This has been done without looking at the streams to find out whether there is something there to protect with the water quality standards. It will require facilities to install additional water pollution controls beyond BAT requirements on discharges into these dry streambeds where the effluent is the sole source of the streamflow.

Application of such control technologies is in many cases unnecessary because there is no ecosystem to protect, and therefore, we think it is a needless expense. Water quality standards, in our opinion, should only be applied to intermittent streams in cases where the Administrator or State determines it is necessary to protect aquatic life in the perennial stream or where the discharge from the point source has extended the stretch of the perennial stream so as to extend the ecosystem up to the point of discharge.

In those instances, we believe the water quality standards are properly applied, because you have an ecosystem to protect.

At this point, I would like to pass the microphone back to Dr. Haun to summarize the remarks Mr. Sheets would have made had he been able to be here.

Dr. HAUN. I have the honor to summarize the statement of Mr. Sheets of the Laborers' International Union, who, incidentally, Mr. Chairman, is my cochairman of the steering committee of this project, and has been a very active participant throughout.

As pointed out earlier in the testimony, one of the largest single sources of pollution in the country are municipal treatment plants. You have had testimony to the fact that many municipalities are not in compliance.

EPA estimates that by the year 2000, there will be a need for $118 billion for the construction of wastewater treatment plants. And the programs and congressional activities have only made a small dent in their entire program.

The inability of municipalities to meet their pollution control ob-

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ligations creates very serious problems, not only with regard to the environment, but with regard to an area's economic health.

You have heard from others that nearly half of the Nation's communities are unable to add additional homes or businesses onto their sewage treatment systems, because they are already operating at full capacity. If a production facility is prohibited from locating in a particular site or expanding an existing facility because of inadequate municipal sewage treatment, municipalities could suffer the economic hardship of losing a major source of new jobs and tax revenues.

If, in order to offset pollution from municipal discharges, a producer is required to use more expensive controls to balance the effect of municipal waste, he might be forced to look for another site where pollution costs are more equitably shared.

Only adequate funding and legislative and program reforms will insure that dollars are spent productively to control the Nation's water pollution problems.

Reduction in funding to $2.4 billion a year doesn't mean the overall cost of municipal cleanup has gone down. In fact, if the reduction in funding has slowed the progress of the program, which is likely, the overall costs of the program is likely to rise as the stalled projects are hit with inflation.

Over the past few weeks, you have heard a variety of opinions about what to do about this problem. Opinions range from increasing Federal grants to allowing municipalities to develop their own source of funds.

There are innovative suggestions, such as privatization of POTW's, allowing Federal grants to be used for low-interest loans. We can't pass judgment on many of these suggestions.

Any or all of them may be workable. However, today we are faced with an ever-increasing need to get these plants up and running. The most immediate vehicle for getting funds in the hands of municipalities is the existing construction grants program.

Consequently, we support increased funding for this program. That concludes our summary, Mr. Chairman. We would be happy to answer whatever questions the committee would have.

Mr. ROE. I don't think the question that I would like to ask, I dare ask. Well, doesn't it boil down to the point of view, of course, a lot of the testimony is redundant, not your testimony, it is the implementation.

Congress writes the framework and they write the guidelines, what they are trying to achieve. In between, that is a body of decisionmakers, whatever. They pass that information to the people who have to implement them.

It seems to me that no matter how many times we have made midcourse corrections, most of them are disastrous, but the timeframe of putting into clear, concise direction what is to be done and charging those who are to implement, whether it be the public agencies or the private sector, it just, they haven't met the guidelines.

In candor, it is a fact. I don't know how, in God's name, you could sit and figure out what you are going to do with multistream waste, multiwaste stream, if you have only got part of the guide-

lines, then you have a deadline to do something by a date certain, which just doesn't fundamentally make any sense.

Dr. HAUN. Mr. Chairman?

Mr. ROE. When you look at the bill, some of the bills that are being projects, they are looking for post-BAT and we haven't even got pre-BAT done.

Is that unreasonable to say?

Mr. ZIMMERMAN. I think you have summarized it very well, Mr. Chairman. Sometimes, about every time I look into this situation, I feel like a rat who has been dropped into an interminable maze. At each point, every time I go around a corner, there is a black hole I can fall into or there is a brick wall.

Mr. ROE. Let me develop that further.

I think that what the committees have been attempting to do, was to say, well, OK, big government is in the way.

What we ought to be doing is let a lot more of these decisions be made at the local level. And therefore, you would have a much closer relationship to the people that were in the decisionmaking pattern, and they can make the decision better.

Except then they pull the rug out from under them, and take all the money away and say we will set the guidelines. We will set what broad achievements are supposed to be. But the local people will have to provide the funds to get it done, otherwise go to jail.

I don't mean to be facetious, but basically that is what is happening. It seems to me, do you think the local governing bodies and States could do a better job of getting the job done.

Mr. ZIMMERMAN. Well, in the pretreatment area, I think that is a very good point, and a point I should emphasize here is that in many instances, the local POTW's have very strong local pretreatment programs. Those are being met or we are on the way to meeting those.

That is where the control ought to be. But to try to get everybody to fit into these national uniform boxes and make commitments without funds, as you point out, to eliminate their combined sewer overflows when they have no money and no manpower to do that, to begin building POTW's and pretreatment plants when you don't know what the standards are in order for you to be able to apply for a credit to avoid having to apply the categorical pretreatment standards that you would ultimately have to apply, you have got to wonder whether anybody really wants us to implement an effective, combined stream treatment of industry, pretreating, and POTW's doing ultimate treatment.

The direct discharge is a lot easier in many instances for industry to meet. It is simple. You tell me a number. My engineering people can tell you whether we can meet it, tell you how long it is going to take us to get the designs done, the material installed and get it to work properly.

But when I have to be thrown into the abyss of the regulations on pretreatment, and I have got a moving target to shoot at, I don't know for what I am supposed to engineer.

Dr. HAUN. Mr. Chairman, may I comment just a few minutes on that?

Mr. ROE. Of course, Doctor.

Mr. HAUN. It seems to me that there is a tremendous lack of trust throughout these programs, of course. That has been a sort of given. I sat before you, among others, in 1971 and we talked about this.

Mr. ROE. I remembered you. You don't look any older than I do.

Dr. HAUN. But we tend to forget that from a municipal standpoint, wastewater treatment is a much older, much better established activity than, say, air pollution control or RCRA or any of these other new regulatory programs.

Our cities have been working at treating their wastewater for 100 years. We started training qualified sanitary engineers to work for municipalities in the early part of this century.

Most cities, at least large cities, now it is not true of small communities, but the large cities have very effective professional staffs. They know what they are doing and they know their systems extremely well, better than anybody in Washington will ever know it.

And so, if you look, at the Chicago ordinance, it is a model for the world. I have personally taken that ordinance to European countries and other places to illustrate that this is the way you can write a sewer ordinance that accomplishes the purposes and, at the same time, spreads the costs where they belong, and gets the job done.

Under the present situation, you have already heard, Chicago says we don't want any part of this program. If you want to put that on us, you do it. We don't want any part of it. That is symptomatic, I think, of what the difficulty is.

If you could name the 25 or 30 other major sewage treatment plants in the country, you would find the same level of professional skill and ability to run a program.

I think you do need a Federal program for maybe some of the small communities on the Red River in the north, for example, to give them advice and counsel and watch over them and show them how to run their plant.

Mr. ROE. Let's deal with that. What do we say to the city of New York, when they are dumping 4 or 5 hundred million gallons a day, and a goodly portion being raw material, in the Hudson and East Rivers, and so forth.

What do I say to the people?

For example, I try to get across to EPA 100 times, and to Members of Congress, there is no point in requiring pretreatment to Mr. Ranno, when he testified, to the plating industry in the city of Paterson, which is the oldest industrial city in America, if you are not going to correct the combined sewer issue.

It is just wasting of money. Now, there is one valuable thing that has come out of these hearings above and beyond the emotions and people griping and finding fault. And I don't fault them. That is what we are here for.

We are a forum.

Dr. HAUN. Sure.

Mr. ROE. But one thing that has come out of this that is a sticking point to me, the first time, is the order of magnitude of the re-

lated problems in the nonpoint source issue. And I think that that is a point that has to be developed in the public conscience.

But unless we deal with the other issues, we then are now at a point of wasting tax money. I am pleased to say the environmental organizations have listed that in their testimony almost completely, and said one thing that is not included in all the proposals presented, all the easy solutions to terribly frightfully complicated, technical issues, is that issue.

Then it seems to me, if we start to use that as the foundation and say, well, if we are going to do the next quantum jump, then we have got to deal with that relationship.

And where do we spend the money, where do we make our priority? Does that make sense to you?

Dr. HAUN. It is too complicated a question, I think right now, Mr. Chairman. I had a student at Clemson University write me a letter 2 or 3 weeks ago, starting a research program at the master's level on nonpoint source solutions.

She was asking for suggestions as to where she could go to get information to get started in this very complicated field.

I wrote her back and said the one thing I think she has to keep in mind and watch for is that every time one of these great regulatory programs gets close to the point where it touches the lives of millions of citizens, the administrators tend to draw back.

You have seen that in the Clean Air Act, transportation controls, where these programs, if taken literally, require you to begin to take control of it on behalf of millions of individual citizens.

This country isn't constructed that way. We don't have the means to do that. We have to find some way to solve the nonpoint source thing. We have got to get people to do this right, because they are right. Not because they are required by the law or because somebody in Washington says that is what they are supposed to do.

I personally think, and this is not only a NEDA statement at this point, that we have in place in principle, one of the greatest mechanisms for this in the world, for this, in the agricultural sector, and that is the agricultural extension system. It is the greatest technology transfer system that has been devised in the history of the world.

And they do a great job. If they could be convinced that they could find the funds and way to approach their people, I think you could begin to make a dent in the agricultural part of nonpoint.

On the urban part, that is another issue. As long as city managers can sit with people like me who want to come to their town and say, yes, my sewer system is overloaded, but I am not going to do anything about it until Washington gives me a grant, you know, and that is where it is left.

Mr. ROE. But if the gentleman would yield, you have got considerable experience, too. Don't forget, we are taking an extra few minutes, but it is worth it now. What you say is true. But this committee, people sitting here plus those on the floor and doing 10,000 other things they have to do in a day, it really isn't Washington speaking to the people in that sense, where Washington is controlling as some kind of a figment floating in the air, although I use

the same analogy when I speak of EPA and the bureaucracy myself.

We go back every day, practically, weekend, certainly, and we have to talk to the people who elect us. There are only 435 people who represent 220 million. But I am trying, hopefully we can hammer out this time. It would be very easy for this committee, as is wont in some instances to just take the public issue and say OK, fine.

We voted it out the best we can. Hear the philosophical things, and you guys go work out the details. But this committee has intensively studied this issue for years, as you know, based upon the point of view how will we make it work?

Then we come back and say, we don't want to change behavioral patterns. But we do know one thing, I think you would agree with this, unless we do something on the modern materials being converted into materials never known to mankind before, that are like a million times more lethal than what would have been found 100 years ago, when we started this sewer system, that is what we are doing.

When we get concerned about pretreatment, what are we going to do with mountains and hundreds of millions of tons of sludge?

Dr. HAUN. Right.

Mr. ROE. Many members have a bill going in now dumping it 130 miles out to sea. The other guy says we have the west coast. The east coast, the Continental Shelf, what do you do? Well, we know, in New Jersey, the second largest part of our economy is the tourist industry.

The more we defile, and they are now those beaches and so forth, we are losing out.

Dr. HAUN. Sure.

Mr. ROE. So I wonder what the citizen starts to think about. When we talk about $2.4 billion against a $200 billion deficit, a trillion-dollar economy, that is the saddest thing of all.

Dr. HAUN. Yes, on the other hand, if you compare it with some other decisions of choice, like, for example, the highway trust fund, which is in itself inadequate, but nonetheless a pretty big number compared to sewage treatment grants program, there is an infrastructure decision that has been made on a relative basis.

I don't know what—obviously, that is why you gentlemen were elected. I am relieved you have been elected.

Mr. ROE. We are going to fund at the level of $2.4 billion a year with $119 billion what we call, a program that is behind, there is no way we are going to solve the water pollution problems in the country. Is that a fair statement to make?

Dr. HAUN. I think it is a fair statement. I think the small businessmen of the country are going to be in very severe shape if we don't get municipal POTW's built.

Mr. ROE. We want to thank you very much for your patience and indulgence. Your testimony has been splendid. We appreciate it.

So, we have concluded our program for the day. This part of the

program for the day having to do with water pollution. Now, in the meantime, we will meet again next Tuesday at 9:30. Thank you very much, ladies and gentlemen.

[Whereupon, at 4:30 p.m., the subcommittee recessed, to reconvene at 9:30 a.m., Tuesday, November 15, 1983.].

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

TUESDAY, NOVEMBER 15, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to call, at 9:30 a.m., in room 2247, Rayburn House Office Building, Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. The subcommittee will come to order in continuation of our Clean Water Act hearings.

We want to welcome as our first witness the Honorable Robert J. Mrazek from New York, our distinguished colleague. We thank you for being our opening witness this morning. We have your testimony. I know of your strong interest and hard work in the area of clean water as far as our Nation is concerned. We applaud you and appreciate your efforts on behalf of the Congress and committee.

For a welcome, I would also defer to the distinguished gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman. Today begins our final week of hearings on possible amendments to the Federal Water Pollution Control Act. We have already received extensive and knowledgeable testimony. While I don't say the best has been saved for last, there certainly is before us today an impressive series of witnesses. Today we have the opportunity to hear from representatives of both State and municipal water pollution control agencies as well as the Assistant Secretary of the Army, Mr. Gianelli, and the new Administrator of EPA, Mr. Ruckelshaus. Their efforts to maintain and improve the Nation's environment and well-being are fundamental to the entire quality of life we enjoy in this Nation.

There are many complex issues before us in the clean water area, including nonpoint source pollution, industrial pretreatment, dredge and fill permits, and water quality standards, just to name a few. While there are different views of how best to address these and other matters, it must always be kept in mind that we are all seeking the same goal, the maintenance and improvement of the quality of life in these United States.

The information we will receive from today's hearing, coupled with the other 12 days previously, will go a long way toward providing the framework within which a workable set of amendments can be developed. I look forward with you, Mr. Chairman, and the

other members of the subcommittee not only to receiving the testimony but to working together to fashion the best possible legislation in the tradition of the subcommittee.

Mr. ROE. Splendid. Now, if our colleague would proceed.

The full text your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF HON. ROBERT J. MRAZEK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK, BEFORE THE WATER RESOURCES SUBCOMMITTEE OF THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION REGARDING PROPOSED CHANGES IN SECTION 404 OF THE CLEAN WATER ACT

Mr. Chairman, I would like to thank you and the other members of the subcommittee for allowing me to testify this morning. As a Member of Congress, I represent the north shore of Long Island, including a truly beautiful shoreline and many other valuable wetlands. It is therefore a special privilege for me to address my colleagues in regard to the protection of wetlands by section 404 of the Clean Water Act.

My interest in, and concern for the preservation of our Nation's wetlands does not stem from many years of experience as a Congressman. Quite to the contrary, I wouldn't think of matching my 10 months seniority with the many years of hard work, knowledge, and accomplishment of Chairman Bob Roe and my other distinguished friends who serve on this panel. Rather, I speak as a native Long Islander deeply concerned about our fragile environment. I feel compelled to speak up on the subject of wetlands preservation because of the extraordinary importance of Long Island's Bays and Harbors, its marshes, inland waterways, and coastal wetlands, to the quality of life of the people I represent.

For the vast majority of the residents of Long Island, careful regulation of dredge or fill activity in our waters is not a bothersome extension of federal authority, but a welcome control over commercial and residential development which might otherwise spoil much of the beauty, as well as many of the commercial and recreational benefits which 2½ million Long Islanders enjoy.

Section 404 regulation of dredge or fill activity is an essential tool in protecting water quality and groundwater recharge, both vital to Long Island's social and economic health and well-being. Long Island shellfish, Long Island duck, tourists who vacation at our resorts, along with the 2½ million residents rely on the physical, chemical, and biological integrity of our waters. Dredge or fill projects, which sometimes involve heavy metal concentrations, or toxic chemical deposits, must be governed effectively if the social and economic quality of life is to be maintained in the communities I represent on Long Island.

Before presenting my own proposals with regard to section 404, I would add my strong support to H.R. 3282, the Water Quality Renewal Act of 1983, introduced by Chairman Howard. With or without the additional amendments which I am proposing, the Howard bill reaffirms and strengthens our Nation's commitment to wetland preservation. Passage of H.R. 3282 will provide essential revision to those ambiguous provisions of the section 404 program, which have been used by the current administration to undermine some of the safeguards provided by Congress.

H.R. 3282 amends section 404 to reverse recent damaging regulatory changes and prevents future administrative weakening of the act. The Howard bill astutely keeps the burden of proof on the applicant by prohibiting the Corps from issuing any dredge or fill permit unless it determines that development will not have an unacceptably adverse effect on the aquatic environment and that there is no practicable alternative to the project which will have a less adverse effect.

Furthermore, H.R. 3282 would make interagency review of permits once again meaningful and equitable by reinstating the procedure that requires the Corps to allow the Environmental Protection Agency [EPA], Fish and Wildlife Service and other natural resource agencies to request further evaluation of controversial permits. Most importantly, Mr. Howard's bill removes the authority from the Assistant Secretary of the Army for Civil Works to veto requests by these agencies for referral of permit applications to a higher level of authority for review within the Corps. For these and other reasons, I appreciate and support Chairman Howard's bill reauthorizing the Clean Water Act.

Last week, Chairman Roe suggested that we take a "more gutsy and comprehensive approach" to the protection of wetlands. He correctly pointed out that to date, proposals regarding wetland protection simply seek to perfect the existing permit

program, without seeking to address the larger issue of promoting preservation. The chairman raised the possibility of providing financial incentives which would remove the profit motive in hapless or indiscriminate development of wetland areas. I applaud such insightful comments and I look forward to working with the subcommittee in breaking new ground and exploring new ways to preserve our precious natural resources. However, I am offering legislation which changes section 404 in ways which I admit does not break new ground. I am proposing changes which are consistent with the intent of Congress in establishing Section 404. These changes would complement rather than supplant Chairman Howard's bill.

The bill that I am introducing this week consists of three parts.

First, my bill would amend section 404(b) of the act to affirm the fundamental standards for environmental protection contained in the EPA guidelines issued in December 1980. Specifically, my amendment would expressly prohibit the establishment of a disposal site unless it can be demonstrated that the discharge of dredged or fill material at such site does not contain toxic pollutants, as other than "trace contaminants".

The term "toxic pollutants" includes, but is not limited to, the contaminants referred to in section 307(a)(1) of the Clean Water Act. These "toxic pollutants" are listed in table 1 of Committee Print numbered 95-30 of the Committee on Public Works and Transportation of the House of Representatives. This list is subject to revisions by the Administrator of the Environmental Protection Agency as authorized in the same section.

This amendment does not place an unreasonable burden on the applicant if there is no reasonable likelihood of a site being contaminated. Testing for toxic pollutants would only be required as part of the permit review process, if it cannot be determined with reasonable assurance that the discharge does not contain contaminants. This would be based on existing preliminary screening criteria in Section 230.50 B of the 404 guidelines.

As in the Howard bill, disposal sites would not be allowed in cases of adverse impact on the aquatic environment or in cases where a practicable (meaning among other things economic) alternative exists, which would have less adverse an effect. In addition, the provisions of my amendment expressly endorse and direct the continued application of the so called "water dependency" test. This guarantees that a search for practicable alternatives will be made prior to any discharge into a wetland. For example, construction of a marina must be completed adjacent to a body of water and is thus a "water dependent" project, whereas development of a shopping mall is not necessarily "water dependent". Incidentally, this allows for the possibility that social and economic conditions would justify a waterfront shopping mall.

The second part of my bill makes two changes in section 404(c). Currently, the EPA reviews whether or not a general or individual permit meets the criteria established by the program. The law requires the EPA to set the applicable standards for such permits as well as authorizing a review. The Agency is also given a veto power over such permits, but it does not require the EPA to impose its own rules!

Clearly, the intention of Congress in establishing section 404(c) was to give the EPA oversight responsibility to insure against adverse environmental effects from discharge of dredged or fill material in a wetland. The EPA is authorized to set guidelines, review each permit, and veto permits which don't comply. The EPA is also given authority to prohibit or limit the discharge of material in a wetland area where such activity would clearly have an unacceptably adverse affect on municipal water supplies, shellfish beds, fisheries, wildlife, or recreational areas.

However, the agency has been unable or unwilling to follow through and implement its own standards. Of the more than 100,000 permit applications processed since 1972, the EPA has only used its veto power once. My amendment makes it clear that the EPA must review permit applications as something more than a comment agency. The EPA would be required to block permits which do not meet the established specifications. There is no good reason why section 404 should have the EPA construct a system of standards and not be charged with the responsibility to implement them.

Again, I must emphasize that this change does not grant the EPA authority which it does not already have.

In comments on two of the July 22, 1982, nationwide permits issued, one allowing dredge or fill activities above headwaters and the other permitting activity to take place in isolated lakes and wetlands, the EPA objected on the basis that they were illegal violating section 404 E. Nevertheless, the EPA refused to use its veto authority. Why establish a system of rules if, as in this case, they are left unenforced?

It should also be noted that, if we are concerned about safeguarding sensitive wetlands from any intrusive actions, the amendment I am proposing would provide an excellent mechanism to secure this type of protection. If a wetland were targeted as a site for dredge or fill activities, the EPA would be required to veto specification of that site for any and all activities, assuming that such specification would have an unacceptably adverse impact on the environment.

Under the legislation I am introducing, the EPA would also be required to review petitions for exercise of its authority to limit or prohibit discharge in specified areas. While my bill would allow outside parties to petition, it also provides for a timely decision as to whether substantial information is offered. In this way, frivolous petitions would not be allowed to significantly delay processing of a permit. Only in cases where substantial information is provided with respect to municipal water supplies, shellfish beds, fisheries, wildlife, or recreational areas, would the petition process lead to formal consideration. A similar petition process involving substantial information was included as part of section 4 of the 1982 amendments to the Endangered Species Act. A strict time frame would also govern a decision on the merits of a petition containing substantial information.

This provision would allow interested and knowledegable parties such as municipal governments, a constructive way to provide new information to the EPA and prompt consideration when appropriate. If we are truly interested in enforcing realistic standards for protection of wetlands, the additional information provided in this way should assist the EPA in meeting its responsibilities.

The third and last amendment which I am proposing corrects what may well have been an oversight in section 505. This section of the Clean Water Act currently provides that any citizen may commence a civil action on his own behalf against the Administrator of the EPA regarding the enforcement of the Clean Water Act. This amendment would simply provide citizens with the very same right to judicial review with respect to the Army Corps implementation of section 404. The courts have already accepted cases involving section 404 and the Corps, but invariably such cases are delayed by the ambiguous right of parties to sue. Here again, I don't propose that we break any new ground, only that we make explicit what now is implied.

Mr. Chairman, members of the subcommittee, I offer these amendments to section 404 as constructive suggestions to improve implementation of this important program. Thank you for the chance to address this matter.

Mr. ROE. Please proceed.

TESTIMONY OF HON. ROBERT J. MRAZEK, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. MRAZEK. Thank you very much, Mr. Chairman. I would like to thank you for allowing me to testify this morning. As a Member of Congress I now represent most of the North Shore along Long Island. If you ever read the book "The Great Gatsby," my district sort of runs from West AG to East AG. It is a district where needless to say after 10 months in Congress I don't want to suggest to you that I have any tremendous insight into these questions on a Federal level. However, as a local official I have been involved for a number of years in trying to see that the North Shore of Long Island in particular is preserved for my children and the children of future generations.

It is fair to say that the wetlands on the North Shore of Long Island are in serious danger. I am compelled to speak up today on the subject of wetlands' preservation because of the extraordinary importance of Long Island's base and harbors, its marshes, inland waterways and coastal wetlands and to the quality of life of the people I represent.

For the vast majority of the residents of Long Island, careful regulation of dredge or fill activity in our waters is not a bothersome extension of Federal authority, but a welcome control over commercial and residential development which might otherwise spoil

much of the beauty, as well as many of the commercial and recreational benefits which 2.5 million Long Islanders enjoy.

Section 404 regulation of dredge or fill activity is an essential tool in protecting water quality and ground water recharge, both vital to Long Island's social and economic health and well-being. Long Island shellfish, Long Island duck, tourists who vacation at our resorts, along with the 2.5 million residents who presently live there rely on the physical, chemical, and biological integrity of our waters. Dredge or fill projects, which sometimes involve heavy metal concentrations, or toxic chemical deposits, must be governed effectively if the social and economic quality of life is to be maintained in the communities I represent on Long Island.

Before presenting my own proposals with regard to section 404, I would add my strong support to H.R. 3282, the Water Quality Renewal Act of 1983, introduced by Chairman Howard. With or without the additional amendments which I am proposing, the Howard bill reaffirms and strengthens our Nation's commitment to wetland preservation. Passage of H.R. 3282 will provide essential revision to those ambiguous provisions of the section 404 program, which have been used by the current administration to undermine some of the safeguards provided by Congress.

H.R. 3282 amends section 404 to reverse recent damaging regulatory changes and prevents future administrative weakening of the act. The Howard bill astutely keeps the burden of proof on the applicant by prohibiting the corps from issuing any dredge or fill permit unless it determines that development will not have an unacceptably adverse effect on the aquatic environment and that there is no practicable alternative to the project which will have a less adverse effect.

Furthermore, H.R. 3282 would make interagency review of permits once again meaningful and equitable by reinstating the procedure that requires the corps to allow the Environmental Protection Agency [EPA], Fish and Wildlife Service, and other natural resource agencies to request further evaluation of controversial permits. Most importantly, Mr. Howard's bill removes the authority from the Assistant Secretary of the Army for Civil Works to veto requests by these agencies for referral of permit applications to a higher level of authority for review within the corps. For these and other reasons, I appreciate and support Chairman Howard's bill reauthorizing the Clean Water Act.

Last week, Chairman Roe suggested that we take a more gutsy and comprehensive approach to the protection of wetlands. He correctly pointed out that to date, proposals regarding wetland protection simply seek to perfect the existing permit program, without seeking to address the larger issue of promoting preservation. The chairman raised the possibility of providing financial incentives which would remove the profit motive in hapless or indiscriminate development of wetland areas.

I applaud such insightful comments and I look forward to working with the subcommittee in breaking new ground and exploring new ways to preserve our precious natural resources. However, I am offering legislation which changes section 404 in ways which I admit does not break new ground. I am simply proposing changes which are consistent with the intent of Congress in establishing

section 404. These changes would complement rather than supplant Chairman Howard's bill.

The bill that I am introducing this week consists of three parts. First, my bill would amend section 404(b) of the act to affirm the fundamental standards for environmental protection contained in the EPA guidelines issued in December 1980. Specifically, my amendment would expressly prohibit the establishment of a disposal site unless it can be demonstrated that the discharge of dredged or fill material at such site does not contain toxic pollutants, as other than trace contaminants.

The term "toxic pollutants" includes, but is not limited to, the contaminants referred to in section 307(a)(1) of the Clean Water Act. These toxic pollutants are listed in table 1 of committee print No. 95-30 of the Committee on Public Works and Transportation of the House of Representatives. This list is subject to revisions by the Administrator of the Environmental Protection Agency as authorized in the same section.

This amendment does not place an unreasonable burden on the applicant if there is no reasonable likelihood of a site being contaminated. Testing for toxic pollutants would only be required as part of the permit review process, if it cannot be determined with reasonable assurance that the discharge does not contain contaminants. This would be based on existing preliminary screening criteria in section 230.50(b) of the 404 guidelines.

As in the Howard bill, disposal sites would not be allowed in cases of adverse impact on the aquatic environment or in cases where a practicable, meaning among other things economic, alternative exists, which would have less adverse an effect. In addition, the provisions of my amendment expressly endorse and direct the continued application of the so-called water dependency test that came in as a regulation during the Carter administration and which has been changed administratively. This guarantees that a search for practicable alternative will be made prior to any discharge into a wetland. For example, construction of a marina must be completed adjacent to a body of water and is thus a water dependent project, whereas development of a shopping mall is not necessarily water dependent. Incidentally, this allows for the possibility that social and economic conditions would justify a waterfront shopping mall.

The second part of my bill makes two changes in section 404(c). Currently, the EPA reviews whether or not a general or individual permit meets the criteria established by the program. The law requires the EPA to set the applicable standards for such permits as well as authorizing a review. The agency is also given a veto power over such permits, but it does not require the EPA to impose its own rules.

Clearly, the intention of Congress in establishing section 404(c) was to give the EPA oversight responsibility to insure against adverse environmental effects from discharge of dredged or fill material in a wetland. The EPA is authorized to set the guidelines, review each permit, and veto permits which don't comply. The EPA is also given authority to prohibit or limit the discharge of material in a wetland area where such activity would clearly have an unacceptably adverse impact.

However, the agency has been unable or unwilling to follow through and implement its own standards. Of the more than 100,000 permit applications processed since 1972, the EPA has only used its veto power once. My amendment makes it clear that the EPA must review permit applications as something more than a comment agency. The EPA would be required to block permits which do not meet the established specifications. There is no good reason why section 404 should have the EPA construct a system of standards and then not be charged with the responsibility to implement them.

Again, I must emphasize that this change does not grant the EPA authority that it does not already have.

In comments on two of the July 22, 1982, permits that were issued, one allowing dredge or fill activities above headwaters and the other permitting activity to take place in isolated lakes and wetlands, the EPA objected on the basis that they were illegal, violating section 404(e). Nevertheless, the EPA refused to use its veto authority. Why do we establish a system of rules if, as in this case, they are left unenforced?

It should also be noted that, if we are concerned about safeguarding sensitive wetlands from any intrusive actions, the amendment I am proposing would provide an excellent mechanism to secure this type of protection. If a wetland were targeted as a site for dredge or fill activities, the EPA would be required to veto specification of that site for any and all activities, assuming that such specification would have an unacceptably adverse impact on the environment.

Under the legislation I am introducing, the EPA would also be required to review petitions for exercise of its authority to limit or prohibit discharge in specified areas. While my bill would allow outside parties to petition, it also provides for a timely decision as to whether substantial information is offered. In other words, since there are many cases that might be considered frivolous, if not brought by people who are in fact demonstrating serious intention to prove that there would be an adverse impact, the EPA would have 30 days to determine whether in fact that kind of substantial information is provided.

They would make that decision within 30 days. If they decided substantial information was provided, they would have 90 days to make a determination on the merits of the case itself. Only in cases where substantial information is provided with respect to municipal water supplies, shellfish beds, fisheries, wildlife, or recreational areas, would the petition process lead to formal consideration. This is similar to the process already in use in amendments to the Endangered Species Act.

The provision would allow interested and knowledgeable parties such as municipal governments, a constructive way to provide new information to the EPA and prompt consideration when this is appropriate. If we are truly interested in enforcing realistic standards for protection of wetlands, the additional information provided in this way should assist the EPA in meeting its responsibilities.

Finally, the third and last amendment which I am proposing corrects what may well have been an oversight in section 505. This section of the Clean Water Act currently provides that any citizen may commence a civil action on his own behalf against the Admin-

istrator of the EPA regarding the enforcement of the Clean Water Act. This amendment would simply provide citizens with the very same right to judicial review with respect to the Army Corps implementation of section 404.

It adds the name of the Secretary, that being the Assistant Secretary of the Corps for Civil and Public Works, in the legislation itself. Here again we are not breaking any new ground but we are making the language a little more explicit.

I offer these amendments as constructive suggestion to hopefully improve implementation of this important program.

In conclusion, I would just like to again compliment you on the work that I know has taken a number of years for you to be committing yourself to. I am not trying to come along as someone who has only been here for 10 months in Congress and tell you that I have got some answers that you haven't already given, I am sure, serious consideration to. But I think they would strengthen some of the language we are working with in the bill.

Mr. ROE. Fine. Your testimony is splendid. I don't have any immediate questions.

The gentleman from Minnesota.

Mr. STANGELAND. No questions.

Mr. ROE. The gentleman from Pennsylvania.

Mr. EDGAR. No. I would just like to thank you for testifying today. These are important hearings, and we have been meeting for a long, long time on the subject and we appreciate your contribution.

Mr. MRAZEK. Thank you.

Mr. ROE. I think you have offered a strong contribution to three areas of your immediate concern that you have pinpointed, and by all means we are looking into this in depth. We are having a great deal of testimony on these issues, and I thank you for your contribution toward our efforts. Thank you very much.

Mr. MRAZEK. Thank you, Mr. Chairman.

Mr. ROE. Our next witness, representing Department of Army, is the Honorable William R. Gianelli, Assistant Secretary of the Army for Civil Works.

Mr. Secretary, welcome to our committee again. We haven't seen you for a while, but we know you have been busy on 10,000 other disasters throughout our Nation on natural resources and we appreciate your good work.

The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman. I would like to take a brief moment to greet Assistant Secretary of the Army Bill Gianelli. In his position in charge of the Corps of Engineers, he has worked tirelessly to move forward the system of water resources projects and improve the process involving permits for which the corps is responsible. His experience in water resources dates back to his service as head of California's water program under then Governor Reagan. I know that all of Mr. Gianelli's efforts have been aimed at the goal of achieving overall benefits to the quality of life in America and implementing programs which have too long languished in the morass of water policy conflicts.

One difficult area is section 404 of the Clean Water Act. The dredge and fill permit program in section 404 evokes strong feel-

ings on all sides. It is perceived by some as the salvation of wetlands and by others as the premier Federal infringement on property rights. I hope we can work toward proper policy despite all the strong feelings.

Mr. Chairman, you often accurately state that water is a part of the entire system and that quality and quantity are inexorably tied. That is one reason that I am very pleased that we have the opportunity to have Bill Gianelli here to provide an outstanding perspective on this relationship.

Mr. ROE. We also want to welcome General Wall and thank him for his great contributions he has been making to the water resources program of our Nation. You are accompanied by Mr. Rees, for the record.

Therefore, Mr. Secretary, if you would proceed we would appreciate it.

Mr. Gianelli, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY OF HON. WILLIAM R. GIANELLI, ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS) BEFORE THE SUBCOMMITTEE ON WATER RESOURCES, COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, HOUSE OF REPRESENTATIVES, NOVEMBER 15, 1983

Mr. Chairman, I am William R. Gianelli, Assistant Secretary of the Army for Civil Works. I appreciate this opportunity to discuss with you the status of our regulatory reform program to improve the effectiveness of section 404 of the Clean Water Act.

As you are well aware, this program has been very controversial from many different perspectives. Some people contend that the program was and still is overly burdensome. Some say we should become more involved with how people use their property and regulate more; and others say that what we have done so far is good, but we shouldn't make any further changes.

Mr. Chairman, I believe very strongly that administrative changes we have made to date have all been in the interests of good, efficient government and have not reduced the environmental protections contained in the Clean Water Act, the National Environmental Policy Act, and all the other environmental statutes which apply to this program. What we have done is eliminate or reduce unnecessary, duplicative, and wasteful procedures. We have left the substance of the program intact.

When President Reagan was campaigning before the election, he promised to get the Federal Government off the backs of the people. Soon after taking office, he established the Presidential Task Force on Regulatory Relief to help fulfill that pledge. In response to a general call from OMB for input to the regulatory reform process, the public identified the section 404 program as being in great need of reform. On May 7, 1982, after many months of deliberation, the Presidential Task Force issued directives for reforming the 404 program. These directives included measures to speed up the decisionmaking process, provide for greater use of general permits, reduce duplicative and overlapping procedures, give more authority and responsibility to the States, and clarify the scope of Clean Water Act jurisdiction.

Concurrently with the task force deliberations, the Corps of Engineers was reviewing and evaluating public comments responding to proposed rule changes which had been published in September 1980, before this administration took office. Based on that rulemaking process, we published interim final rules in July 1982. Those rules incorporated some of the task force directives to the extent that some of the reforms had already been proposed in the September 1980 package. Other reform decisions could be and were implemented administratively. For example, to speed processing time, we revised interagency coordination agreements to reduce a four-step, four-level decision review process to a one-level review process and we modified corps' in-house procedures to ensure that decisions are reached in the most timely fashion consistent with statutory requirements.

In order to fulfill all of the directives of the task force, we proposed additional regulatory changes which would enhance the role of the States, increase the use of general permits, and clarify the scope of jurisdiction of the Clean Water Act. Public

comments on those proposals are now being reviewed and we expect to develop final rules in the near future. We are also working, along with other agencies, on other regulations to reduce duplicative and overlapping procedures. These include NEPA implementation regulations, the guidelines under section 404(b)(1), and the cultural resources regulations.

The most perplexing area of reform to date has been the clarification of the scope of jurisdiction. We proposed a clarification on May 12, 1983, but the comments so far indicate that there is still a great deal of confusion and disagreement over the proper definition. We are working closely with EPA and hope to make progress on this issue in the near future.

We are involved in litigation concerning our July 1982 interim final regulations. We believe that some of the opposition to those regulations is based on a misunderstanding of how the program actually works. It is obvious that there are honest and reasonable disagreements over correct interpretation of statutory requirements, but we are hopeful that ongoing settlement discussions will be fruitful in overcoming these differences.

I would like to stress that the bottom line of our regulatory reforms to date is that we have maintained the environmental standards of the program while reducing the average permit processing time by 40 percent, reducing the backlog of applications awaiting action by 60 percent, and establishing for the first time in many years direct responsibility and accountability in the decisionmaking process.

Despite these improvements, we believe there is still substantial room for additional administrative efficiencies to reduce further unnecessary burdens on the government and on permit applicants by eliminating duplicative procedures, wasteful administrative practices, and nonproductive redtape.

Mr. Roe?

TESTIMONY OF HON. WILLIAM R. GIANELLI, ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS), ACCOMPANIED BY MAJ. GEN. JOHN F. WALL, DIRECTOR OF CIVIL WORKS, U.S. ARMY CORPS OF ENGINEERS; AND MORGAN REES

Mr. GIANELLI. Thank you, Mr. Chairman. I am delighted to be here today to talk about this very important subject of section 404. For the record let me introduce the people with me: Maj. Gen. John Wall, Director of Civil Works for the Corps of Engineers, on my right; and Mr. Morgan Rees, who heads the effort in the Assistant Secretary's Office with respect to regulatory reform. These people are both very knowledgeable and following my presentation will be available to assist in answering any questions which the committee might have.

Mr. Chairman, we have also prepared and sent to you a statement for the record, and I won't read that. But I would like to summarize briefly that statement plus some other observations I have.

Mr. ROE. Yes. Your statement has been entered in full in the record.

Mr. GIANELLI. Regulatory reform was an early goal of this administration. In 1981 the administration established an interagency task force to make recommendations to the Vice President who headed a Presidential task force on the subject of regulatory reform.

On May 7, 1982, after much deliberation the Presidential task force issued directives to the various Federal agencies in connection with the reform of section 404. Those directives included measures to speed up the process, provide for greater use of general permits, reduce duplicative and overlapping procedures, to give more authority of the responsibility to the States, and clarify the scope of Clean Water Act jurisdiction.

Concurrently we published interim rules in July 1982 in furtherance of a notice published back in September 1980. I might say that with respect to these interim final rules which were published in July 1982 we have been sued by a number of environmental organizations, and I will refer to that suit a little bit later.

In addition, in May of this year we published proposed final regulations to complete our effort with respect to the Corps of Engineers on the regulatory reform effort with respect to section 404. We have received a large number of comments with respect to the notice given on May 12 of this year. We have held public hearings and we will finalize in the not too distant future those proposed regulations taking into account earlier comments on the September 1980 regs and also any matters which might be included in the settlement of the litigation which I referred to briefly before.

At the same time we have in the last 2 years been working very closely with the Environmental Protection Agency particularly with respect to possible modifications of the 404(b)(1) guidelines. We are also working on NEPA implementing regulations, and we have been working also on a reexamination of the cultural resource regulations and a number of other activities which have to do at least indirectly with the 404 process.

Eventually, Mr. Chairman, we believe that legislation will be required in connection with the 404 program to clarify the intent of Congress. Now, about a year ago the Cabinet Council in looking at the possible amendments to the Clean Water Act decided we should go ahead and see what we could do with respect to administrative efforts on the reform of section 404. And following completion of that effort, we would come back and take a look at what else might be needed and make recommendations with respect to possible legislation.

We have not reached that point with respect to the administration yet, but I suspect that eventually down the line we will be coming forth with some recommendations we believe Congress should direct their attention to in connection with their efforts to look at the program, also. I think that there will be a number of issues on which the Congress will have to help us and will be addressing. Hopefully one of them I think has to be a recognition that originally section 404 was a part of the Clean Water Act and basically at least my perception is that it was given to the Corps of Engineers because of their vast experience with respect to section 10 of the 1899 Rivers and Harbors Act.

Section 10 of that act provides that you have to get a permit from the corps any time you want to place some sort of obstacle in the navigable waters of the United States. My reading of the act originally was that probably because of the administration of section 10 and because of some similarity with respect to section 404, the program was given to the Corps of Engineers to administer. But again, it had to do with the placing, having the corps issue permits with respect to placing dredge and fill material into the navigable waters of the United States.

By virtue of court decisions and administrative actions the definition of navigable waters has been extended very broadly and now my perception is at least that instead of talking about protecting the quality of the Nation's waters, we are talking about protecting

the Nation's wetlands. I don't object to that. I think that is one of the things that has happened in the evolution of the program. But it seems to me that Congress may want to go back and visit the program to see, for example, if it is to be a wetlands' protection measure, and if it really does the job.

I would respectfully suggest that there are many ways, for example, that wetlands can be destroyed other than through the use of dredge and fill material that require a corps permit. For example, you can clear an area, which happens extensively throughout the United States, which doesn't require a 404 permit. Yet it may destroy the wetlands. You can also drain the area. That doesn't require a 404 permit; that can destroy large numbers of wetland areas.

Another area, in talking to some of the people, for example, in Louisiana, there are large areas of coastal wetlands that are destroyed every year by erosion, natural erosion. This is obviously something the corps can't regulate under the section 404 program. So what I think I am suggesting, Mr. Chairman, as you look at the whole issue, that perhaps maybe your committee—I think it would be certainly appropriate, one go back and visit the original intent of section 404 of the Clean Water Act, which, as I read it, was to protect the quality of the Nation's waters. To now examine it in terms of what it is now perceived as being; that is, a wetlands' protection measure, and see, for example, if that still is the desire of Congress.

Also if it still is the desire that, for example, the Corps of Engineers administer this program, keeping in mind again that wetlands can be destroyed in a wide variety of ways that have nothing to do with section 404. Another thing, it seems to me, which I think the Congress will want to address is under the present law it seems to me it is sort of ambivalent as to who is in charge of the program. For example, the Corps of Engineers has the responsibility to administer the program, but as part of its administration of that program the corps has to apply, or has to comply with section 404(b)(1) guidelines of EPA.

In addition, of course, as has been pointed out by the prior witness, EPA has the veto power over any permit issued by the Corps of Engineers. Let me put it bluntly. Do you want the Corps of Engineers to administer the program, or do you want EPA to administer the program? If you want EPA to administer the program, maybe you ought to transfer the entire program to EPA and give them authority to look at the entire wetlands issue, not strictly the matter of fill material that require a corps 404 permit.

Another issue which I think the Congress will want to address is whether or not, if you decide that it should expand jurisdiction in connection with the wetlands issue, whether it is the desire of the Congress that the regulatory agencies get into the matter of land use, because that is basically what you start to talk about when you start to talk about protecting the wetlands.

Are you going to protect the wetlands and, for example, restrict the use or development on that land and usurp the authority of local interests? Or how is that going to phase in? I think that is another matter which certainly the Congress may want to consider. Let me also suggest, Mr. Chairman, it was my privilege to serve as

a member of the Rockefeller Commission that served from 1973 to 1976 on the review of the 1972 Clean Water Act. In my recollection of all the deliberations we had over the 3-year period of that commission on, for example, amendments that might be needed to the Clean Water Act, I can't remember any discussion at all with respect to section 404 as related to the subject of wetlands.

So again this ties in, I think, with what I said earlier, that perhaps the Congress may want to visit this program to see, for example, if the will of the Congress is being followed and if there is some need to reevaluate it.

I might also suggest that I think the corps and EPA and the other agencies have done well with respect to the administration of a very difficult program. I think the vast majority of the permits go through without controversy. But those that do go through with controversy, I think the Congress may want to hear, for example, from some of the applicants who have been subjected to all of the procedures that have been adopted and are in place with respect to the 404 program. For example, just to give you an up-to-date example. Last week ourselves, EPA, and Fish and Wildlife Service were summoned to a meeting called by Senator Warner. The purpose of the meeting was to discuss an application filed by the city of Chesapeake in Virginia for dredging out a channel to provide flood protection to its citizens. They produced a large number of maps which showed, for example, in the last year or so a large number of people in the area around Chesapeake being flooded by virtue of this natural channel which had been silted up and, in effect, would qualify as a wetland.

We, the corps, by virtue of the definition of wetlands, required a 404 permit. After he heard particularly from EPA and Fish and Wildlife Service, the district engineer determined that the public interest required the issuance of a permit so that that area could act to protect itself from a flood control problem. EPA and Fish and Wildlife Service objected and asked that the decision be elevated. A week ago, I denied the elevation again upholding the district engineer's decision, because it seemed to me that what was being proposed by the city of Chesapeake was to clean out this channel so the flood waters could escape. By virtue of that, the city would place the material which had dredged out of the channel along the banks, which were defined as a wetland area. Certainly this was not the original intent of Congress with respect to the 404 program.

The parties are all meeting and trying to work out that problem. I merely cite that as an example of something perhaps maybe the Congress might want to take a look. Congress might want to hear from a number of the applicants with respect to their perception of how the 404 program is working.

Let me as I close point out to the members, if I could, the process we have to use now with respect to considering a 404 permit. I have asked Leutenant Colonel Pernotte to put up on the wall for your examination what I call a simplified flowchart for the section 404 program. I would like to take a few minutes to refresh the committee's memory on how actually the program works. We have been looking at, as I say, the process for more than 2 years. I am convinced that the process now is much too complex and provides

too many opportunities for delays by those with single purpose concerns.

The corps, on the other hand, must balance the benefits and consequences of a proposal and judge whether the overall proposal is in the public interest. The long road which an applicant must follow is prescribed by a number of regulations, most predominantly the corps' own regulations. I should point out that over 50 percent of the 18,000 permit applicants each year are private citizens, and for brevity's sake I will only hit the highlights the regulatory process using these charts we have prepared. I might say we have an abbreviated version of that chart and will be pleased to make that available to members of the committee following the presentation.

First of all, if you start on the extreme left, when someone informs the corps that he or she wants to do something that may be in the waters of the United States, the corps or EPA must determine whether the site is within the program's jurisdiction. Then the corps determines whether the activity is regulated under section 404.

I should point out that only filling is regulated. Many activities which destroy wetlands are not regulated under 404.

Next, application for a permit is made by an applicant once we tell him that he is under the jurisdiction of section 404. He makes his application, a 30-day comment is provided and, if requested, a public hearing is held after another 30-day notice, as indicated by the colonel.

During this initial period there are a plethora of issues which can arise and lead to denial of the permit or extensive delays. Some are historic preservation, endangered species and coastal zone compliance. The corps must now apply the 404(b)1 guidelines through which the applicator must pass. These are duplicative. I must say we have had little success in reforming these guidelines. We were making pretty good progress up until about a year ago when personnel in EPA changed hands, and at the present time we still are working with the new team.

I want to point out that the new Administrator for Water at EPA has just been appointed within the last 2 weeks. I would say in the last year we have been somewhat handicapped by the lack of complete staff onboard at EPA. Moving on, the corps then prepares an environmental assessment which can lead to an environmental impact statement, which can take anywhere from 1 to 3 years to complete.

The corps next conducts its public interest review by evaluating the benefits and detriments of the project to determine whether the overall public interest is best served by issuing or denying the permit. Even if the permit is found to be in the public interest, there are ways a single-purpose agency can cause an application to be denied. For example, if EPA feels the project is environmentally unacceptable, regardless of its other merits such as flood control or energy development, they can invoke the lengthy veto procedures under 404(c). Also, if one of the resource agencies objects to issuance of the permit they may request elevation of the decision to a higher level under the section 404(q) agreements.

Let me stop at that point. Before we started the regulatory reform effort, the process was that the district engineer made the preliminary decision with respect to the 404 permit. If one or another of the Federal agencies, single-purpose agencies, EPA, Fish and Wildlife Service, National Marine Fishery Agency, did not like the decision of the district engineer, they could appeal that decision to the division engineer. If they still didn't like it, to the Chief of Engineers. If they still didn't like it, to the Assistant Secretary of the Army for Civil Works, my office. If they still didn't like that, to the Secretary of the Army. That process, just the elevation process could take a year to 2 years in terms of the delay in considering the permit.

Now, we have in the last year revised the memoranda of understanding with the other agencies so that now the district engineer is the primary decisionmaker. If the other agencies are not happy with the division engineer's decision, they can appeal directly to my office. There is one elevation. We make the decision whether the appeal should be granted, whether it should be denied and at what level it should be reviewed. So we have cut down very materially the processing time by virtue of reducing the elevation process which has been helpful, and as far as I know it has been carried out in the last year without any major problem.

Even if the project is found to be in the public interest, there are ways single-purpose agencies can cause an application to be denied. If EPA feels the project is environmentally unacceptable, as I pointed out, regardless of its other merits, such as flood control or energy development, they can invoke the lengthy veto procedures under 404(c). Also, if one or the other of the resource agencies object to the issuance of the permit, they may request elevation to a higher level under the section 404(q) agreements. That is what I just referred to a minute ago. The request is sent to my office where the merits of the request are evaluated and a decision is then made whether to have a higher level review. Even after this higher level review, EPA still exercise their 404(c) veto of the issuance of the permit.

As you can see, Mr. Chairman and members of the committee, this is a complex program which can be nearly impossible for a citizen to understand. The process has evolved over the years from a series of laws, regulations and policies subsequent to the enactment of the Clean Water Act. A citizen looking at this process must have great concerns about the wisdom of his or her government. When we came aboard it took an average of 128 days to get through the process. While we have made some improvements in the efficiency of the system, by moving through the steps more quickly, there is still far to go.

The basic problem, however, is the convoluted system shown in these charts. There are too many traps for an applicant to fall into if his project is controversial. I think there is too much control by other single-purpose agencies. It will take structural changes to devise a program which provides a citizen with a decision in a reasonably short time while still maintaining the needed environmental protections and the Congress may want to address these changes.

Mr. Chairman, members of the committee, that completes my presentation. If you have any questions, I would be pleased to try to respond to them now or be pleased to respond to them later in writing.

Thank you very much.

Mr. ROE. Well, I want to thank you very much, Mr. Secretary, for a very adroit and well-thought-out presentation, and I think a highly provocative one. I think your testimony has been splendid today, not in an argumentative point of view, but in portraying to the committee the labyrinth of processes involved in getting these matters resolved. So I think you have certainly presented an issue to the committee that has to be thoroughly reviewed because I think the point you are making basically is twofold.

One, that originally 404 had to do with dredge material and the effect upon navigable waters and, in effect, the water quality of the Nation. And as a whole series of additional laws have evolved affecting now primarily the wetlands issue we have a direct confrontation now on the economic development of the Nation as relates to our ports and harbors, inland waterways and dams and reservoirs and hydropower and to how that conflicts with the desire to be able to preserve the natural resources of the Nation.

I admire your testimony in the sense that you are bringing to the committee's attention the enormous complexities that are already there. And that has evolved into a confrontation, maybe not having meant to, but a confrontation between those who see the wetlands as being the paramount issue involved versus the point of view of the development of the Nation's resources. So I think you have brought that very, very clearly into focus.

Mr. Stangeland?

Mr. STANGELAND. Thank you, Mr. Chairman.

I join you in your discussion of the testimony. I think that simplified flow chart is an excellent example of what we have got and some of the problems, albeit well intentioned. I know that the administration hasn't sent up their package of 404 legislative amendments, but what are some of the areas you feel might require our attention?

Mr. GIANELLI. I think, Mr. Chairman, one of the big areas is the area subject to jurisdiction of the 404 program. I think I indicated that earlier. Originally as the chairman pointed out, it was a provision to protect the quality of the Nation's waters and I think by virtue of the court decisions and administrative actions, it is now viewed as a wetlands protection measure. It seems Congress might want to visit that issue and decide, if it is to be a wetlands protection measure, and let me quickly say that I certainly am a firm advocate of protecting the Nation's wetlands.

I suggested, for example, to the administration when we had our Cabinet Council deliberation on this that I thought it was important, for example, that maybe the administration should address the issue of protecting the wetlands. But I raised the question of whether it should be done under the 404 process. And so I think that is one of the very primary issues which it seems to me Congress may want to face.

The other one—it seems to me that Congress in a way has put the administrative agencies in kind of a difficult position. You have

charged the corps on the one hand in issuing permits to consider the matter of public interest. In other words, to consider for example if it is a flood control project, how important that project is to the citizens of an area. And to evaluate, for example, that benefit versus, say, some wetlands that might be lost. The problem then is if you are going to charge the corps with making a decision in the public interest, you should not tell the corps, through the 404(b)(1) guidelines and through the 404 veto process that, "Look, corps, you can't consider the public interest. You can only consider the environmental issues that are set forth by the Environmental Protection Agency."

Now, I am not, you know, saying whether it is right or wrong. I am just saying to you, Mr. Chairman, and the members of this committee, when I appeared before Senator Warner and Congressman Sisisky last week, the Congressman, after we went through the dialog with the three agencies, said, "My God, what kind of a monster has Congress created here to the citizens?" And so what I am saying to you as you look at this entire issue, it seems to me you will want to decide whether or not you want the present system to continue to try to work the way it is.

On the one hand, you charge the corps with a responsibility to consider in the public interest all kinds of issues. On the other hand, you charge EPA with its primary mission of protecting the environment. In this case, it is now the wetlands. I think you have to make a decision. Do you want to have a decision made in the public interest? Do you want to balance the factors? Or do you want to make it solely an environmental measure?

I am not arguing one way or another, but I am saying to you the Congress have got to help us resolve this problem because there is a great conflict at the present time.

Mr. EDGAR. Will the gentleman yield?

Mr. STANGELAND. I will ask just one question, then I will yield.

In your review of the 404 program and its relationship to wetlands, do you have information on what portion has been lost to the 404 provisions and what has been lost to, say, drainage or other areas?

Mr. GIANELLI. We have tried to work up some statistics. I don't think they are very accurate, but it may give you a perspective. For example, we understand—and I think maybe these figures came from Fish and Wildlife—that about 450,000 acres of wetlands are lost each year. Now, as near as we can tell, the loss that might be due to issuance of 404 permits would amount to something like probably 40,000 acres or somewhere around 9 percent. This kind of illustrates the point I was trying to make earlier.

Everybody looks at 404 as the way to protect wetlands. That figure demonstrates to me that it is just a drop in the bucket when you consider the entire wetland problem and when you consider all of the wetlands being lost each year.

So I guess in summary, Mr. Stangeland, I would say that the 404 program only touches or only causes a very small proportion of the wetlands that are lost each year under the 404 program.

Mr. EDGAR. I thank the gentleman for yielding.

The gentleman asked a very important question. The question I would have of you is why has not the administration, after 3 years

in office, come forward with a wetlands protection act, revisions to the legislation so that we can debate those proposals? Why are you coming before us today laying it on Congress to come up with these conclusions? Is it true the administration does not have its act together on this issue?

Mr. GIANELLI. As I tried to point out, the administration made its decision to try to do as much as it could administratively in straightening out the 404 process. We are still working on that. Ultimately, I think the Congress is going to have to deal with the issue. Some of the issues we have not been able to resolve. We are still working on them.

Mr. EDGAR. That is the very point that I am asking, and I appreciate the gentleman yielding. It seems to me that much of what you say is important. It is helpful for us to hear, important for us to see the change. But if you are coming to us and asking us for legislative change, that you bear some responsibility in coming forward with specific legislative language that the administration can support. We can come and solve your problem from the corps' point of view, and if EPA or one of the other agencies is not satisfied with the direction we go, I think we just find ourselves thwarted by possibly Presidential crankiness or veto on any changes we are going to make.

I just wondered if the administration has plans in the next month, next 2 months or 5 months, to present legislation to us to correct the very deficiencies that you are finding difficult to live under?

Mr. GIANELLI. I don't think we have any timetable on it, Mr. Edgar. I think we will in due course make some recommendations in this regard, yes.

Mr. STANGELAND. I will yield back my time for now, Mr. Chairman.

Mr. ROE. The gentleman from Pennsylvania.

Mr. EDGAR. Thank you, Mr. Chairman. I have a number of questions.

I appreciate your show-and-tell chart. We were commenting up here that the omnibus water bill that this committee is working on is a little longer than your streamers that you have placed out in terms of Federal regulations. So while it is impressive, there are some bills coming out of this committee that may, in fact, be more impressive. I am enormously impressed with the ability of the corps to deal with complicated subjects. So just because the subject is complicated does not impress me very much as a reason for change.

What impressed me a little bit more were some of the specifics you cite as to why we need some changes. Your comments about a wetlands protection act made some sense. I think there is a connection between dredge and fill material and wetlands. Isn't it true that while you state there are other concerns about wetland protection other than just dredge and fill material, would it not be a true statement to say that dredge and fill is really the primary threat to our wetlands?

Mr. GIANELLI. No, I don't think so, Mr. Edgar. I think the primary threat is from a lot of other causes and I think he enumerated them.

Mr. EDGAR. Can you be specific?

Mr. GIANELLI. Yes, along the coastal areas coastal erosion is a very great problem. Certainly the 404 program doesn't have anything to do with erosion. In addition, you can clear an area without requiring a 404 permit. Large areas of wetlands have been cleared and converted to other uses. That is another way. Another way that the wetland can be destroyed is by draining an area. Draining an area doesn't require a 404 permit.

Mr. EDGAR. Are you suggesting then that dredge and fill material placed on wetlands is a minor problem?

Mr. GIANELLI. I am suggesting it is not the only problem. It is not the only solution.

Mr. EDGAR. What level in that shopping list? It is not a major issue? It is not a minor issue?

Mr. GIANELLI. I think I tried to reflect in the statistics I gave, for example, if you take a look at the annual loss of wetlands which are reflected from some fillings, I think we have been given by the U.S. Fish and Wildlife Service, somewhere around 450,000 acres, then total loss due to 404, somewhere around 40,000 acres or about 9 percent. I don't know whether that is an accurate measure, but at least it is some indication, it seems to me, of what we are talking about here.

Mr. EDGAR. In terms of your reforms, let's say we put in place a wetlands protection act, we give the corps the total responsibility of looking at both the environmental impact and all of the other impacts that you suggest. We put in place a process where we cut from 120 days average to a much smaller number, the time it takes to approve permits. What other processes do you see necessary in order to give you full responsibility for this issue?

Mr. GIANELLI. I think I tried to indicate, Mr. Edgar, that it seems to me there is sort of a conflict, if you want to call it that, between the mission which the corps has which is to consider all of the public interest areas, and the directions the corps has to follow with respect to 404(b)(1) and 404(c), which are administered by EPA. I think that should be clarified, it seems to me.

In other words, if you want the corps to consider all the items of public interest, then you shouldn't have the corps, it seems to me, have their action subjected to a 404(b)(1) regulation that is concerned solely with environmental issues or a 404(c) veto. I don't care which it is, but it seems to me that has to be clarified.

Mr. EDGAR. Why wouldn't we go the other way? Why wouldn't we give the responsibility to the EPA to care about the wetlands and take the responsibility away from the corps?

Mr. GIANELLI. All right. That is fine and I have no objection to that. Let me make that clear. But let me point out the case I cited of the city of Chesapeake who was trying to provide flood protection for the citizens. If you are only going to consider the environmental issues, destruction of that small area of wetland as EPA, for example, registered an objection to us with respect to the issuance of that permit, then you don't put into place any balancing act.

In other words, the Congress is saying, "OK, the loss of that 24 acres of wetlands or whatever it is, is more important, and that is

going to be controlling, as to whether or not that area should have flood protection."

Mr. EDGAR. What makes the Army Corps of Engineers better at the balancing act than giving the authority to another agency that has primary responsibility over the environment but also responsibility over public good?

Mr. GIANELLI. Well, that is fine with me. I think there has been some feeling, for example, that EPA perhaps maybe doesn't have the expertise to evaluate all of the factors that the corps has. I suspect that is why it was given to the corps in the first place.

Mr. EDGAR. What expertise does the corps have in evaluating the balance that is necessary in this area that other agencies could not either develop or, in fact, do not presently have?

Mr. GIANELLI. Well, for example, the case I cited on a flood control project. It seems to me that is the corps' basic mission in life is to provide flood control in areas where flood control is needed. It is my view that the Corps of Engineers is the expert agency of the country with respect to need for flood control. I think the same could be said with respect to other uses. For example, the corps has extensive experience with respect to navigation; both inland navigation and coastal ports. As you balance all of the issues, the corps, it seems to me, does have an ability with respect to its areas of economic analysis and with respect to its other responsibilities to probably do as good a job as anybody else.

But let me say if the Congress wants to assign this to EPA, be my guest, Congressman. I would be very happy to have EPA have the entire responsibility, and just see, for example, how long the program would work in its present form.

Mr. EDGAR. Let me ask you two additional questions. I do have a couple additional questions if we have time at the end.

Do you know anything about the Westway Highway in New York and the involvement of the Army Corps of Engineers?

Mr. GIANELLI. Yes, I do. I am very familiar with it.

Mr. EDGAR. There is currently an effort to circumvent the corps' regulations and a court decision through legislation. Is this a matter for the courts, or for Congress to settle?

Mr. GIANELLI. We would hope that everyone would allow the administrative process to work, Congressman. And——

Mr. EDGAR. So you are not supporting as a legislative response?

Mr. GIANELLI. No, but now that you have mentioned Westway, let me point out, it seems to me this illustrates one of the frustrations of the present process. I am not arguing for or against Westway. I am merely pointing out the process. That project filed for a 404 permit in 1977. That is 6 years ago. The district engineer before our administration ever came aboard was ready to issue a permit on that. At that time, the matter was taken to court by a number of organizations, and the court said or ruled that the environmental impact statement that the corps had prepared in connection with its process to issue a permit was inadequate.

So it asked the district engineer to go back and review the process on whether or not the environmental impact statement was adequate. The district engineer here about 6 months ago, the then-district engineer, was about to render a decision that additional fishery studies, which was the issue, were not necessary, and to go

ahead and issue the permit. The new district engineer came aboard, arrived at an opposite conclusion. He recently said about a month ago that he thought an additional 2-year study of the impact on the fishery should be made.

I have asked the chief of engineers by the middle of next month to review that decision in view of its present posture. But again, I am not arguing the merits of the Westway project. But I am merely pointing out that the process that has been created has allowed that project to be stalled for some 7 years and possibly 2 more without a decision of go or no-go.

It doesn't seem to me that is the function that this Government ought to perform.

Mr. EDGAR. That is the famous Army Corps of Engineers versus striped bass case, right?

Mr. GIANELLI. That is correct, and let me point out again, Mr. Congressman, that with respect to the 404 program, it was originally intended to evaluate the effect on water quality. The issue on Westway is not a water quality issue. It is the issue of whether or not striped bass are going to be interfered with unduly. Again, I am pointing out to the Congress, you ought to go back and look and see if that was your original intention. Do you want the corps to be the expert in areas of fishery, or do you want them to go back and be the experts in terms of dredge and fill and its impact on water quality in the Nation?

Mr. EDGAR. A few weeks ago, I had the privilege of visiting the Philadelphia Sewage Treatment Works. In discussion with some of the people there, they discussed a particular problem they have in that city which I think happens in other cities. That is that some of their fresh drinking water leaks from old and aging pipes; gets into the sewage system and increases the need for volumes of water to be handled in the sewage treatment plants.

They are working very hard on improvements for stopping the leakage of that freshwater and other leaking problems that they have in the city, to reduce their cost of sewage treatment. Do you think that it might be cost effective for the Corps of Engineers to get more involved in directly assisting in leak detection and repair of water systems? Couldn't this issue save some money and wasted water now presently being lost?

Mr. GIANELLI. I think the corps has an expertise in this area, Mr. Edgar. Whether or not the Congress would want to have the corps do this on a nationwide basis, I think you might want to look at pretty carefully, as to the area of responsibility of local people, for example, versus Federal responsibility. I think the corps has the technical capability. Whether or not they ought to be doing that, I think, is an issue which perhaps the Congress should address itself to. But let me point out that the problem you cite is a difficult one, and also present with respect to nonpoint sources.

In other words, there is a great effort to try and get nonpoint sources to be cleaned up. I think this adds a very great burden sometimes when, for example, a city flood system is integrated into its sanitary system. So I think the whole problem of capacity of sanitary systems either by virtue of pipeline leakage, water into them or water from nonpoint sources, is a very difficult one.

Mr. EDGAR. I just close with this comment, the Moynihan amendment in the Senate and my amendment efforts in the omnibus water bill are moving, be it a little bit slowly, through the House and Senate. But there is interest in having the corps take on some new responsibility, an urban water loan program that has been developed in both the House and Senate, with strong statements of support by the Appropriations Committee in the House. It would be my hope that in some preliminary staff meetings, you are already talking about how something like that might be implemented, so that the startup time could be reduced if in fact the Congress determines and the President signs a new urban water loan program.

Mr. GIANELLI. I am sure the corps could carry out that responsibility, Mr. Edgar.

Mr. EDGAR. Thank you.

Mr. ROE. The gentleman from Pennsylvania, Mr. Clinger.

Mr. CLINGER. Thank you, Mr. Chairman.

Mr. Secretary, what, tell us, prompted the Presidential task force on regulatory reform to review the corps' regulatory program under section 404 of the Clean Water Act?

Mr. GIANELLI. Yes. I think when the administration came in or about the same time it was coming in, it received quite a large number of complaints with respect to the 404 program. As a result, I think the administration felt it had to be one of the programs of regulatory reform which would be looked at very early.

Mr. CLINGER. Why, in your opinion, was it necessary to revise the 1980 MOA-EPA, Interior and Commerce?

Mr. GIANELLI. I think it was the—there were existing MOA's with the Department of Commerce and with the Department of Transportation. And I think by virtue of the MOA's we had entered into with the other agencies, it was necessary to complete the cycle. I didn't consider them to be a major concern. But I thought we did need to bring those up to date to be consistent with the other MOA's we had negotiated.

Mr. CLINGER. So, were there any major changes in policy direction as a result of those MOA's?

Mr. GIANELLI. Are you asking about the Interior and EPA's? Or are you asking about Commerce and Transportation?

Mr. CLINGER. All three, really. There was a revision, as I understand it, of the 1980 MOA involving EPA, Interior, and Commerce.

Mr. GIANELLI. Yes, and Transportation.

Mr. CLINGER. And with Transportation as well.

Mr. GIANELLI. Yes. The initial thrust was to try to shorten the process that took so long by virtue of the successive elevations. That was the primary thrust, why we wanted those memorandums of agreements revisited and reevaluated.

Mr. CLINGER. With the objective of——

Mr. GIANELLI. Shortening the process.

Mr. CLINGER. Truncating——

Mr. GIANELLI. Exactly. I don't think you were here when I reiterated the time it could take under the whole process just by elevations, 2 years alone just to go through the elevation process.

Mr. CLINGER. Could you summarize what you perceive to be the progress that has been made under your regulatory reform efforts?

Mr. GIANELLI. I would think we have made pretty good progress in terms of eliminating the elevations as a result of the renegotiations. We still have problems, primarily with the 404(b)(1) guidelines and through our own regulations which we are in the process of reexamining now. So there are still quite a number of issues still to be resolved. But I think the MOA's, the primary accomplishments of those, as I would view it in retrospect, is that it helped to shorten the process. But it didn't necessarily uncomplicate the process, in some of the more complicated cases. That is what I think we are going to be addressing from now on.

Mr. CLINGER. So you are saying that absent any action by this committee or by Congress, there are still things that you feel the corps can do internally to shorten the process?

Mr. GIANELLI. Yes, and to help clarify the issues.

Mr. CLINGER. What is your position on section 10 of H.R. 3282? This is the bill introduced by Chairman Howard, the provisions relating to 404 that are contained in that bill. You might want to provide that for the record.

Mr. GIANELLI. If we could do that, I would appreciate the opportunity. We haven't taken any official position on that. I think it presents some problems as I may have reflected earlier by boxing in some of the environmental provisions and perhaps eliminates the ability to balance.

[The information received from Mr. Gianelli follows:]

Question. What is your position on section 10 of H.R. 3282?

Answer. It is standard administration policy to coordinate official agency views on legislation within the executive branch prior to their submission to the Congress. I have initiated action to see to it that the views of the Department of the Army are forwarded to the Committee after completion of this necessary coordination process.

Mr. ROE. Would the gentleman yield.

Mr. CLINGER. I would be happy to yield.

Mr. ROE. I think that is a very key point. The issue involved there in that particular section speaks as follows, and I quote:

> That the wetlands protection provision to prohibit the issuing of a direct and fill permit by the Corps of Engineers unless it is determined that the discharge will not have an unacceptable adverse effect on the aquatic environment and that there is no practicable alternative which will have less adverse effect.

Would you make the following observation, "any intrusion whatever is going to have some adverse effect," is that a reasonable thing to say?

Mr. GIANELLI. That is a reasonable assumption, Mr. Chairman.

Mr. ROE. I would think so. So when we are talking about an adverse effect, we are talking to what degree.

Mr. GIANELLI. Exactly.

Mr. ROE. Apparently, from what I see in this language, there really isn't any test of the degree of what. It doesn't speak of economic values, it doesn't speak of, what would you say, dilatorious effects. It simply says if it has an unacceptable adverse effect. Who is to decide that? That goes back to the issues we discussed in the corps' responsibility under the water resources development bill where the corps is the lead agency and commiserates and confers with the other agencies in the Government and makes its recommendations back to this very same committee, the Public Works Committee, on an environmental impact statement and its recom-

mendations as to whether or not a project in the course of flood control or whatever should proceed. Isn't that so?

Mr. GIANELLI. That is true. I think that is one of the problems we have, for example, with the subject of the environmental impact statement. Environmental impact statements are adequate in the eyes of the beholder, Mr. Chairman. If you are against something or believe it hasn't adequately been taken care of, then it is inadequate. I think that is one of the problems we have always had with respect to environmental impact statements.

Mr. ROE. I think what the committee has decided to do by unanimous agreement on that legislation, both in the subcommittee and full committee, yet to go to the floor, is the point of view that should there be matters of controversy that arise to a certain degree, and that those projects would come back to the committee to review that issue. The purpose of that was to take the constant confrontation with the courts out of focus and come back and say the remedy in many areas would lie with the decision made by the Congress, because some of them were of such confrontation that somebody had to make the decision. Otherwise we would be spending 6, 8, 10 percent in court, I think what you have testified to.

So we have developed at least what we see as a methodology to deal with that. Then if the Congress decides as to the three or four options that may be available, if it costs more money to mitigate, if it is going to cost $20 million or $30 million more to mitigate, then Congress has to make that decision as to what is in the public interest. Is that a reasonable approach to take?

Mr. GIANELLI. Exactly, Mr. Chairman. I think that is the whole point of it all.

Mr. ROE. Isn't it so that when you were testifying earlier, coming back and saying that Congress—and there is nobody blaming anybody here—that because of the action, and lack of coordinated action on the part of the Congress of the United States in adopting and developing a half a dozen different laws, that in effect in part, literally conflict with each other, that there is not a clear-cut decision to be made in the process that we are talking about now? Somebody has got to make a judgment and either the court—the corps is going to make the judgment, EPA is going to make the judgment, the courts are going to make the judgment or the duly elected representatives of the people are going to make the judgment.

We found that in going through a laborious effort in writing the water resources development bill that many of the areas that could be resolved were extremely expensive, in some people's mind to resolve, but if they were to be resolved in that direction, then Congress was the only one who could decide that because Congress had to provide the funds.

So it wasn't necessarily judgmental on the part of the corps or EPA, that the only way you could really get that solved was through the law. Isn't that a little bit what you are leaning toward, some process of that nature, where clarification is needed?

Mr. GIANELLI. I think so, Mr. Chairman. I think that far too much of the 404 process we see here on the board has been developed largely as a result of court decisions. It seems to me——

Mr. ROE. If the gentleman would yield, however, the court decision was based upon an action by the Congress.

Mr. GIANELLI. That is correct, but it is interpretation.

Mr. ROE. I understand that, but Congress either took an action or didn't take an action which gave rise to the courts to decide the issue. The purpose of Congress is to put into focus what the law of the land is. So that if we are going to rely upon the courts to make all the decisions, and I don't speak in any effrontery to the courts, we are going to be waiting forever because one contravenes the other. It takes years and years and the public interest isn't served that way any more than the wetlands interest or dredging interests would be served.

What I am trying to get at, and that is the point I think you have been developing along the line, that in some areas where we have these existing conflicts that somebody is going to have to decide who is in charge of the store.

Mr. GIANELLI. Exactly.

Mr. ROE. If we are going to say all matters will go to the courts, what came out of previous testimony on this issue was the point of view that some people just had the idea that they would wave a magic wand and the matter is resolved. There is such a thing as private property rights.

Does the corps or the Congress have the right to obliterate private property rights without due compensation? Then that is absolutely contrary to the Constitution of the United States. In effect, you have an adverse situation existing here where that issue is created. If we are going to protect the wetlands, somebody has got to be able to acquire those wetlands in this member's judgment and set it aside in perpituity as we do with our national parks and our wild rivers and the other things we are doing.

So what you are trying to develop, I think your testimony is very important today—what I have been trying to say to the committee as—if we are just going to write another extension and put off another 2 years to make these decisions, it is not going to solve the problems. We have to understand what the problem is and we have got to be able to deal with the problem.

I admire your point of view. I think you are right on target that, if the 404 section is to be a wetlands section, let's say so.

Mr. GIANELLI. Exactly.

Mr. ROE. If that is the case, that decision alone would cut 50 percent of the time out of there because you could say that area is a designated wetland area, and has been by some other authority. Congress has accepted it and doesn't talk about putting any dredge material in there.

Mr. GIANELLI. There is probably no city along the U.S. coast that would have ever developed under the present law.

Mr. ROE. Regardless of that, I am simply saying that is the number of the issue. The number basically, the 404 permit section did not have to do in the corps' initial responsibility with the whole array of the environmental relations, we were to make a counterbalance; is that fair?

Mr. GIANELLI. That is correct.

Mr. ROE. The gentleman from Pennsylvania.

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Mr. CLINGER. I just associate myself with your remarks, Mr. Chairman, and I yield back.

Mr. ROE. What I am trying to do with the committee, if we are going to be productive in our hearings, is to bring the point into focus so Congress is going to act on the right thing. To add other restrictions and more delay is not going to solve the problems of the wetlands any more than it is going to solve the problems of development of the Nation. Isn't that fair play?

Mr. GIANELLI. You are exactly right, Mr. Chairman.

Mr. ROE. When we came back in the water resources development, we said, for example, in the Alabama project that had to do with Mobile Harbor, that in order to protect that 1,700 acres of wetlands, the decision, either you dump the dredge material in that wetland or you take it out to the Gulf of Mexico. And we have recommended in that legislation that yes, spend $25 million more. We have to protect that 1,400 acres. Spend the money to go in mitigation in effect and take it out and dump it into the gulf. That is a valid decision made that Congress has to decide whether it wants to spend on a cost-benefit ratio $30 million addition to do that.

We are not quarreling with that decision, but someone has to decide it. Otherwise, we have two things coming together that are not going anyplace. Is that reasonable?

Mr. GIANELLI. That is correct.

Mr. ROE. Who is next?

Mr. Snyder?

Mr. SNYDER. I would like, if the gentleman doesn't mind, to be recognized so I can kind of sort of pursue this just a little bit, because I am thinking we are overlooking something. Of course I want to welcome Bill Gianelli to the committee. He is not waffling today, as he doesn't usually waffle.

I was particularly impressed with the statement on the bottom of page 3 of your prepared statement in regard to the litigation. You recognize that there are honest and reasonable disagreements over the correct procedures and interpretation of the statutory requirements, in that court proceeding, and you indicate that ongoing settlement discussions would be fruitful in overcoming these differences. As I understand it, there are some 10 or 12 environmental groups involved in that litigation with the corps. What is the EPA's involvement? Are they a party to that suit?

Mr. GIANELLI. EPA has been part of the negotiating team that has been negotiating with the plaintiffs, Mr. Snyder. So I think the parties, the negotiation group now have come up with a proposal which I just got briefed on last week and will be examining that proposal. One of the things I will be looking at is that we don't do anything by way of settlement that will complicate that already complicated process.

Mr. SNYDER. Is it not a reasonable assumption that if a settlement can be reached in those negotiations that it would give us the basis upon which to proceed as we look at section 10 of 3282 in order to resolve the legitimate complaints and concerns on both sides of this issue?

Mr. GIANELLI. As I say, I have not yet formed a conclusion with respect to what they have negotiated.

Mr. SNYDER. I am not suggesting you have formed a conclusion. But if a settlement could be reached, let's assume one can be reached, if you can do that, will that not give us the basis upon which to proceed here to resolve the problem?

Mr. GIANELLI. It would certainly on some of the issues, but I think perhaps there may be still some major ones to be resolved. It would help.

Mr. SNYDER. In other words, all the issues are not present in the case?

Mr. GIANELLI. That is correct.

Mr. SNYDER. Would it be possible for one of your legal people to give us a sheet of paper which would outline the issues that are involved and the issues that still are remaining?

Mr. GIANELLI. Certainly.

[The information received from Mr. Gianelli follows:]

The issues involved in the pending litigation and those additional issues which have been raised in the subcommittee's hearings that are not part of the lawsuit are as follows.

The 19 counts of the plaintiff's complaint can be summarized as follows:

1. The headwaters and isolated waters nationwide permits are alleged to be illegal in several respects: Compliance with section 404(e), which requires that they cover activities which are similar in nature and have only minimal individual and cumulative impacts; and the adequacy of documentation prepared in support of issuance of those permits as provided in the National Environmental Policy Act and section 404(b)(1) of the Clean Water Act (six counts).

2. Four other nationwide permits are alleged to have similar deficiences—those for outfall structures which are also permitted by EPA; coal mining activities also permitted by the Office of Surface Mining: small hydro-power projects also permitted by the Federal Energy Regulatory Commission, and activities of other Federal agencies where those agencies have determined in accordance with CEQ regulations that the categories of activities do not have significant impacts—are alleged to have similar deficiencies (four counts).

3. The definition of general permit to include general permits which would reduce duplication of effort with another Federal agency or a State is alleged to violate section 404(e) and 404(g)–(1) (three counts). Additional allegations are:

4. Unlawful limitation on district engineers' authority to condition permits (one count).

5. Failure to follow EPA's definition of fill material. As a result, many liquid and solid waste activities are unregulated (one count).

6. The exemption for irrigation activities was unlawfully expanded (one count).

7. Department of the Army's policy on deference to State and local positions is unlawful.

8. Failure to implement the "Avoyelles" decision regarding regulation of land-clearing activities.

Issues are being discussed in the settlement which are not part of the complaint. They are related to provisions of the May 12, 1983, proposed regulations:

1. Proposed new definition of general permit to broaden use of general permits to reduce duplication of effort between the Department of the Army and other Federal agencies and States.

2. Giving great weight to the views of the State and Federal resource agencies.

3. The so-called burden-of-proof, i.e., whether the applicant must demonstrate no adverse effect or the Government must demonstrate an adverse effect.

4. Use of letters of permission which is an abbreviated process for reviewing minor 404 permit applications.

5. Treatment of denial of State water quality certification for nationwide permits.

6. Consideration of private property ownership in the public interest review.

Mr. SNYDER. So we can take a look at what might be the consensus that could be arrived at in a compromise settlement in the case, and which ones are still going to be open. This is not a request for any commitment on the corps' part or your part as to where you stand on those issues, since you are in the process of ne-

gotiating. I understand that in negotiations sometimes you take a little different position than you really want to arrive at in order to settle the matter as favorably as you can to your position.

It just strikes me that if a substantial number of the controversies are involved in this litigation over interim regulations, and if EPA is in consultation in the whole process, setting the controversy might be a good starting point from which we could proceed. I would encourage you as I would encourage Mr. Ruckelshaus and the environmental people to try to resolve the issue because it certainly is a much more advantageous way for all of us to proceed rather than being adversaries at all times in these controversial matters.

I commend you for trying to work it out. I hope you will work it out, and I believe it could give us some direction, Mr. Chairman, as to what the language of section 10 ought to be if that can be done in any reasonable timeframe. In that connection, when will you be looking at the proposal?

Mr. GIANELLI. I have it before me now. I need some staff briefings with respect to exactly what it would do and doesn't do. Again, I think you have to remember that that litigation was brought by those groups as a result of some interim final regulations which we published in 1982.

Mr. SNYDER. I am aware of that. On the interims, I would assume those settlements would reflect themselves in permanent regulations.

Mr. GIANELLI. Yes, but again, and I want to reserve until we get a chance to sort them all out, I don't think it hits many of the major issues. Certainly any settlement you can reach on any of the issues does help the process. Let me point that out.

Mr. SNYDER. Thank you, Mr. Chairman.

Mr. ROE. Mr. Albosta?

Mr. ALBOSTA. Thank you, Mr. Chairman.

I certainly want to agree with most of the things that have been said by the members, but particularly your testimony about the problems the corps is experiencing in trying to have an ongoing program in this country of improvements in our flood control protection and our harbors and our disposal problems. I want to say that I can cite some incidents in my own area where it seems like it is an endless line of redtape that has been developed that the corps just can't get over in trying to implement a project that isn't even a big project in terms of what normally is considered big in this country.

I would like to recommend to you that you would present to this committee those things that you don't think that you can do administratively, and that we should do legislatively, to undo this knot of redtape and indecisiveness that has been created by Congress, and let us know how we can best undo that.

[The information received from Mr. Gianelli follows:]

You also asked for my views on what legislation may be necessary to overcome the many bureaucratic problems associated with the 404 program. In my view the foremost issue is the jurisdictional scope of the program. We have not been able to find two scientists who can agree on where the jurisdiction should be. Further all the scientific approaches, no matter how technically sound, are still too complex for the vast majority of the public to understand. The areas which may need legislative attention area:

1. Scope of jurisdiction
2. Clarify the nature of the 404(b)(1) guidelines
3. Clarify the general permitting authority (404(e))
4. Reduce the impediments to State program transfer (404(g)-(1))
5. Expand the exemption for Federal projects with congressional endorsements (404(r))
6. Clarify the Federal/State relationship concerning maintenance of navigation (404(t))
7. Clarify responsibility and accountability among Federal agencies
8. Clarify the scope of authority of the States under section 401

I must caution, however, that these are my own views and not necessarily those of everyone in the administration.

Mr. ALBOSTA. I would ask Mr. Ruckelshaus and EPA to do the same thing because I think it is important that we continue to have some type of program in this country to improve our harbors and to continue to provide flood protection. I don't believe that we can continue to produce agricultural commodities, for instance, the way we have unless we can find new sources of land. As you say, many of the wetlands are being drained. The corps isn't necessarily by disposal taking up the most of those wetlands.

I believe that many of those wetlands are being developed through private ownership themselves. And some States are legislating what can be done with wetlands now. I don't have anything against wetlands. But I think I can show incidents where wetlands have been created by the Fish and Wildlife simply by not allowing the corps to have a cleaning program or a dredging program where they can maintain the outlets on those streams. And pretty soon the rivers just simply back up and create wetlands.

I don't believe that would be the intent of Congress. I don't think Congress would want to have situations created where we could not dredge or could not clean rivers and would create wetlands simply because we would not allow through the process anyone to move forward. I again sympathize with you and ask that you would try to come forward to this committee, and I credit the chairman for these hearings and trying to resolve the issue of redtape in an indecisionmaking that has been created by Congress and trying to straighten that out.

Have you any idea what might be some of the cost of these projects and all of the redtape that is associated with them, and how we might be able to eliminate some of that?

Mr. GIANELLI. We ran through an estimate of that, Mr. Albosta. What we did was to assume certain delays in large public works projects. It seems to me we added up a billion dollars a year very easily in terms of the cost of people being delayed by the 404 program. I think my opinion is that it is probably a conservative figure. I would invite the committee to call in the people from New York on the Westway project that has been alluded to, and find out what the cost escalation has been of that Westway project since 1977 today, then to answer the question, are the issues worth the cost. I don't know. That is up to the Congress to decide.

Mr. ALBOSTA. I think we have got enough examples, and Congress has gone through some of them since I have been here, such as the snail darter.

Mr. GIANELLI. Yes.

Mr. ALBOSTA. And some of the others that simply did not hold true. I have had the Fish and Wildlife Service tell me that a fish

will never enter a river or make that its habitat if it has been cleaned. We did ponds, fish ponds all over to raise fish. And they are manmade ponds. I just simply do not believe that. I think in most cases, this has been overstated and overexaggerated in terms of what wildlife can be created. Most of the time in my observations when you create something by man, you also create at the same time something that the wildlife can use, particularly in those areas that are wet because for one reason or another, you get a different variety of fish, perhaps, but it is still a fish.

I think it is very important for us all to remember that we have to have a relationship between those people that want the sports and wildlife refuges, with those that need the environmental quality or protection of programs. So we have to try to work that out and find a way to work together.

I appreciate your testimony here today and hope you can furnish for the committee some idea of what you believe needs to be changed legislatively.

Mr. ROE. Mr. McEwen?

Mr. MCEWEN. Thank you, Mr. Chairman.

Mr. Gianelli, in the 1977 changes to the Clean Water Act, one of the recommendations was for the States to take over the 404 program. It is my understanding no States have done that as yet and I wondered if you had any insight as to why that is the case.

Mr. GIANELLI. No, I think there are several reasons. Probably there is considerable expense connected with that. In some of the discussions we have had, I think the States would be willing to assume some of the responsibility if the Federal Government gave them funds to do that. Obviously we haven't been in a position to do that. As I recall—Mr. Rees can help me out on this—I think one of the States that moves farthest in this direction is the State of Michigan which has indicated very seriously it would like to take over the 404 program. We would be delighted if they would. But I would say that probably the cost factor is one of the biggest reasons why the States haven't been willing to assume that responsibility.

Mr. MCEWEN. I am assuming that if an area wanted to take over that responsibility that you would have no objection.

Mr. GIANELLI. We would be delighted. My personal opinion is that States are in a better position to administer the program than the Federal Government.

Mr. MCEWEN. Are you familiar with the Great Miami River Basin in Ohio around Dayton?

Mr. GIANELLI. Generally, not very specifically, Mr. McEwen.

Mr. MCEWEN. If they wanted to take over this responsibility, you would have no objection to turning it over to the Miami conservancy district?

Mr. GIANELLI. I think we look to the States, Mr. McEwen, as the logical governmental entity that perhaps ought to assume the program. I don't know whether you could break it down below the State level or not because the States have some overall responsibilities in terms of water quality and so forth already. I am not sure whether you could break it down into a smaller subdivision than a State if you were to transfer the 404 program.

Mr. McEwen. You are not congenitally predisposed to opposing it then.

Mr. Gianelli. No, but I think we would want to hear from the State itself on that issue and look at it pretty closely. I am suggesting the reasons why we have looked to the States rather than individual entities within the States.

Mr. McEwen. I have been reading Mr. Ruckelshaus' testimony and observed he made reference to the 40-percent improvement to the permit process which is a concern of his. To what do you attribute the success of that?

Mr. Gianelli. The success can be attributed directly to the fact that we don't have a half a dozen elevations. We only have two. What we are able to do is by virtue of the fact we only have two elevations in the process now, rather than five, I guess it was before, that very material has cut down the time it takes within which to process applications.

In addition, I think we have really worked on the corps and the corps has done an excellent job under General Wall in terms of its own administrative activities to speed up the process in terms of scheduling conferences in advance of public notices to try to resolve some of the issues, meeting with the parties in advance, trying to work out problems.

So I think there has been a combination of things which have resulted in our being able to reduce the time to process the average application.

Mr. McEwen. Thank you, Mr. Chairman.

Mr. Roe. The gentleman from California, Mr. Packard.

Mr. Packard. Thank you, Mr. Chairman.

I come out of local government, Mr. Secretary, and I have felt the frustrations of the process of trying to get approvals of various projects. And your directive was to improve that process, which of course you have addressed in your testimony. I sense that there have been some significant improvements in reforming the process. Have you been able to determine if any cost savings to administering the process would result from these reforms?

Mr. Gianelli. Oh, yes. I think any time you can shorten the time within which the Federal bureaucracy has to deal with an item, you are going to have substantial cost savings. We have not looked at the cost savings with respect to the administrative agencies.

Mr. Packard. Yes.

Mr. Gianelli. I was responding earlier to a question about the applicants. But I am sure there will be substantial savings we have not evaluated.

Mr. Packard. There have been no figures estimated?

Mr. Gianelli. We haven't developed any as far as I know, Mr. Packard.

Mr. Packard. All of this applies to the Clean Water Act that we are now deliberating upon as a committee and as a subcommittee. Do you have any recommended changes in the Clean Water Act that would lend themselves to improving water quality and at the same time improving the administrative reforms that you are looking at?

Mr. Gianelli. I think Mr. Ruckelshaus will be speaking for the administration with respect to general provisions of the art which I

know the committee has been deliberating. My testimony has focused solely on section 404. I think I have given the committee my views with respect to that program, what we think is needed in connection with efforts to simplify and streamline the program. Again, in responding to a question I think Mr. Edgar pointed out, I think the administration in due course will make some recommendations to the Congress on legislation which would improve the administration of 404. But that is all that I have been dealing with.

I am sure Mr. Ruckelshaus will deal with the much broader issues of the Clean Water Act.

Mr. PACKARD. But in your review of the 404 procedures and regulations, you have not uncovered in your mind or been able to make recommendations to Mr. Ruckelshaus changes that ought to be made in the Clean Water Act itself?

Mr. GIANELLI. No. I don't think we have focused our attention mainly on those matters; 404 is our primary concern.

Mr. ROE. Are there any further questions of the Secretary?

Mr. EDGAR. Thank you, Mr. Chairman. I appreciate your patience. I didn't want to let overlooked a comment you made in your opening statement dealing with land use and whether or not the Federal Government should have any responsibility to land use. I wonder what your personal views are on that issue?

Mr. GIANELLI. My personal views are I guess, Mr. Edgar, that land use is a matter which should be handled by local jurisdictions, primarily by virtue of the zoning process and what other processes might be available to local government. It seems to me they are better able to deal with that issue than, for example, the Federal Government.

Mr. EDGAR. I would respond that that is true 98 percent of the time, but isn't it true that particularly along the watersheds of our Nation, the wetland areas of our Nation, that the zoning practices of local governments have not been efficient and sufficient to protect their bad decisions as it relates to land use, as well as alternatives to flood control?

We have a community called Delaware County which I represent most of. We have 49 different townships and boroughs. In those 49 townships and boroughs, there were parks and forrests and golf courses, much of which have now been overcome by shopping centers, industrial malls and apartment complexes. Each of those individual townships and boroughs have their own township zoning practices along Darby Creek, along Chester Creek. When the corps has been asked to come in and respond to flood control and problems, they have done extensive studies, great studies, indicating that loss of life could have been prevented in every one of the floods in my communities had the zoning practices of the local communities done a better job.

That is upstream communities done a better job in protecting the lower stream communities. Yet, there is no authority either at the State level or the Federal level to get the attention of a local zoning board which may be made up of volunteers appointed by a local township or boroughs within our community.

So I find it very difficult to simply brush it aside and say that the local communities are sufficient to handle the problem because the community in which the flooding may occur may not be the

community that needs to make the land use changes to prevent that flooding in the future. It may be caused by bad zoning and bad land use policies upstream.

How do you respond to those kinds of statements?

Mr. GIANELLI. My own view, Mr. Edgar, is that I think the Federal Government is working in a number of ways to assist local agencies, for example, just in the area of flood plain zoning. The corps does have the capability and has made, as you point out, studies with respect to areas that might be subject to innundation. That is reflected to the local interest. I wouldn't say that just because local interests haven't been able to address all of the issues that might come up with respect to zoning that they aren't the agencies that should do it.

I think probably we all, Federal agencies, State agencies, and everyone should give them some assistance. But it seems to me that you need to be very careful that either the Federal Government or even the State government doesn't tread on what a lot of us feel perhaps maybe is a basic local responsibility and that is the area of zoning.

Mr. EDGAR. Let me continue to take issue at this point. The city of Chester had a terrible flood after Hurricane Agnes and there was loss of life and the Army came in and did a very good study. Not one recommendation has been approved by any of the townships and boroughs. The community of Darby, bankrupt community of poor minority people who are downstream from upstream communities, they get flooding about once a year.

The corps did an extensive study and said the way to handle this problem is to stop development in the flood plain, to move people out of the flood plain, and to make nonstructural alternatives possible by better zoning practices. Not one recommendation has been accepted or approved. Efforts have been made in each of the townships and boroughs upstream to convince them they should so something. They simply say:

> It is our authority, our jurisidction to do what we please with our communities. If we can open a drainage area and let the water go to the next community, it is the next community's problem of solving it. If we put a parking lot in place and it diverts water into another community, and floods that community, that is their problem.

I wish the idea were there where some units of government, or county government or State government, would take the initiative of banging some heads together, but it is not happening. I think we are really blinded if we don't recognize that the Federal Government, as difficult as it is, may have to make and help make some land-use decisions at the very local level to protect wetlands, to protect loss of life, to protect additional flood damage occurring. And we are in real trouble if we simply think that the local units of government in all cases are going to respond willingly and lovingly to your recommendations.

Let me go to my second point, then I will conclude. Can you give the committee the number of permit requests that you get on an annual basis?

Mr. GIANELLI. I think there are about 18,000, Mr. Edgar, as I recall last count.

Mr. EDGAR. How many of those are approved routinely?

Mr. GIANELLI. Almost all of them.

Mr. EDGAR. How long does it take? Is it the average for 120 days for all of those?

Mr. GIANELLI. The average was 120-some odd days for all of them. Now it is down to something like 80 or 82. That is an average for all of them. That is a little misleading, but it is the average.

Mr. EDGAR. So it is less than 3 months?

Mr. GIANELLI. Yes.

Mr. EDGAR. That it would take to get an application?

Mr. GIANELLI. Yes.

Mr. EDGAR. Most of them are approved?

Mr. GIANELLI. Yes.

Mr. EDGAR. It is the exception that is disapproved?

Mr. GIANELLI. Yes.

Mr. EDGAR. I want to close with this one comment about your chart. I like your chart. It is a fun chart; nice long thing. I want to compliment you on your chart, but I want to draw your attention to your smiles that you have put up on your chart. If you will notice the smiles are OK up to where they apply for an application and where you apply for a permit. Get to public hearings, it looks like it implies that the corps doesn't like public hearings because you have got kind of a sad face. Then you go to environmental assessment and you go to a frowning face. Then you go to denying a permit and I know the corps, you have just said, denies very few permits.

But it looks like you cry when you deny the permit. Then you get over there where EPA and the others make requests for evaluation. And because of that bureaucratic headache that also causes you some concern. I am not sure what you are doing at the end here, spitting out something out of the smiles, but I don't know that they add to your simplified flow chart.

I just thought I would bring that to your attention.

Mr. STANGELAND. Would the gentleman yield.

It could well be that the faces are not corps faces but rather project sponsor faces.

Mr. GIANELLI. That is what they are, Mr. Chairman. These are the faces of an applicant who has gone through this tortuous route. First he is happy. Then he is pretty sad because of what he finds himself subject to. Then he gets over to the end and I don't know what you want to say about that, but that is the applicant, not the Government, Mr. Edgar.

Mr. EDGAR. I guess maybe we ought to put two separate sets of smiles. One is the smiles that would represent the corps face. And maybe the other set of smiles ought to be that which represents public interest.

Mr. GIANELLI. Well, you have got to be careful on that one, Mr. Edgar.

Mr. EDGAR. I know public interest is a tough one.

Mr. GIANELLI. Public interest is a vague sort of a thing so I think you need to be careful. I suggest maybe under certain cases that could be the public interest, those faces, too.

Mr. ROE. Are there further questions?

Mr. ALBOSTA. Mr. Chairman, I have just one. I just wonder if the corps has ever experienced, Mr. Secretary, any particular incident

where you have created an environmental problem by some type of spoils disposal in a wetland area.

Mr. EDGAR. Would the gentleman yield?

Mr. ALBOSTA. I would like to get an answer to that question first.

Mr. GIANELLI. I am sure there are some cases where the corps has approved a permit where the environmental organization would feel it has caused great damage. Maybe Mr. Edgar wants to give a case, but I don't think I can cite any specifically right now.

Mr. ALBOSTA. Well, it just seems to me that most of the time it is an effort to stall the project. And I just wanted to make that point.

Mr. ROE. Let me suggest the following. I want to ask just one more question for the record. I believe you mentioned in your testimony that, or someone mentioned, I think you did, Mr. Gianelli, that there was only one veto by EPA over the whole last couple of years.

Mr. GIANELLI. I think someone else made that point, and I think that is true. EPA has only exercised a 404 veto, I think, once.

Mr. ROE. Have you any observations to that? Let me frame the question better. It seems to me we are trying to bring coordination and organization together. We know we have got all kinds of conflicts involved and conflicting laws and so forth, and we are communicating. The corps is always subject to a little bit of, what would you say, confrontation. What would be your observation, only one veto? That seems kind of strange.

Mr. GIANELLI. I think perhaps you ought to ask EPA that. We have two cases now, I think, that are pending on which EPA is considering for using the 404(c) veto. But I think the fact that it is there represents a threat. I think, as the Congressman who appeared before me indicated, it is his intention that the veto be exercised more frequently. I think his legislation is aimed at requiring EPA to exercise it more frequently. So it is there, whether it is used or not.

Mr. ROE. The Chair didn't miss that. What I am trying to get at is just for the record that the fact remains that the opportunity for EPA to agree or not agree was there and you are talking about 18,000 applications a year.

Mr. GIANELLI. Yes.

Mr. ROE. And EPA only objected once. They weren't precluded from objecting 18,000 times, were they?

Mr. GIANELLI. Not as far as I know.

Mr. ROE. Let me suggest the following: I think that your testimony has been excellent this morning. You have obviously stimulated a great deal of interest on not only the—well, on behalf of all of the members. I think you have brought into very, very clear focus a major issue involved, above and beyond the timeframe is the question as to where the responsibility should lie, and how we move it along, how we serve the public. And it seems to me that your testimony is extremely valuable to us in our whole thought process.

I want to thank you for your patience this morning and excellence of your presentation. And you know, let me make one more comment. Having gone through a year's study with the corps and having observed the order of magnitude of their problems, it seems to me the time is at hand around this place where we may disagree

on some solutions, and there may be voids to be filled in the legislative process and administrative process. But it is about time the corps got a little credit for some of the work it is doing, too. So I just wanted to make that point to you.

Mr. GIANELLI. I think the corps does an excellent job under very difficult circumstances sometimes, Mr. Chairman.

Thank you very much.

Mr. ROE. Thank you. No further questions?

We thank you for being with us.

Mr. GIANELLI. Thank you?

[Subsequent to the hearing, supplemental questions were submitted to Mr. Gianelli by Representative Stangeland. The questions and responses follows:]

DEPARTMENT OF THE ARMY,
OFFICE OF THE ASSISTANT SECRETARY,
Washington, D.C., January 10, 1984.

Hon. ARLAN STANGELAND,
House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN STANGELAND: This responds to your November 29, 1983, letter raising five additional questions concerning my testimony of November 15, 1983, on the Clean Water Act. I understand this information will be added to the hearing transcript.

My responses are enclosed. I appreciate the opportunity to appear before your Committee and to provide this additional information. I believe firmly that given a better regulatory and statutory framework, we can achieve the desirable goals of the Clean Water Act with much less bureaucracy, less delay, and much more responsiveness to the public than is now the case.

WILLIAM R. GIANELLI,
Assistant Secretary of the Army
(Civil Works).

Enclosure.

1. *Question.* During some of our earlier hearings, it was suggested that the Assistant Secretary of the Army as well as the Administrator of EPA be subject to suit to enforce his duties under the Clean Water Act. Would you please give us your view of this proposal?

Answer. I view such a proposal as unnecessary. Adequate provisions ensuring that the Secretary of the Army discharge his duties under the Clean Water Act already exist. For example, proposed regulations implementing section 404 of the Act are published in the Federal Register for review and comment. Public reaction to proposed regulations is fully considered in developing final regulations. These rulemaking procedures are subject to judicial review, as seen in *NRDC* v. *Callaway* and in the current litigation on Corps permit regulations. In addition, case-by-case implementation of the program has repeatedly been challenged, as seen in a number of cases on individual permit decisions. Furthermore, both the overall implementation and day-to-day operation of the program are subject to Congressional oversight, which has played an important role in development of the section 404 program. In summary, the system as it is now structured provides ample opportunity for public, judicial, and Congressional review of the program. Making the Secretary subject to citizen suits will not improve program implementation. To the contrary such a provision could be subject to abuse from unwarranted suits intended solely to delay permit actions.

2. *Question.* On page 3 of your statement you mention your continuing work with EPA to clarify the scope of jurisdiction for section 404 permitting. Do you have any idea how soon this may be resolved and a new proposal made?

Answer. We and EPA have worked diligently in trying to develop a definition of waters of the United States which would clarify the scope of jurisdiction. We have been frustrated at every turn. The state of the art is such that a wide range of views exist among technicians, policy makers and lawyers. As a result, we have not been able to come very close to a consensus on what the definition should be. I have concluded that legislation would be required if the current definition is to be changed in the near future.

3. *Question.* I am pleased that you are working to reach a settlement on the litigation of the July 1982 regulations. Do you see such a settlement being completed in the near future?

Answer. In December, we reported to the Judge in the litigation that we had agreed in principle with the 16 environmental organizations. However, separate suits on the same issues had been filed by the State of Alaska and the North Slope Borough of Alaska. As of this writing, we expect to conclude an agreement with the North Slope Borough within a few days. I regret however, that our negotiations with the State of Alaska have reached a stalemate. We are jointly searching for ways to break that stalemate. We remain hopeful of reaching a settlement agreement, and we are pleased and encouraged by our ability to work with the environmental groups to resolve mutual problems.

4. *Question.* In your response to Congressman Edgar's question about the percentage of permits that are denied annually, you stated that "very few" are denied. Please elaborate.

Answer. The actual denial rate is about 2.3 percent. However, that does not tell the whole story. Because of the complicated, burdensome process, about 20 percent of the applicants withdraw their applications before final actions are taken. We have no estimate of how many of those withdrawals might have been issued or denied had the process run to a conclusion. We suspect that most would have been denied or substantially modified. It is regrettable indeed that many projects succeed or fail on the basis of how well they withstand the administrative process rather than on their merits.

In addition, of the 75 to 80 percent of the applications which survive to issuance, about one-third of those are modified or conditioned as a result of the process. All too often the applicants have agreed to modifications or conditions in order to avoid delays which would result from the built in conflict resolution process. In addition, by focusing on procedure rather than substance, as much of the process now requires, we are diminishing our capability to reach sound decisions in a reasonable period of time.

5. *Question.* In response to a question from Congressman McEwen, you said that cost was the primary reason States have not assumed the 404 program. Are there any other reasons?

Answer. Cost was a primary factor. It should also be noted that the regulations established by EPA, with which States must comply, are exceedingly cumbersome and withhold from the States the ultimate authority to implement decisions. EPA has structured regulations with so many disincentives that States have simply not been very interested. In partial defense of EPA, the statute is very complex in this area and is far more technical and detailed than most statutes. This has made it difficult for EPA to draft regulations which would be attractive to states, but we feel a much better job can be done on these regulations. Another factor has probably been the bureaucratic morass and the notorious delay and public inacceptibility of the 404 program, all of which may have made states reluctant to get involved.

Mr. ROE. Now, our next witness this morning is Mr. J. Leonard Ledbetter, director of the Environmental Protection Division, Georgia Department of Natural Resources representing the Association of State & Interstate Water Pollution Control Administrators. We want to welcome you to the committee.

For the honor of welcoming you formally, I would certainly defer to my colleague and good friend, the Honorable Roy Rowland of Georgia.

Mr. ROWLAND. Thank you, Mr. Chairman.

Mr. Chairman, thank you for the opportunity to introduce to the subcommittee this morning one of the country's most outstanding environmental leaders.

Leonard Ledbetter has served with the Georgia Office of Environmental Protection for 18 years, the past 9 as director. He succeeded an almost legendary figure in that position, the late Rock Howard who started the office with himself and one secretary.

Georgia's environmental program now has a staff of some 380, and has become recognized as a model and a leader for the Nation.

Under Leonard Ledbetter, Georgia ranks right at the top among the 50 States in meeting State and Federal standards for clean air, clean water, strip mining control, solid waste management, and in all of the many programs he administers.

He has been selected for a number of national positions, and is currently serving on the President's task force to better delineate Federal and State roles in the environmental field.

It is a pleasure to introduce this morning Mr. J. Leonard Ledbetter.

Thank you very much for being here, Leonard.

Mr. ROE. Thank you for that splendid introduction, Roy.

Mr. Ledbetter, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS [ASIWPCA]

I. INTRODUCTION

Mr. Chairman and members of the Subcommittee, I am J. Leonard Ledbetter, Director of the Environmental Protection Division, State of Georgia. I am here today representing the collective views of my State colleagues in the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). The ASIWPCA commends the Subcommittee for its interest and commitment to the environment and we appreciate the opportunity to participate in these hearings.

The Association is the national non-partisan organization of the State Officials who, on a daily basis, implement the Clean Water Act. The 50 States, 6 Interstate Agencies, 3 territories, and the District of Columbia are represented. As professional managers of State Water Programs, the ASIWPCA membership is firmly committed to the environmental objectives set out in the Clean Water Act.

In the last decade, tremendous strides have been made in water clean up. Recognizing that this Subcommittee is aware of the December 1982 Lou Harris and Associates report, "A Survey of American Attitudes Toward Water Pollution", we are encouraged to note that the results indicate a majority of the public believe State and local levels of government will provide stricter enforcement of water pollution laws than what can be achieved at the Federal level.

ASIWPCA can assure the members of Congress and the public of the States' continuing commitment to the Clean Water Act objectives and a strong national water program:

States now manage over 70 percent of the National Water Program.

The Nation's waters are essentially fishable/swimmable.

Pollution loadings have been substantially reduced: In industry: 69 percent of BOD: 80 percent for suspended solids; and 75 percent for heavy metals. In municipalities: 57 percent for conventional pollutants; and 67 percent for heavy metals.

Billions have been invested by the nation's taxpayers and industries to control water pollution with remarkably successful results.

ASIWPCA contends that this progress in maintaining and enhancing the quality of our nation's waters is in large part attributable to the effectiveness of the State/Federal partnership and the fact that:

Water quality programs are implemented faster and more effectively at the State level.

Ambitious objectives and a limited program budget require efficient, flexible approaches.

A balanced program, using the various mechanisms contained in the act, is most productive.

II. SUMMARY HIGHLIGHTS OF ASIWPCA RECOMMENDATIONS

Section 106.—ASIWPCA supports maintaining the $75 Million authorization level in FY 84-88 for State implementation of the partnership established in the Clean Water Act.

Water quality standards.—States strongly support attaining the water quality goals and believe current law is adequate in that regard. The ASIWPCA endorses the concepts set forth in the regulations recently promulgated by the U.S. EPA.

Toxicity elimination and management strategy.—A National, technically sound process should be established to assess and control toxicity on a facility-specific basis. Such a strategy should be based on the successful implementation of Best Available Technology (BAT) and supplement technology requirements and water quality standards.

Pretreatment.—The pretreatment program for industries discharging into publicly owned treatment works should be improved. It is the understanding of the Association that a number of Congressional members are pursuing such reforms. The ASIWPCA Board of Direction believes legislation should embody the concepts outlined in this testimony to provide a limited time period for exemplary, existing local programs to seek approval.

Compliance deadlines.—Industrial compliance with Best Available Technology should be required no later than 3 years after effluent guideline promulgation—this will greatly enhance program credibility and effectiveness; and the §301(i) deadline extension should be expanded to cover all municipalities. By July 1985, municipalities should specify how and when compliance will be reasonably achieved.

Construction grants.—Municipal wastewater treatment remains a major challenge to the Clean Water Act goals. A sustained level of Federal commitment is important in that effort. While this program can always benefit from improvements, ASIWPCA suggests for the sake of stability and program management that Congress defer action in this area until the statutorily mandated reauthorization period under Public Law 97-117.

Nonpoint sources.—Primary responsibility for nonpoint source pollution control should remain with the States, who should be accountable for program management. The Federal Government should assist through research and development, demonstration programs, technical assistance, and financial incentives.

Permitting.—The authorized length of NPDES permits should be extended up to 10 years (with reopener provisions) to more efficiently use available resources. ASIWPCA supports partial delegation of the permit program.

Penalties.—Any expansion of Federal penalties should not jeopardize existing State NPDES delegation agreements. U.S. EPA imposed penalties should be used only when the State, after notice, has failed to act.

IV. ASIWPCA RECOMMENDATIONS

State officials are convinced that the existing law is fundamentally sound. There are, however, some refinements which could enhance program performance and expedite the National Clean Water Program.

A. State Management Assistance Under Section 106

ASIWPCA recommendation

The Association commends the Subcommittee for continuing to recognize the importance of section 106 State management assistance in the National Water Quality program. We support maintaining the current authorization level of $75 Million.

We are all aware that State management needs are significantly greater than the currently authorized amount, yet we recognize the fiscal crisis being experienced throughout this country. For this reason, the ASIWPCA supports appropriating section 106 funds, as a minimum, at the fiscal year 1983 level of $54.2 million.

Rationale

Section 106 State Management Assistance Grants are more fundamentally important to the National Water Program and the achievement of the Clean Water objectives than any other aspect of the Clean Water Act for a number of reasons including: section 106 provides the cohesiveness necessary for effective, comprehensive water quality management; and the cooperative State/Federal partnership depends upon each partner living up to their commitments as in any contractual arrangement.

Section 106 activities form the core of the National Clean Water Program and include planning, water quality standards, NPDES permitting, pretreatment, compliance, enforcement, and monitoring. As this subcommittee is fully aware, the Clean Water Act deadlines are approaching, the program is growing in complexity, and Federal requirements have increased. It becomes increasingly important under these circumstances that States be assured of sustained, adequate Federal support to their administration of the nationally required program.

The administration has suggested in the past that less section 106 funding is needed because set asides under section 205 can offset substantial reductions such as the 56 percent decrease proposed last fiscal year by President Reagan. ASIWPCA disagrees. Set asides under section 205(g) and section 205(j) of the Act have purposes separate and distinct from the activities supported by section 106. As such, they cannot offset reductions in section 106 funding without seriously endangering Title II objectives: section 205(g) funds are necessary first and foremost to meet state obligations under construction grant delegation agreements. Section 205(j) is targetted by law for specific purposes and most section 106 activities are not eligible (e.g. permitting and enforcement).

B. State Water Quality Standards

ASIWPCA recommendation

No further legislation is necessary on water quality standards. The ASIWPCA endorses the concepts established in the water quality standards regulations recently issued by the U.S. Environmental Protection Agency in response to State and public comment. After close scrutiny, ASIWPCA believes these provisions provide adequately for the continuation of:

(1) Strong anti-degradation policy;

(2) State authority to identify priorities, allocate resources, and implement requirements more strigent than Federal law;

(3) The technology-based effluent requirements;

(4) Protection of downstream designated uses; and

(5) Consistency with the requirements of sections 101(a)(2) and 303(c)(2) of the Clean Water Act.

Rationale

The State's role and responsibility in establishing water quality standards is an important aspect of the Clean Water Act's State/Federal partnership. The States have gained substantial water quality management experience using technology-based effluent requirements and water quality standards. As this subcommittee recognized in the 1981 Amendments (Public Law 97-117), a great deal of standards work remains to be done because:

Some standards were initially established without adequate information on their validity or appropriateness.

Congress and the public demand efficient investment of construction grants funds—water quality standards are used to define priority.

Sound, defensible standards require significant time and resources to develop.

C. Toxicity Elimination and Management Strategy [TEAMS]

ASIWPCA recommendation

In addition to supporting full utilization of BAT requirements and water quality standards, a Toxicity Elimination and Management Strategy (TEAMS) should be incorporated into the National Clean Water program. Specifically, the Association recommends that the National Clean Water Program provide, by a date certain, for:

(1) U.S. EPA to establish procedures and methods for biological assessment of acute and chronic toxicity of effluent and receiving waters,

(2) U.S. EPA to establish guidance on categories of industries and muncipalities which may need to conduct biological toxicity assessments,

(3) NPDES permittees to submit action plans for characterizing their effluent and conducting biological toxicity assessments,

(4) States to develop implementation strategies for eliminating toxicity from significant dischargers,

(5) NPDES permits to be revised specifying compliance with toxicity elimination (based on the permittee action plans and State strategies),

(6) U.S. EPA to place additional emphasis on providing States special technical assistance and adequate toxics research and development, and

(7) State participation in development of procedures, methods and guidance for implementation.

Rationale

The combination of traditional State water quality standards and Federal Best Practical Control Technology has generally been adequate to control conventional pollutants and appears to be providing a certain level of control for toxics. However,

the elimination of toxicity (not pollutants per se), under section 101(a)(3), is the next logical concern.

We want to stress that technology-based guidelines and water quality standards are a necessary part of the National program. For some parameters such as heavy metals, they are frequently the best mechanism for toxicity control. However they are not very useful in other instances. Criteria for hundreds of organics would be difficult if not impossible to develop from a technical or resource standpoint. The pollutant-by-pollutant approach has limited relevance to complex effluents.

A technically sound process with a biologically based protocol is needed to supplement the pollutant-by-pollutant approach in the control of toxicity on a facility-specific basis. A National mandate would provide positive direction for U.S. EPA, States, and NPDES permittees in their efforts to eliminate toxicity.

U.S. EPA and the States should jointly develop the methods and guidance to expedite toxicity control. Research and development as well as technical assistance must be strengthened particularly in the areas of environmental toxicology, complex organics analysis, and industrial abatement technology. Over the long term, these efforts will improve our understanding of biomonitoring techniques, human health effects, risk management, synergism, and allocation procedures.

New legislation should not retard the significant progress being made at the National and State level. Many States have instituted programs to eliminate toxicity and U.S. EPA has moved forward by drafting an approach which holds promise as a workable strategy. Several National seminars have been sponsored both by the ASIWPCA and U.S. EPA.

D. Pretreatment

ASIWPCA recommendation

Improvements are necessary in the national pretreatment program to more effectively and efficiently protect publicly owned treatment work (POTW) operation and the environment. It is the understanding of the Association that a number of Congressional members are pursuing such reforms. The ASIWPCA Board of Direction believes such legislation should embody the following concepts:

(1) POTW's with exemplary, fully operational programs should have a limited opportunity to request program approval—no delay in national program implementation should be allowed,

(2) Such municipalities must demonstrate in their request that their program:

Protects treatment facilities and the environment:

Satisfies section 402(B)(8) of the act,

Complies (or is on a schedule to comply) with secondary treatment and water quality standards;

Incorporates enforceable pretreatment requirements and sufficient resources, capability, and authority; to monitor and implement; and

Provides safe use and disposal of sludge.

(3) Alternative programs which are approved must: submit annual compliance reports; and establish monitoring programs to verify adequate environmental protection.

(4) Permits may be modified based on verification results. States should then be able to approve the alternative program for new sources.

Rationale

Pretreatment was incorporated into the Act to ensure indirect industrial discharges did not interfere with POTW operation, sludge management, or ambient water quality. ASIWPCA fully supports this effort and recognizes pretreatment is a necessary element of the National Water Program. States have a large interest in National pretreatment policy not only because they manage the National program but also because they develop and implement the program in some municipalities and are ultimately responsible in most States for full implementation of the Act.

It is widely recognized at the National, State and local level that the pretreatment program, as currently structured, is unworkable:

The pretreatment program, if fully instituted as defined, will dwarf the NPDES program in size and scope, and will cover many more sources,

Many communities do not have the time or resources to implement the very complex requirements—a simpler approach would be adequate. High administration costs would be met at the expense of other environmental priorities, and

In the 6 years since the 1977 amendments, the track record for implementation has been less than impressive.

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It is simply not good public policy to ask a municipality to dismantle a good program for the sake of national uniformity. Momentum is lost and the environment will not, necessarily, be better protected. In fact, in some States the national categorical standards have been proved less environmentally effective. We believe the Subcommittee can rectify the situation because the problem centers around process and procedures—not environmental objectives or requirements.

E. Compliance Deadlines—(1) Industrial Compliance Deadlines

ASIWPCA recommendation

Best Practicable Treatment [BPT].—BPT should be maintained as the minimum national treatment requirement for industrial discharges.

Best Available Technology [BAT].—BAT compliance should be required no later than 3 years after effluent guideline promulagation which U.S. EPA should complete by July, 1984.

Best Conventional Treatment [BCT].—BCT should not be required uniformly because of BPT's proven effectiveness in pollution abatement. Water quality need should be the basis for going beyond BPT for conventional pollutants.

Rationale

While the deadline for BPT was quite successful, resulting in substantial clean up of conventional and toxic pollutants, the same cannot be said for BAT deadlines. Effluent guidelines have been delayed and the situation is not likely to improve.

Arbitrary deadlines tarnish the credibility and stability of the Act. They have not been an effluent inducement to guideline issuance. It is difficult, if not impossible, to accurately anticipate the complex policy, administrative, and legal problems which inevitably lead to delay.

(2) Municipal Wastewater Treatment

ASIWPCA recommendation

Amend Section 301(i) to require muncipalities to: Formally complete planning and fiscal analysis by July 1, 1985 specifying how and when compliance will be achieved (with or without Federal funds); and

Comply at the earliest practicable date.

Rationale

Municipal wastewater treatment will be a major challenge of the next decade. This is not to say that industrial clean up is unimportant, but that municipalities lag far behind in meeting the minimum requirements of the law. As this Subcommittee is fully aware:

Construction grant needs far exceed the Federal funding available;

Water quality standards require substantial levels of treatment;

Compliance deadlines are ambitious; and

Adequate pretreatment must be institutionalized.

The compliance deadline was extended in § 301(i) under the 1981 Amendments for municipalities with Federal funding who will finish construction by 1988. However, further action is needed to address those municipalities who will not receive such funding but in good faith expected to participate in the Federal program. They should promptly prepared action plans for reaching compliance with the law. The reasonableness of any deadline will vary depending on the immediacy of the water problem, availability of alternative funding, planning required, and construction needed.

F. Municipal Wastewater Treatment Construction Grants

ASIWPCA recommendation

A sustained level of Federal commitment to municipal wastewater treatment construction grants is important to the National Clean Water Program. While this area can always benefit from management improvement, ASIWPCA suggests, for the sake of stability and program implementation, that the Congress defer action until the statutorily mandated reauthorization period under Pub. L. 97-117.

Rationale

The 1981 amendments significantly reformed and redirected the national municipal wastewater treatment program placing special emphasis on reducing Federal

funding assistance and increasing local accountability. The program is currently under significant transition in the States to meet the intent of Congress. Clear national policy direction and program stability is needed to maintain and build on this momentum. A thorough reexamination of the construction grants program should be made during the reauthorization period established in Pub. L. 97-117.

While the Federal Government has a clear responsibility to support municipal wastewater treatment, the needs identified ($118 Billion) exceed the Federal financial capability. States, local governments and the private sector are currently weighing their options—a recent ASIWPCA survey indicates many States are moving forward to establish alternative financial programs and strengthen local ability to comply with the law (see attachment). Several National ASIWPCA workshops have been held to foster this activity. We would ask that these efforts be reviewed in reauthorizing Public Law 97-117.

G. Nonpoint Source Control

ASIWPCA recommendation

Primary responsibility for nonpoint source pollution control should remain at the State level to efficiently and effectively promote pollution abatement. States are well underway in developing nonpoint source programs using regulatory and voluntary approaches to comply with the Clean Water Act. Their progress should be closely monitored.

The Federal Government should assist States through research and development of control techniques, demonstration programs, technical assistance, and financial incentives. Existing Federal funding programs, particularly in the Department of Agriculture, should be used to protect water quality. ASIWPCA recognizes after an appropriate period of evaluation, it may be necessary to further address nonpoint source problems in the law.

Rationale

The goals of the Clean Water Act cannot be met solely through point source control. Many of the Nation's rivers and lakes are adversely impacted by nonpoint sources and substantial improvements can be made with effective nonpoint source controls. However, this is not easily accomplished because nonpoint sources are particularly difficult to control. They are highly variable, have no defined point of origin and can be extremely diffuse. This requires a different management scheme than used for point sources.

Congress mandated that States develop and implement plans to assure that nonpoint sources do not preclude beneficial uses. These approved section 208 plans provide an excellent basis for clean-up. Indeed States are implementing their plans—many without Federal assistance.

States must have flexibility in continuing these efforts since problems are site specific; the appropriateness of regulatory and voluntary programs vary; and land use is historically a local responsibility. ASIWPCA also recognizes that much remains to be done and the Federal Government can make a very useful contribution.

Further amendments to the act should build on existing authorities and programs. In the process, it is important to maintain the public support which has been largely responsible for the progress achieved. The Subcommittee should examine not only the need for a new incentive program but also improvements in existing programs under other Federal Agencies. The latter, if administered correctly, could be of enormous benefit in nonpoint source pollution control.

ASIWPCA is currently working with the U.S. EPA on their report to Congress required by January 1984. The ASIWPCA States' Evaluation of Progress [STEP] report, a project the Association has undertaken with U.S. EPA and a recent membership survey should provide useful information for the report (see attachment).

H. NPDES Permits and Delegation

ASIWPCA recommendation

The Association supports partial delegation and authorization of up to a 10 year NPDES permit life (while continuing to use reopener clauses in all NPDES permits).

Rationale

The Association supports partial NPDES delegation. As this subcommittee knows, institutional considerations in States (some with large numbers of point source discharges) may preclude full assumption of delegable activities. There is no question that the Clean Water Act is implemented faster with less cost to the taxpayer at the

State level. U.S. EPA should take full advantage of State willingness to manage NPDES program components. However, in doing so, the law should not be interpreted or selectively applied to undermine that partnership.

The Association believes the authorized NPDES permit life should be extended from 5 to 10 years to more efficiently use scarce resources. Of course, NPDES permits should continue to include reopener clauses allowing permit modifications at any time for cause (e.g. adoption of effluent guidelines, revision of water quality standards, identification of toxics problems/process modifications). States have ample opportunity in exercising their reopener prerogative to review discharger performance and related permit limitations.

I. Penalties

ASIWPCA recommendation

Expansion of Federal authority under section 309 should not jeopardize existing approved NPDES State delegations. Congress should clarify that increased Federal penalties will not require changes in State delegated programs. Federal penalties should only be imposed when a State has failed to impose appropriate sanctions and the State has received 30 days notice from U.S. EPA of such finding.

Rationale

Proposals to expand US EPA's enforcement powers and penalty amounts are developing at the same time increased emphasis is given to delegating more responsibilities to the States. While the Association appreciates the objectives in amending section 309, the impact on NPDES delegated States (whose programs are well established) should be carefully considered.

Strong US EPA enforcement could encourage quick settlement of permit violations—but it is equally likely that the possibility of later US EPA action will interfere with State ability to negotiate clean-up. The potential impact of such "double jeopardy" merits close attention.

J. Dams

ASWIPCA recommendation

Direct regulation of dams under the Clean Water Act should rely primarily on the section 401 certification process and section 404 to control water quality impacts. NPDES permits should not be required at this time.

U.S. EPA should study water quality problems associated with dams and recommended appropriate abatement techniques.

Rationale

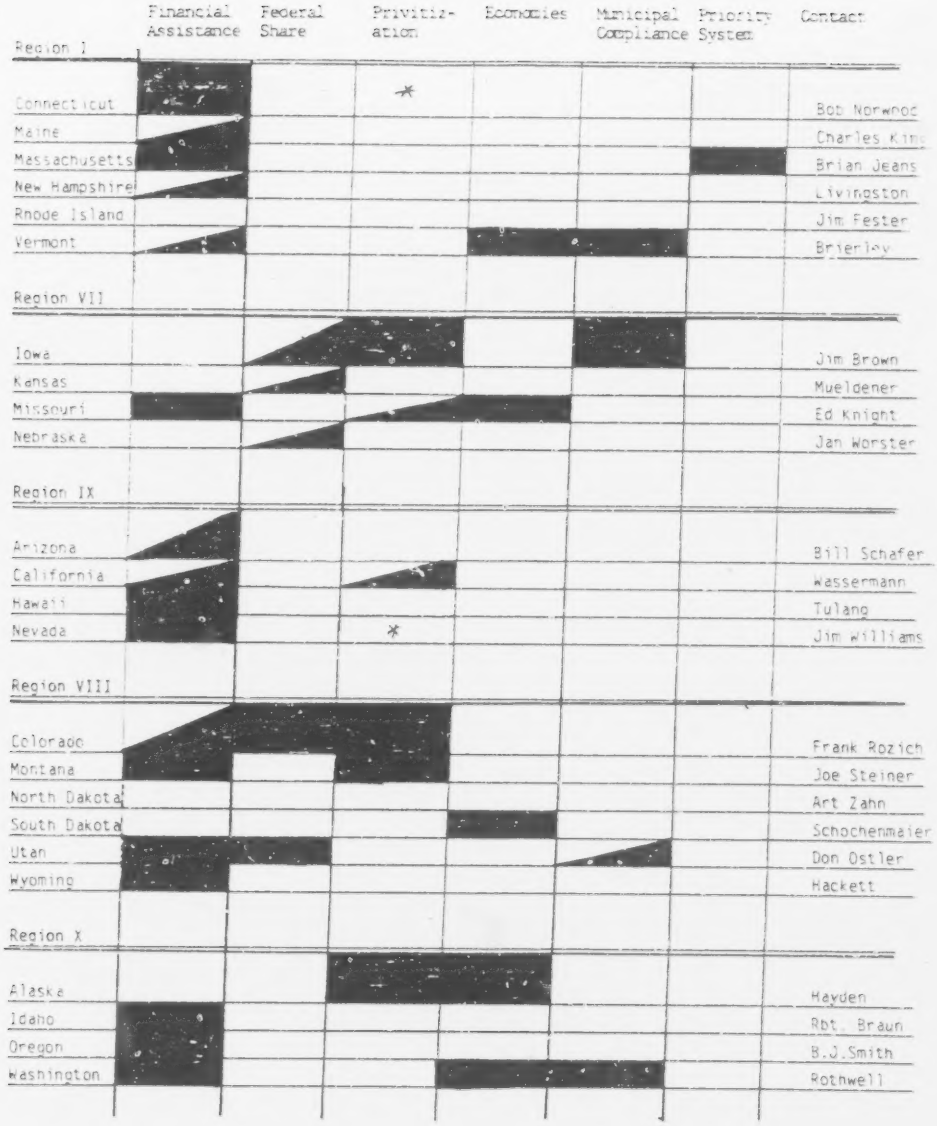
Recent reconsideration of the Clean Water Act's application to dams has centered around the issue of whether dams should be point or nonpoint sources.

The Association believes this issue has little bearing on the ultimate question—specifically, what is the appropriate process for protecting water quality from the adverse impacts of dams?

We do not believe the NPDES process is the appropriate avenue. The State certification process under sections 401 and 404 of the act has been very effective in protecting water quality. ASIWPCA does not anticipate that application of this process to dams will adversely affect current workload. However, since the magnitude of these problems is not fully understood, further study is desirable.

PROGRAM AREAS IN WHICH STATES HAVE UNDERTAKEN INITIATIVES
IN 1982 and 1983
TO PROMOTE MUNICIPAL WASTEWATER TREATMENT*

	Financial Assistance	Federal Share	Privitiz-ation	Economies	Municipal Compliance	Priority System	Contact
Region IV							
Alabama							
Florida	■	■		■		■	Rusty Jones
Georgia	■						Mimi Drew
Kentucky	◢						Jack Dosier
Mississippi	■				■		Gatewood
North Carolina	■			■	■		Barry Royals
South Carolina	◢						Walter Taft
Tennessee	◢			◢		◢	Bob King
							Bob Odette
Region V							
Illinois			*				
Indiana	◢						Ron Drainer
Michigan				■		■	Bob Perno
Minnesota	◢						Hinshon
Ohio	◢		◢	■			Duane Anderso
Wisconsin							Greg Binder
							Kopecky
Region II							
New Jersey	◢	■	◢			■	
New York	◢						Nick Bender
							Fred Esmond
Region III							
Delaware			*				
Maryland	*						Aurich
Pennsylvania	◢		*				Earl Quance
Virginia	◢						Drawbaugh
West Virginia	◢						Ernest Simmon
							Warren Means
Region VI							
Arkansas	◢						
Louisiana							Bluebaugh
New Mexico	◢						Tim Griggs
Oklahoma	*	◢					Holland
Texas							Jon Craig
							Emory Long



Legend:

--- Program under preliminary consideration

--- Program established

--- Program under development or serious consideration

STATEMENTS

October 1983

THE STATES' Water Quality Fact Sheet

ASIWPCA'S PROJECT ON EVALUATING WATER QUALITY

The Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) is in the process of analyzing and compiling State responses to a newly developed report for describing the past decade's progress in improving water quality. The report form has been designed through a pilot project funded by the U.S. Environmental Protection Agency's (EPA'S) Offices of Water and Policy and Resource Management. The project began in October 1982, and is expected to be concluded early in 1984.

Known as STEP (STates' Evaluation of Progress), the project is expected to improve the States' ability to describe their water quality program activities and results. Ten States participated in developing the format for presenting information on their most important water quality achievements. The ten are: Vermont, New York, Delaware, Georgia, Illinois, Texas, Kansas, Utah, Arizona and Oregon. Representatives from these States have been serving on a project Task Force that has conducted many of the key project activities.

A test run of the draft format was completed in April by these States. Based on the findings of the 10-State test, the report format was discussed with ASIWPCA members in a series of nine Regional Workshops attended by representatives of 42 States. Reports were requested from all States and have been submitted over the past 2 months. Their contents will be synthesized in a State/EPA Report to Congress on the past decade's progress in water quality improvement; an Appendix composed of the individual State responses will also be prepared.

STEP's final product will be a report to the EPA Administrator providing the participants' recommendations about institutionalizing the water quality reporting system and possibly expanding its application to other environmental media.

Policy direction for the project is being provided by a Steering Committee co-chaired by J. Leonard Ledbetter, Director of the Georgia Environmental Protection Division, and Robbi J. Savage, ASIWPCA's Executive Director. Among the Committee's members are two senior officials from EPA Headquarters, 3 Regional EPA Administrators, and a representative of the National Governors' Association's Water Management Subcommittee. The 10 States noted above are also represented on this Committee.

Comments or questions about the project can be directed to Carol Jolly, the Project Manager, at (202)624-7782.

Association of State and Interstate Water Pollution Control Administrators

Hall of the States • 444 North Capitol Street, NW, Suite 330 • Washington, D.C. 20001

Robbi J. Savage — Executive Director (202) 624-7782

Mr. ROE. Please proceed.

TESTIMONY OF J. LEONARD LEDBETTER, DIRECTOR, ENVIRONMENTAL PROTECTION DIVISION, GEORGIA DEPARTMENT OF NATURAL RESOURCES, ON BEHALF OF THE ASSOCIATION OF STATE & INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS, ACCOMPANIED BY LINDA EICHMILLER, DEPUTY DIRECTOR, ASSOCIATION OF STATE & INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS, AND STEVE RIECK AND CANDY PENN, OFFICE OF THE GOVERNOR OF GEORGIA

Mr. LEDBETTER. Thank you, Mr. Rowland, for that fine introduction.

Mr. Chairman, I appreciate the opportunity to come before the committee again to speak on behalf of the States and ASIWPCA. You are quite familiar with our organization. The staff of this committee has worked with us over the years and we are most appreciative of the open approach that is used in this committee; the accessibility the States have to your staff; and this opportunity today to express our views on several subjects.

With me today is Linda Eichmiller of the staff. Also I have with me this morning Steve Rieck and Candy Penn of Governor Harris of Georgia's staff.

I do appreciate you making our entire statement a part of the record. Instead of reading our summary to the subcommittee this morning, I would like to touch on two areas. I would like to take a few minutes to talk to the committee about progress the States believe have been made under the Clean Water Act over the last 10 years. We think that Congress in the Clean Water Act has given us a very workable approach. The record demonstrates that that partnership can be effective and States are committed to continuing this partnership under your leadership so that we can continue to improve the waters of this Nation. We are committed to the goals of the act and we appreciate the directions that you have set forth.

I would like to briefly tell you about a project that we have underway with EPA in which the States recognize the difficulty you here in Congress have in assessing where we are in our movement toward the goals of the act. So we proposed well over a year ago that we work with EPA to have the States use the same format so that Georgia, Vermont, Texas, California, New Jersey, and the other various States would put together a progress report periodically using the same format. EPA was delighted to work with us on that. We are well underway with that.

I am pleased to tell you almost all States have in voluntary fashion come forward and followed that format and put together information which we are presently compiling. We hope to provide to Congress with the report after EPA has had an opportunity to review and coordinate with us in late winter or early spring. We think that it will be very useful to this committee, in particular in the future as you look at the progress we are making.

There are a few highlights that I might touch on: More than 70 percent of the clean water program is now administered by the States. In looking at the reports that have been submitted which I have recently reviewed, most of the Nation's waters today are

meeting the fishable/swimmable goals of the act, if you look at the miles of stream and acres of lakes we have throughout the Nation.

We have reduced the pollution loads substantially, both from an industrial standpoint as well as a municipal standpoint.

We have invested billions of dollars of the Nation's taxpayers' money to accomplish those goals. We still have some major challenges that I want to come back and talk about a little later, but I did want to point out in the beginning that we have made tremendous progress in this Nation with the clean water program.

What I would like to do, to expedite my comments so we can spend most of the time addressing questions you may have is to briefly touch upon a number of issues of concern to ASIWPCA. Those would be the section 106 funding of the States programs, water quality standards, a toxicity/elimination strategy pretreatment, compliance deadlines, construction grants, nonpoint sources, the NPDES permit program, and penalties.

If I may I will just take a few minutes to touch on each of those very briefly. Section 106, of course, is the part of the act that provides, to those of us who are managers in the States, the funding in conjunction with our State funds to manage the program. In recent years that funding has been rather constant from the Federal level and in many States, including my own State, we have doubled the State input to the process. So we are delighted to see this committee is considering maintaining the $75 million authorization level for the fiscal year 1984-88 period, and we certainly encourage you to do that.

On the subject of water quality standards I think this committee is quite familiar with the controversy that has surrounded that subject over the past year. We in the States, and ASIWPCA have devoted many hours in reviewing and commenting and meeting with EPA trying to address some of the issues that surfaced. We are pleased with Administrator Ruckelshaus' recent decision to go forward with several changes, and those changes are now in the Federal Register.

We think, based on where we are with that program, that it would not be helpful to us at this time to have any further legislation on water quality standards. Instead we should continue moving forward with the law as it is and with the new rules as Administrator Ruckelshaus has promulgated.

Let me talk to you a minute about something I referred to earlier as the toxicity elimination strategy. We refer to that as elimination and management strategy because we see a problem facing us in the States is that we have written the NPDES permits and required BAT and evaluated those requirements against water quality standards. But in many cases the question still lingers. Do we have some toxicity in those receiving waters? Is there toxicity in the effluent that could impact the receiving waters? So we have worked with EPA, and with the leadership of many of the States developed a process involving biomonitoring and bioassays.

So after you have installed BAT and are assured that the water quality standards that are on the books in that given State are being met, many of us now, including the State of Georgia, are coming back and putting into the NPDES permit some specific requirements for the discharger to put together a plan to conduct

monitoring and bioassays on their effluent prior to it being discharged to the receiving waters.

The advantage of that approach is that it enables us, on a case-by-case basic where we suspect there might be some toxicity, to go through a standard procedure or scientific approach developed by the States and EPA to address that question in detail. When it is determined that there is toxicity, then you can proceed through the process of elimination to determine what is causing that, and then require that the toxicity be addressed.

In some cases we have had industries change their manufacturing process. They have eliminated some particular chemical compound they were using and used a substitute that would not be toxic. So there are several advantages to that approach. It certainly is much more effective and more expeditious than trying to crank out a categorical standard that would include every imaginable organic and inorganic chemical.

So we would like for the committee to address that issue possibly in the amendments.

On the subject of pretreatment, it ties very closely to what I just talked about with the toxicity elimination. Primarily what we are trying to do through the pretreatment process is to protect the integrity of the waste water system in the community. Unfortunately the program that is there now has been very cumbersome under the present act as it has been administered.

We in some of the States have gone forward and put into place pretreatment programs. In my own State of Georgia we have a pretreatment program where we are actually issuing permits to approximately half of the industries in the smaller communities and controlling, through a permit process, the pretreatment program. In the other approximately 50 percent we have mandated that the city use a permit process or a sewer use ordinance get on with the pretreatment program.

We are concerned, as EPA proceeds with the categorical standards, a long period of time might be involved. This will slow down the program and create some problems for those of us at some later date where some of the numbers could vary slightly. So we would like to see language added allowing local governments and the States to work together through the NPDES permit program specifically to allow a local pretreatment program to be reviewed and approved if it meets certain criteria that you could set forth, such as having the publicly owned treatment works meet water quality requirements and effluent standards or be on an enforceable schedule to comply. In addition, such facilities should have enforceable pretreatment requirements and certainly necessary resources for monitoring and implementation.

Moving to compliance deadlines, another subject, I think it is obvious to all of us that the deadlines are not going to be met. We would recommend very briefly two approaches. Industrial compliance with BAT should be required within 3 years, or earlier, if possible, after the effluent guidelines are promulgated. For municipalities it is a much greater problem. For many years, many of our local governments have been on a priority funding list, looking forward to grants. The authorized level for grants often exceeded the

appropriated amount and those communities have not been moving forward on this list.

States think it is time we require the municipalities to address the issue. There are innovative and alternative financing techniques being put into place in many of the States now, including our own State. And with the reduction in the Federal percentage, and the elimination of reserve capacity, those innovative and alternative financing techniques can be more attractive to the local governments than they have been in the past. In short, we need to put some emphasis on the local governments proceeding instead of just sitting on the waiting list for the Federal grant that may not come, ever.

Two or three other subjects, Mr. Chairman, I would like to touch on briefly. Construction grants being one of those. We always come back to this subject it seems when we discuss the Clean Water Act. One of the reasons for that is that in most of our States, if you look at the most severe environmental problem, it still is water pollution caused by local governments. I have talked to my colleagues around the country and all of us still have some major problems in getting our publicly owned treatment works up to the standards that they need to be.

We think one of the problems we have had in the past, one I touched on briefly before, is that the authorized level of funding has almost always been over the last 10 years, considerably greater than the amount appropriated. That has tended to give false hope in many cases to local governments. State water administrators think that the best approach at the present time is to continue the commitment we made. As States, and Governors, when we came to the Hill 2 years ago and pledged to this committee and others that we would work with the $2.4 billion level of funding, move the program forward, and agree with the elimination of reserve capacity and reduction in percentage of Federal funding.

We believe it is very important that the funding level be sustained. It is the roller coaster effect that we have had with this program over the last 10 years that has been quite disruptive to the States and the local governments, as we have tried to plan efficient use of the dollars. So ASIWPCA would urge that we continue with this present part of the Clean Water Act (title II) as it is for at least another year while we evaluate where some of us are going in the States through the innovative and alternative financing.

One reason I would urge that is that we think this committee could be very helpful in looking at some of the grant money being made available to us as loans. In my own State, and I know in the State of New Jersey and many other States around the country, the State is trying to put into place a mechanism to use loans and State grants to expedite this program and help local governments go forward. If we had some flexibility to use very low-interest loan or no-interest loan, in effect we would be giving to that municipality a tremendous grant, particularly if we could give them a no-interest loan from funds provided under the Clean Water Act. In many cases we would be giving them about a 3 to 1 grant, because the interest rates that they pay today are very substantial over a 20-year period, even on a $10 million project.

On the subject of nonpoint sources I mentioned earlier ASIWPCA is doing a report with my State colleagues throughout the country using the same format. It addresses nonpoint source pollution. Depending on the State you are in that may be from agricultural runoff, mining, urban runoff, construction, et cetera. What I have detected in reviewing the reports that have come in to date is that about 32 States indicate that their major nonpoint source problem is related to agricultural runoff. So by far, the major nonpoint source problem impacting water quality is related to agricultural runoff.

The good news is that most of the States, while stating there are significant water quality problems, report that nonpoint sources have not had major, detrimental impact on the major designated use, such as fishing.

I talked earlier about the fact that most of the waters of the Nation are now fishable. What happens is that we have intermittent degradation due to the runoff from agriculture, urban, and other sources, but it is not precluding the designated use in most of the States. I have talked to many of my colleagues from Vermont, Texas, across the country, and we are only seeing about 10 or 12 States that are saying nonpoint source is having major interference with their designated uses. So we think an emphasis needs to be placed on the part of Congress is recognition of this fact.

We hope the committee can provide leadership with EPA and the Department of Agriculture to focus some of the available funds already there through the Department of Agriculture and other national programs to address the nonpoint source from agricultural and other activities.

In our own State we made tremendous progress for many years through Soil Conservation Service programs and other programs promoted by the State, the Extension Service, et cetera. Now we find with the larger equipment and excessive acreage, the farmer now plows right across many of the terraces, ignoring many of the practices their fathers had put into place. So there needs to be some disincentives or incentives, for those type of activities.

ASIWPCA thinks that this can be addressed through the USDA. We hope that you will encourage the Administrator to go forward with what we understand he plans to do. In addition, we feel some time is needed to see how successful we are going to be in many of the other areas. We have just completed in most States, including my own State, the 208 planning effort and putting into place the best management practices.

We are now into the implementation phase. We don't know how successful we are going to be. ASIWPCA thinks States need to work with EPA to implement those and then to come back to this committee in a couple of years possibly to see how much more we need to do. I think there is more being done with the nonpoint source in most States than has been visible, because we have been busy putting into place with many different groups, the forestry commissions and the Soil Conservation Service people, the best management practices. Now that we have established those and made them available, we have got to implement them to see how effective we will be.

The final two points I would make relate to permitting. The States do support partial delegation. You have many States like Texas where the program is administered by several agencies. It would be more efficient for the Federal and State government to allow partial delegation of the NPDES program to some of those States. One of the things that almost all the States are interested in is a 10-year permit. We have in my own State probably 2,000 NPDES permits which about 100 industrial and 100 municipal are really majors. There would be much more efficiency in government if we used 10 year permits, where States could reopen the permits in case we have a water quality problem being created. We would urge the committee to look at that.

Finally, on the subject of penalties, if the Administrator needs additional penalties, certainly we do not object to that. But we in the States have two basic concerns. One is a situation we have encountered under the Clean Water Act with oil spills, where EPA as well as the State is in the process of fining the entity that allowed that to occur. States find the entity sometimes saying, "Well, we are not going to settle with the State until we see what the EPA does." Then they go to EPA and say, "We aren't going to settle with you until we see what the State does." We would like to see, as far as the penalty section related to the NPDES program, that as long as the State is carrying out the program effectively that EPA wouldn't come into the picture. Only where the State didn't enforce the law should EPA be authorized to impose penalties.

The second point is that the Agency in the past has interpreted this section of the act to say that the State had to have the same level of penalty. Many States encountered major problems in getting language into their law on the $10,000 penalty that is in the Clean Water Act now. We would urge this committee not to jeopardize the NPDES program that has been delegated to almost all the States by putting language into the act that would force us to come back and increase from $10,000 up to $25,000 or some other amount, because we have many other management tools.

Just to give you two or three quick examples, one of the most effective tools I have in enforcing the Clean Water Act is the sewer ban moratorium. That will get city hall's attention much quicker, not because I do. It's but because the builders and construction people appear at city hall the next day. We don't need the increase in civil penalty to be effective in the States. I would hope if you give that management tool to the Administrator that it will be done in such a way so as not to jeopardize the delegated NPDES programs; that is, not then impose the change in the law on the States.

In closing, Mr. Chairman, I will be, of course, pleased to respond to any questions you may have. I would like to once again thank you for the opportunity to testify and to thank you for your leadership over the years regarding the Clean Water Act program.

Mr. ROE. I thank you for your testimony.

Mr. STANGELAND. You heard the question asked of Secretary Gianelli about the main impediments to delegation of 404 permit responsibilities to the States. He said funding was probably the key problem. What do you see as the main impediment to the delegation?

Mr. LEDBETTER. I think that the entire program cannot be delegated under the present act because as we have always had explained to us by EPA and the corps, phase one as they call it, the old navigable waters that the corps regulated for so long would still be retained by the corps.

We are interested in Georgia in having the program delegated to us, but we want the entire program. We think it would be further confusion of the bureaucracy to have the applicant come to my office once for a 404 permit and the next time he has to go to the corps, depending exactly where he is located. So we in the States would certainly recommend that that be addressed if you are going to make changes in the law.

The other problem we have had is the unnecessary amount of redtape and procedure, and his simplified flow chart; I don't see how he made it that simple because it is not that simple in the experiences I have had with it.

I think the money is the third impediment as far as we are concerned. If you could address those other two issues, first, the entire program delegated to the State and, second, streamline a lot of the redtape, many of us would assume that responsibility and funding would not be that major an issue.

In our own case, for example, we do all the environmental permits. EPA has delegated all the other environmental programs to us. It is efficiency in Government, whether you are dealing with a public official, an industrial official, environmentalist, private citizen, whatever, when they can come to one agency and get all the permits in Georgia except 404. We would be interested in it, but not as it is now presented to us.

Mr. STANGELAND. Are you, I gather then, in support of the Secretary's efforts to streamline the 404 process?

Mr. LEDBETTER. Yes. We would not want to see the program weakened with respect to the wetlands protection, but it is so cumbersome.

Mr. STANGELAND. A number of approaches have been suggested for the control of toxicity. You are suggesting a somewhat different approach. What are the advantages of the association recommendations over others we have heard, in your opinion?

Mr. LEDBETTER. First of all, we see it as something that complements the ongoing program. You don't stop what we are doing now. You continue with the NPDES program of requiring BAT. We proceed with the program that is in place. Then we come back with this mechanism to expedite things.

As I mentioned, at the rate EPA can develop the effluent guidelines, and especially as you get into a lot of these inorganic and organic chemicals, they are going to be beyond the year 2000 trying to determine what the numbers need to be in a lot of cases. We can implement the ASIWPCA proposal today.

As I mentioned, we have already written it into permits in Georgia, and we are using it. We think that it is something the committee could use to strengthen the Clean Water Act, rather than dealing with numeric standards because those numeric standards are very expensive, and it takes so much time to develop them.

Mr. STANGELAND. Some have testified that changes in the national pretreatment program would represent weakening the Clean Water Act. Would you comment on that position?

Mr. LEDBETTER. Well, the national pretreatment program as it has been administered has been a weak link in the program. It is a weak link now. We think the fact it has moved so slowly speaks to the fact there needs to be a new approach tried.

That is the reason we are recommending the approach I have summarized. ASIWPCA thinks it would strengthen the program and certainly be more expeditious in getting on with the subject. We are concerned that many of our communities are spending millions of dollars. Without a good pretreatment program we are not protecting the taxpayers' investment or the water quality and certainly not the integrity of that biological system.

Mr. STANGELAND. Your association recently surveyed States on the nonpoint source pollution problems. Did that survey show any cost to analyze the total problem of nonpoint source pollution? Was there any cost estimate?,

Mr. LEDBETTER. We are actually involved in two reports dealing with nonpoint sources. The one I have been talking about, the report we are doing with EPA, does not speak to dollars. We are involved with a survey now that is going out to all the States to try to get additional information so we can work with EPA in providing the report that Congress has asked by the first of the year, or shortly thereafter. It is possible some dollars may be provided there. At the present time we do not have them.

Mr. STANGELAND. I guess what my question is directed to is that your statement says that while nonpoint source pollution from agriculture is the biggest problem, it hasn't caused that much degradation in the water. We are talking then of silting, fertilizer runoff, chemical runoff, pesticides and herbicides.

I am just wondering what it is going to cost to survey just exactly what is in that pollution, what are the pollutants going into the water, No. 1. Then, of course, the overall cost I think is of a tremendous magnitude to correct it, but the costs to determine how much degradation are we doing to the water from agricultural runoff.

Mr. LEDBETTER. That varies from State to State. I think we are almost there in my own State because we are just finishing the section 208 studies and reports. That was one area where we spent a great deal of money and time. So I don't think we are going to need more money to answer that question in our State. I think we had the funds under 208.

And we will have answered that question by sometime early next year when we compile all the results of the studies we have been making with our university system, the agricultural community and others.

Now other States vary on that, so I don't have a good number for you.

Mr. STANGELAND. You mentioned that the States are just beginning to implement section 208 plans and put in place best management practices. To what extent are they really being implemented and to what extent are they just sitting on shelves, and what could be done to encourage implementation of those programs?

Mr. LEDBETTER. Well, I think to answer the last part of the question, to encourge the implementation, would be for this committee to look for the Administrator requiring the States to go forward with a nonpoint source program as well as their point source program. Again, I think you are going to see something that varies all over the country as to where we are in carrying those out.

In our own case, mandatory programs are addressing several of those areas such as soil erosion and sedimentation from construction sites, et cetera. But there are still some voluntary programs we think will work with the agricultural community if we can put incentives into place through USDA and others.

Mr. STANGELAND. Would you provide copies of your nonpoint source review papers when you get them?

Mr. LEDBETTER. Yes, sir, we would be delighted to.

[The information follows:]

Association of State and Interstate Water Pollution Control Administrators

Robbi J. Savage
Executive Director
Secretary Treasurer

March 7, 1984

Honorable Robert A. Roe
Chairman
House Subcommittee on Water Resources
B376 Rayburn House Office Building
Washington D.C. 20515

Dear Mr. Roe:

The Association recently completed several national surveys on nonpoint source pollution problems and control programs, specifically, ASIWPCA's:

- States' Evaluation of Progress made over the last 10 years in water pollution control (the STEP project), and
- nonpoint source survey.

During the Association testimony on the Clean Water Act before your Committee, the STEP* and survey results were requested by the Committee. The preliminary analysis has just been completed and is forwarded for your consideration. The results will be published shortly with the ASIWPCA Board of Direction's approval. Highlights are discussed below.

Summary Results

The information ASIWPCA obtained from the States vastly improves the national data base. Results indicate States have given more attention to nonpoint source pollution as municipal and industrial discharge programs have matured. They recognize better ways must be found to identify and control priority nonpoint source water quality problems. This presents a new challenge. In contrast to the discharges from point sources that occur on a predictable daily basis, nonpoint source discharges are intermittent and as a result may have less potential to affect designated uses.

* The STEP Project's Report to Congress entitled America's Clean Water, States' Evaluation of Progress 1972-1982 will be released in late March.

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Nonpoint Source Survey

The preliminary results of the ASIWPCA nonpoint source survey (see Attachment A) provide a current and detailed understanding of program status at the State and local level regarding the:

- progress being made in nonpoint source program development and implementation,
- geographic variability,
- priority of nonpoint source problems, and
- future program needs.

Inadequate funding appears to be the major obstacle in achieving nonpoint source control, but others of importance include: lack of knowledge on cause/effect relationships, lack of public understanding of the problems and issues, questionable economic feasibility of controls, and inadequate laws and regulations.

STEP Results

The STEP project focused on case studies and the extent to which nonpoint sources impaired designated uses. The results are useful in promoting implementation. As indicated in the ASIWPCA testimony, such problems may be more manageable than previously thought:

- General -- 36 States indicated they had severe nonpoint source problems, However, their frequency varied widely (see Attachment B).
- Extent -- 21 States had "extensive" nonpoint source problems , i.e. they were the major cause (equal to or greater than 40%) of less than full support of designated uses :
- Priority -- 16 States indicated nonpoint sources were a "priority water quality problem", i.e. they were not only extensive, but also severe enough to impair a designated use on a localized or wide-spread basis:

Number of States With Priority Nonpoint Source Water Quality Problems

Category	Wide-Spread	Localized
Agriculture	10	2
Mining	1	9
Hyromodification	1	2
Residuals	1	1
Construction	-	4
Silvaculture	1	1

Future Issues

Both the STEP project and the ASIWPCA survey indicate policy areas which merit further attention. The Association intends to assess them over the next several years in cooperation with the US EPA under a cooperative agreement. The results should provide a more solid basis for national decision making. They include:

Cause and Effect

- Nonpoint source problems appear to be greatly influenced by natural erosion, geographical location, and hydrologic regime (e.g. lakes vs. streams),
- Intermittent nonpoint sources vary in the extent to which they cause long term use impairment, and
- The effectiveness of management practices in improving water quality needs more documentation.

Responsibilities -- All levels of government share roles and responsibilities in nonpoint source management:

- The Federal government manages vast amounts of land and large financial programs,
- Local communities manage land use , e.g. construction and urban runoff control, and
- All share control of residual waste management.

Funding -- State Water Administrators support Federal matching programs to foster nonpoint source controls, but the appropriate nature and extent of such funding needs further clarification.

Should you desire additional information on this or other issues related to the water quality program, we would be pleased if you call on us.

Best Regards,

Robbi Savage

Robbi Savage
Executive Director

cc: Congressman Stangeland
John Doyle
Errol Tyler
Caroline Gabel
Reginald LaRosa, ASIWPCA President
ASIWPCA Board of Direction

Enclosures

Appendix B

STATES' EVALUATION OF PROGRESS (STEP)
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GENERAL FINDINGS ON NONPOINT SOURCE IMPACTS

STEP results from the 45 States reporting on nonpoint source problems are outlined below:

Nonpoint Source	Number of States With Severe NPS Problems	General* Extent of NPS Pollution	
		Wide-spread	Local-ized
Agricultural	16	29	12
Urban	11	8	35
Mining	15	2	36
Land Disposal	12	5	35
Construction	6	7	34
Dams and Channels	7	5	33
Forests	4	6	27
Saltwater Intrusion	2	1	21

* number of States

Of the 36 States indicating the presence of severe nonpoint source problems:

- Agriculture is by far the most severe and wide spread problem (14 States)
- Mining is the most severe localized problem (14 States)
  - .. Urban is second (10 States)
  - .. Residuals is third (9 States)
- Less Severe nonpoint source pollution generally follow this order. However, construction and hydromodification were the most common moderate and localized problems.

The nonpoint source pollutants most seriously affecting water quality in most States are suspended particles of solid materials, nutrients that promote undesirable growth of algae, waste-related bacteria, pesticides and heavy metals.

Definitions:

Severe	impairment of a designated uses. Note that more moderate impacts were also documented in STEP.
Wide spread	50% or more of States waters are affected by a category of nonpoint source pollution
Localized	Less than 50% of States water are affected by a nonpoint source of pollution

Analysis of the States' Response to ASIWPCA Nonpoint Source Pollution Survey

February 1984

Prepared by the Nonpoint Source Committee
Water Quality Management Task Force
Association of State and Interstate Water Pollution Control Administrators

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Introduction

In 1982, the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) recognized nonpoint source pollution as being an important water pollution control issue. A Nonpoint Source Pollution Control Committee was formed as part of ASIWPCA's Water Quality Management Task Force. The committee developed a nonpoint source pollution questionnaire. In November, 1983, the ASIWPCA Board of Direction authorized the questionnaire to be sent out to the states.

This report is a summary of responses from 43 states to the questionnaire and provides an overall evaluation of current state nonpoint source programs, problems, issues, needs and future direction as perceived by a majority of the states.*

Most of the state agencies that were polled are responsible for the assessment, oversight and control of nonpoint source pollution.

Assessment

States use a variety of chemical, physical and biological parameters to assess nonpoint source pollution. Nonpoint source pollution assessment can be divided into three major levels of detail: statewide reconnaissance inventories, statewide comprehensive assessments and intensive surveys in selected problem areas. Most states have completed statewide reconnaissance surveys. Only two states have developed detailed statewide comprehensive assessments based on monitoring data during runoff events. Most states have conducted intensive monitoring assessments during runoff events in specific problem watersheds.

* A telephone survey was conducted. An additional six states answered key questions. These questions were 29, 31, and 48 of the Nonpoint Source Questionnaire; see Appendix A for questionnaire results.

Assessments in selected problem watersheds have been specific enough to guide implementation efforts to reduce the effects of nonpoint sources in these areas. The majority of states indicate that they have unmet needs for further assessment of nonpoint source pollution and Best Management Practice** (BMP) effectiveness on water quality.

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Water Quality Standards and Beneficial Uses

Almost all states indicated that they have attributed water quality problems to nonpoint source pollution. These problems are identified as impairments to beneficial uses and violations of water quality standards.

Almost all state standards were established to protect streams during normal or low flow conditions. Only a very few states have specific water quality standards for variable or high flow conditions. Lack of criteria for periods of runoff when nonpoint source pollution normally occurs may be a significant constraint to program effectiveness when dealing with rivers and streams.

Sources and Impacts of Nonpoint Pollution

Most states identified agriculture as being a major contributor to water pollution followed in decreasing order by urban sources, construction, mining and silviculture (Appendix B). The majority of states indicate that nonpoint source pollution has the most impact on rivers, streams, lakes and ponds followed in decreasing order by groundwater, wetlands, estuaries, oceans and bays.

** Methods, measures, or practices to prevent or reduce water pollution, including, but not limited to, structural and nonstructural controls and operation and maintenance procedures. BMPs may be applied before, during, or after pollution-producing activities to reduce or eliminate the introduction of pollutants into water bodies. (From EPA report to Congress: Nonpoint Source Pollution in the U.S.)

Forty-three percent (43%) of the states stated that current nonpoint source pollution problems are greater in magnitude than point source problems. Thirty-five percent (35%) of the states stated that current nonpoint source pollution problems are equal in magnitude to point source problems. Twenty-two percent (22%) of the states stated that nonpoint source pollution problems are less in magnitude to point source problems (Figure 1). In a majority of states, nonpoint source pollution causes widespread problems to fisheries through habitat damage and nutrient enrichment (Figure 2). The most significant widespread problems were recreational impairment from sedimentation, decreasing aesthetics (weeds, algae, clarity and litter) and the occurrence of pathogens (Figure 3). To a lesser degree, states identified turbidity and chemicals as being a widespread problem with water supply contamination.

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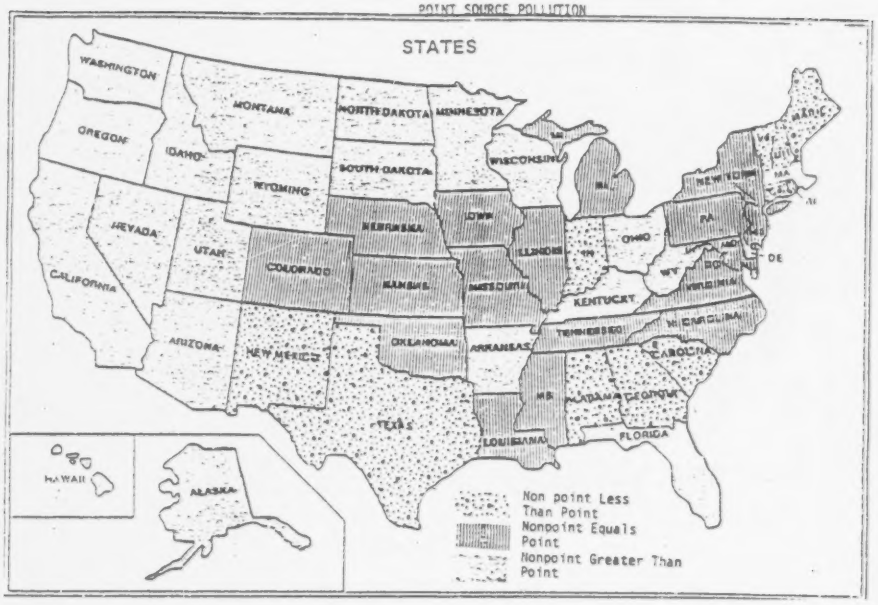
Best Management Practices and Their Water Quality Benefits

Many states have the means to set priorities for the correction of nonpoint source problems and have identified BMPs to address those problems. For the most part, states have identified BMPs that can be applied to local conditions, are economically feasible, and are acceptable to the public. Most BMPs are modified, added or deleted as needed. Although traditional BMPs are being used to correct nonpoint source problems, many states believe additional BMPs and innovative approaches may need to be developed to improve water quality. Research should continue on BMP effectiveness in relation to water quality improvement. Research results need to be transmitted to state and other implementing agencies. Most states have information on success stories they believe could benefit other states. A few states have documented specific instances where nonpoint source pollution controls failed to yield a desired water quality response; this information would also be beneficial to the other

#31 FIG. 1 THE MAGNITUDE OF NONPOINT SOURCE POLLUTION IN COMPARISON TO POINT SOURCE POLLUTION



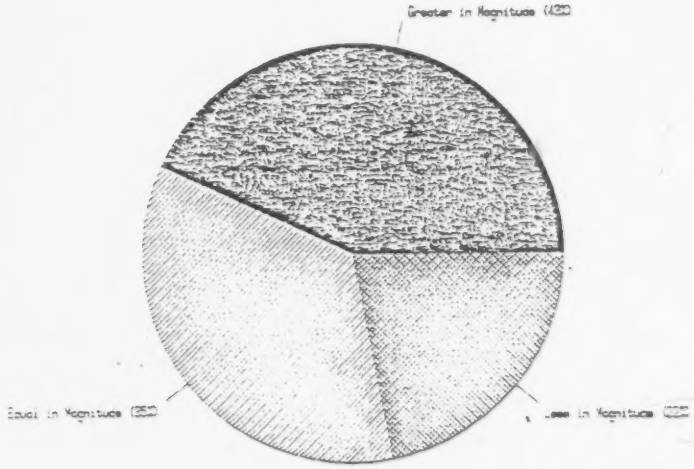


FIG. 2 Fishery Impairment

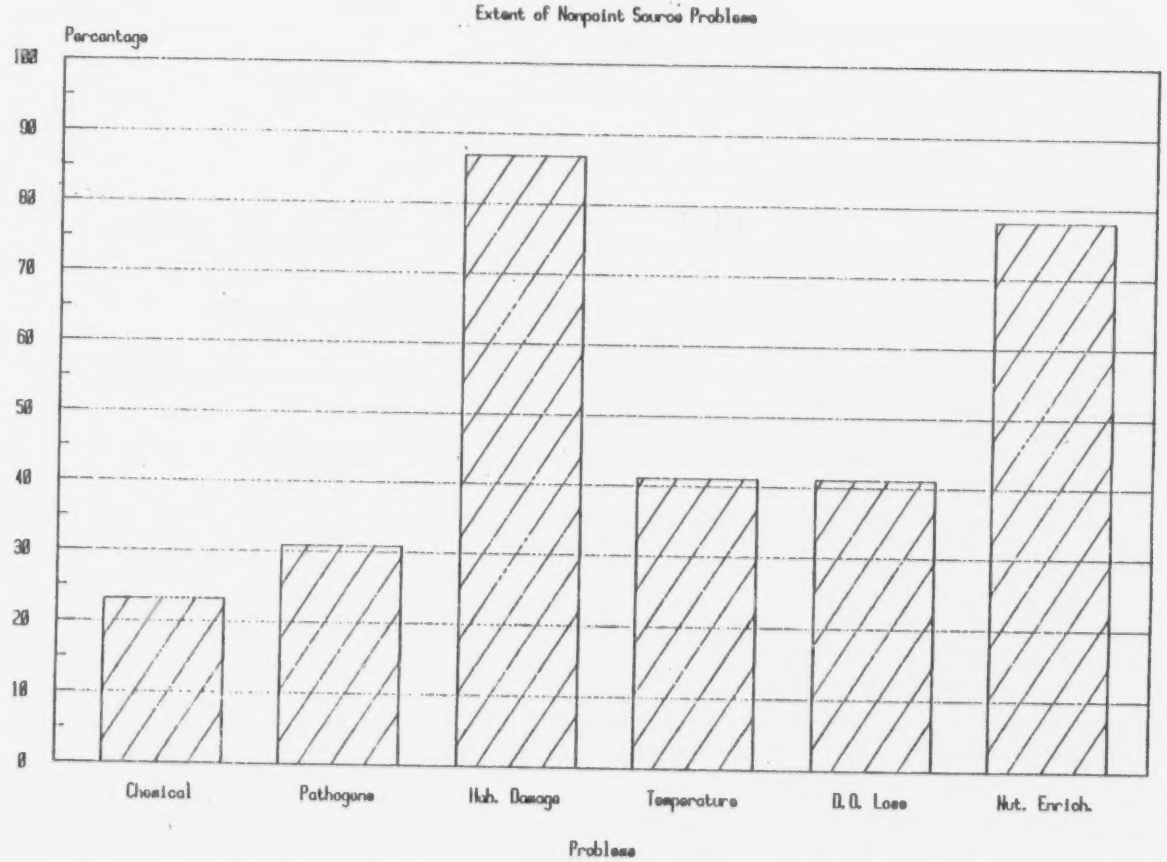
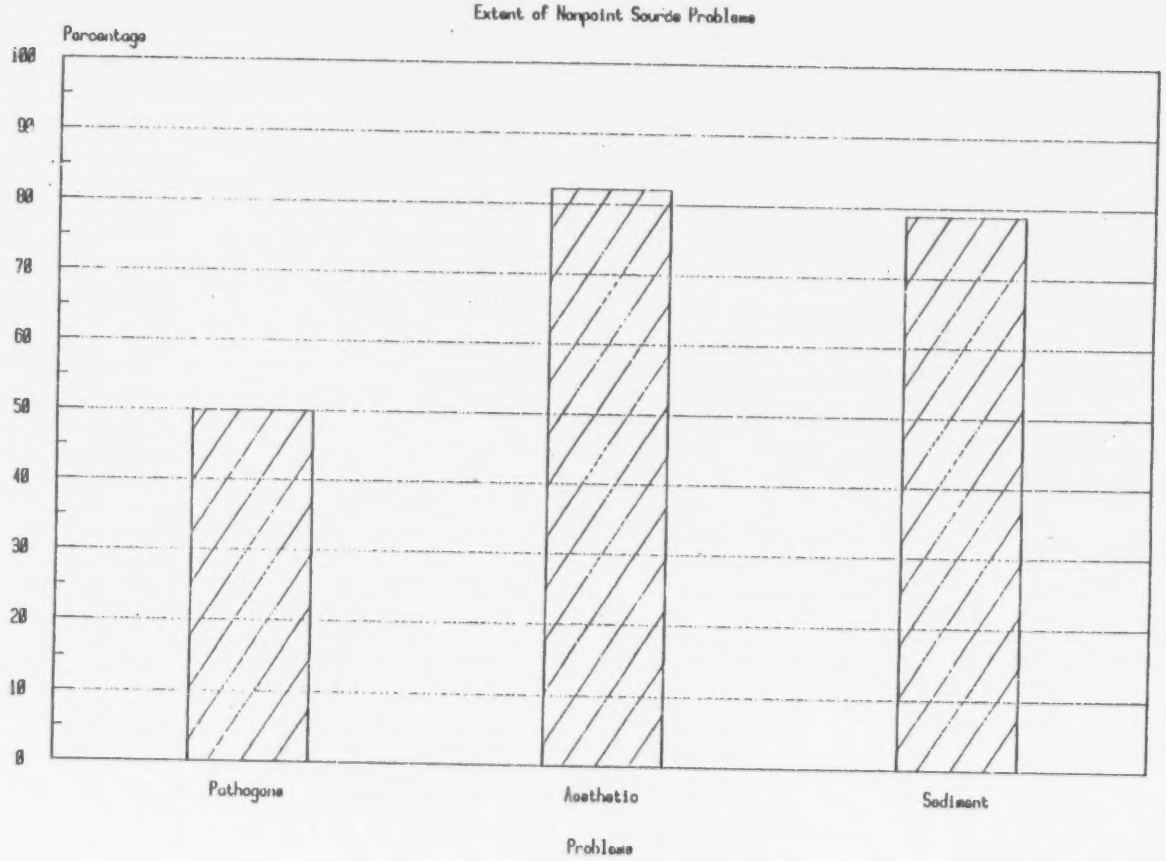


FIG. 3 Recreational Impairment



states. Most states recognize the need to better document the degree of water quality improvement from installed BMPs.

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Existing Nonpoint Source Control Programs

Almost all states use a mixture of federal, state and local programs to control nonpoint source pollution problems. Most states use both voluntary and regulatory approaches to control nonpoint source pollution depending on the source being controlled. The majority of states have regulatory programs for mining, construction and urban nonpoint source pollution. Virtually all states rely upon the educational/voluntary approach for agricultural nonpoint source problems. Many states have state cost share programs for agricultural nonpoint pollution; while some states back up their voluntary and cost share efforts with a regulatory approach.

Many states indicated that they have the necessary legal and institutional framework to carry out an effective nonpoint source pollution control program; but there was a significant minority which stated that they were not fully prepared, due to either legal or institutional problems. Most states have the means to coordinate federal, state and local nonpoint source pollution control efforts. The majority of states have adequate means to disseminate nonpoint source pollution information and to obtain and incorporate public input into their nonpoint source pollution control efforts.

Most states reported that very few local units of government have taken steps such as local ordinances, land use controls and educational programs to control nonpoint source pollution.

DRAFT

Most states indicated that while USDA cost-sharing programs may minimize soil erosion problems, they only partly respond to water quality problems caused by agricultural sources.

The majority of states favor regulatory approaches for mining, construction and urban nonpoint source pollution and then only at the state and local levels. The majority of states favor non-regulatory programs for agriculture and silviculture.

Obstacles to the Control of Nonpoint Source Pollution

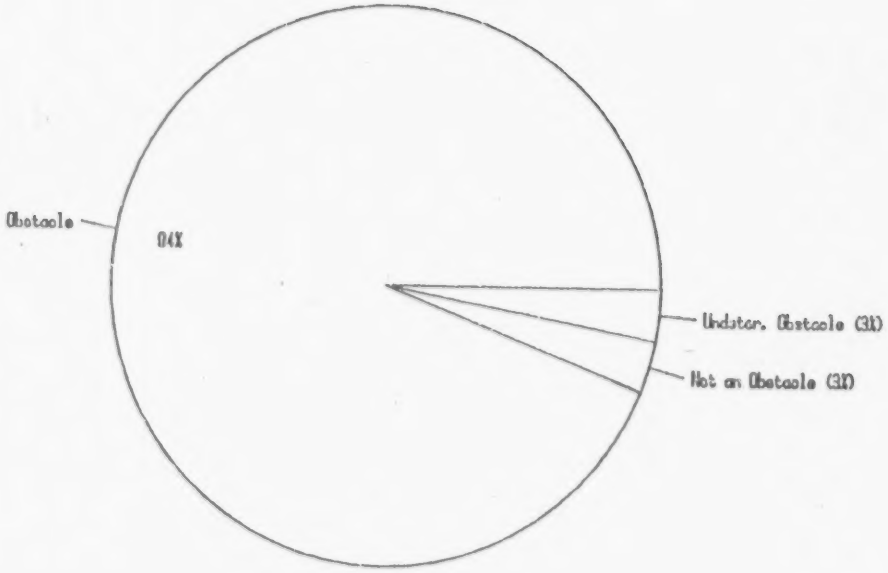
The states identified inadequate funding as the major obstacle in achieving adequate nonpoint source pollution control. Other obstacles or constraints identified by the states are: lack of knowledge on nonpoint source cause/effect relationships, lack of public understanding of nonpoint source problems and issues, questionable economic feasibility of nonpoint source controls, and to a lesser extent, inadequate laws and regulations.

Future Needs and Outlook

Currently, the majority of states are using 205j funds for nonpoint source activities and nearly all the states are in favor of continued funding for Section 314 Clean Lakes Program which can be used in specific watersheds to control nonpoint source pollution. At this time, most states do not have adequate funding for the assessment and control of nonpoint source pollution (Figure 4).

Ninety-three percent of the states questioned answered that ASIWPCA should actively support efforts for a federal match program for the assessment and control of nonpoint source pollution.

FIG. 4 Inadequate Funding



APPENDIX A

ALPHABETICAL LISTING OF STATES RESPONDING IN WRITING TO NONPOINT SOURCE SURVEY

1. Alabama
2. Arizona
3. Arkansas
4. California
5. Colorado
6. Connecticut
7. Delaware
8. Florida
9. Georgia
10. Hawaii
11. Idaho
12. Illinois
13. Iowa
14. Kansas
15. Kentucky
16. Louisiana
17. Maryland
18. Michigan
19. Minnesota
20. Mississippi
21. Missouri
22. Montana
23. Nebraska
24. New Hampshire
25. New Jersey
26. New Mexico
27. New York
28. North Carolina
29. North Dakota
30. Ohio
31. Oklahoma
32. Oregon
33. Pennsylvania
34. South Carolina
35. South Dakota
36. Tennessee
37. Texas
38. Utah
39. Vermont
40. Washington
41. West Virginia
42. Wisconsin
43. Wyoming

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Association of State and Interstate Water Pollution Control Administrators

ASIWPCA

ASIWPCA NONPOINT SOURCE SURVEY

Introduction

The following survey has been prepared by the ASIWPCA Water Quality Management Task Force. Results will be used to:

1) foster communication between States on nonpoint source problems and issues

2) generate a comprehensive information base on State nonpoint source management efforts and program approaches which may be effective in addressing water quality problems.

3) enhance the Association's ability to address State needs.

4) develop a better understanding Nationally of the State perspective

The data from this survey will be analyzed and the results compiled for use by the States and US EPA. Our intention is to use the information as the vehicle to assist US EPA in drafting the report Congress required by January, 1984.

Please feel free to make any additional remarks not covered in the survey. If you have any questions, please call Bill Markley, South Dakota Department of Water and Natural Resources (605-773-3296).

43 written responses were received. All responses are shown as percentages of total answers to each question except where otherwise indicated.

State _____

Staff contact (Name, title, phone) _____

_____

	Yes	No
1. Is your agency the prime agency for nonpoint source pollution assessment? If not, please indicate the agency? _____	100%	0
2. Is your agency the prime agency for nonpoint source pollution control? If not, please indicate the agency. _____	80%	20%

	Yes	No
3. Does your state have an accurate assessment of NPS pollution—its causes, areas of impact, and severity?	33%	67%
4. Does your state have guidance/criteria for defining a nonpoint water quality problem?	50%	50%

5. Please check the statement best describing the detail level of your inventory.

a. Statewide reconnaissance inventory	2%
b. Detailed statewide inventory based on monitoring data	5%
c. Inventory is a "mixed bag". In some areas we have a good documentation of NPS water pollution, in other areas little or no reliable data exists.	84%
d. Our state has not made an assessment of NPS water problems per se. Information we have on hand is primarily from our ambient monitoring of point source pollution.	7%
e. Other _____	2%

	Yes	No
6. Does your state have additional NPS assessment needs?	95%	5%
7. Does your state have a means of setting priorities for identified NPS problems?	63%	37%
8. Does your state have a comprehensive list of BMP's to address NPS pollution problems? If so:	77%	23%

		Yes	No
	a. Are BMP's applicable to local condition?	97%	3%
	b. Are they socially accaptable across the state?	77%	23%
	c. Are they deemed econcmically feasible?	84%	16%
	d. Are BMP's modified, added or deleted as needed?	85%	15%
	e. Are additional BMP's needed?	68%	32%
9.	Does your state have an adequate means of assessing water quality impacts of BMP's that have been installed?	29%	71%
10.	Does your state have unmet needs for assessing water quality impacts of installed BMP's?	84%	16%
11.	Does your state have adequate water quality monitoring to assess ongoing impacts of NPS pollution?	14%	86%
12.	Has your state found innovative and cost-effective means of water quality monitoring to determine NPS impacts?	29%	71%
13.	Does your state presently have a means of coordinating NPS pollution control efforts across the state, at the local, state and federal levels?	59%	41%
14.	Does your state have the necessary legal and institutional framework to carry out an effective NPS pollution control program?	61%	39%
15.	Does your state have an adequate means of obtaining and incorporating public input into NPS pollution control efforts?	84%	16%
16.	Does your state have a means of evaluating management agencies involved in NPS pollution control?	71%	29%
17.	If an evaluation of management agencies reveals ineffectiveness, does your state have a means of making needed changes?	59%	41%
18.	Does your state have adequate funding for technical assistance needed to install BMP's?	7%	93%
19.	Does your state have an adequate means of disseminating information about NPS pollution and BMP's to pertinent persons and agencies?	57%	43%

		Yes	No
20.	Does your state believe that adequate research is being conducted on NPS pollution and its control?	17%	83%
21.	Does your state have particular achievements in NPS pollution control that could benefit other states?	88%	12%
22.	Does your state have water quality problems attributed to nonpoint sources?	98%	2%
	a. If so, are they identified as impairment to beneficial uses?	95%	5%
	b. If so, are they identified as violations of water quality standards?	83%	17%
23.	Does your state have specific water quality standards provisions that establish criteria for runoff or high stream flow conditions?	5%	95%
24.	If not, does your state apply water quality standards for low or normal flow to runoff or high stream flow conditions?	73%	27%
25.	Which of the following parameters has your state utilized to assess NPS impacts: *		
	a. Total Solids	50%	___
	b. Dissolved Solids	65%	___
	c. Suspended Solids	91%	___
	d. Total Phosphorus	88%	___
	e. Ortho Phosphate	74%	___
	f. Total Kjeldahl Nitrogen	74%	___
	g. Nitrates	84%	___
	h. Nitrites	65%	___
	i. Ammonia	67%	___
	j. Pesticides	76%	___
	k. Heavy metals, please specify	70%	___
	l. Priority toxic pollutants, please specify	30%	___
	m. Fecal coliforms	86%	___

* The percentages for question 25 are based on the entire 43 states.

		Yes	No
n.	Biochemical Oxygen Demand	72%	____
o.	Conductivity	67%	____
p.	Turbidity	81%	____
q.	Dissolved Oxygen	81%	____
r.	Chlorides	67%	____
s.	Chemical Oxygen Demand	35%	____
t.	Bioassay	30%	____
u.	Species Identification	60%	____
v.	pH	77%	____
w.	Alkalinity	53%	____
x.	Temperature	74%	____
y.	Other, please specify	16%	____
26.	Has your state established a specific cause and effect relationship between any specific nonpoint sources and in-stream water quality problems?	83%	17%
27.	How widespread are the following NPS problems?	Common Problem	Few Problems
a.	Water Supply Contamination		
	Chemicals (toxics, salt, petroleum, nitrates, etc.)	38%	62%
	Pathogens	20%	80%
	Turbidity	51%	49%
	Taste and odor	26%	74%
b.	Fishery Impairment		
	Chemical (fish kills, bioaccumulation)	23%	77%
	Habitat damage	85%	15%
	Temperature (due to land use changes)	42%	58%
	Dissolved oxygen loss	40%	60%
	Pathogens (shellfish, etc.)	31%	69%

		Yes	No
	Nutrient enrichment	76%	24%
c.	Recreational impairment		
	Pathogens (viruses, bacteria, parasites)	49%	51%
	Aesthetic (weeds, algae, clarity, litter)	77%	23%
	Sedimentation	79%	21%
28.	Do you use modeling tools for predicting NPS cause/effect relationships in your state?	38%	62%
29.	Does your state consider the following nonpoint categories, major contributors to water pollution: *		
	a. Agriculture	85%	15%
	b. Construction	54%	46%
	c. Mining	56%	44%
	d. Silviculture	27%	63%
	e. Urban nonpoint sources	56%	44%
	f. Other, please specify	____	____
30.	Does your state consider nonpoint source pollution to have major impacts on the following water bodies: **		
	a. Rivers and streams	90%	10%
	b. Lakes and ponds	86%	14%
	c. Estuaries	51%	49%
	d. Groundwater	55%	45%
	e. Oceans and bays	44%	56%
	f. Wetlands	58%	42%
31.	Does your state consider current nonpoint source pollution problems: ***		
	a. Greater in magnitude than point sources	43%	____
	b. Equal in magnitude to point sources	35%	____
	c. Less in magnitude than point sources	22%	____
32.	Does your state have state funding for nonpoint source assessment?	26%	74%

* Percentages include personal communication with Alaska, Maine, Nevada, and Rhode Island.
** This may not be a true estimate of Estuaries, Oceans and Bays, since some states are not located near them.
*** Percentages include personal communication with Alaska, Indiana, Maine, Nevada, Rhode Island, and Virginia.

33. Identify any constraints or obstacles to solving NPS pollution problems which exist in your state. Please check whether you believe the following is an obstacle to NPS controls.

	Obstacle	Not an Obstacle	Undertermined Obstacle
a. Lack of knowledge on NPS cause/effect relationships.	55%	29%	17%
b. Lack of proven NPS control technology to restore water uses.	28%	42%	30%
c. Economic feasibility is questionable. Cost of NPS controls may be greater than benefits.	49%	19%	33%
d. Lack of public understanding of NPS problems and issues.	57%	31%	12%
e. Inadequate laws/regulations.	38%	43%	19%
f. Inadequate funding.	95%	2%	2%
g. NPS problems are few and insignificant relative to point source problems.		72%	28%

34. Are USDA cost sharing programs for agricultural practices effectively responding to agricultural nonpoint pollution problems in your state?

Yes	Partially	No
2%	79%	19%

35. Has your state documented specific instances where NPS controls failed to yield a desired water quality response?

Yes	No
17%	83%

36. Please check the sources being controlled and the control methods being used. *

(Check those controls that are being implemented by your state)

	Education/ Voluntary	Cost Sharing	Tax Incentives	Regulatory
a. Agriculture	98%	70%	12%	23%
b. Silviculture	70%	7%	2%	19%
c. Mining	28%	2%		77%
d. Construction	67%		2%	56%

* Some states included federal and local programs. These percentages are based on entire 43 states answering the questionnaire.

e. Urban runoff	63%	2%		40%
f. Other (explain)	12%	2%		19%

37. Have local governments in your state taken steps (local ordinances, land use controls, educational, etc.) to control nonpoint sources?

5%	29%	67%
Generally Yes	Several Have	Only a Few Have

38. Does your state have state funding for nonpoint source pollution control in the following categories:

a. Agriculture	38%	62%
b. Construction	7%	93%
c. Mining	20%	80%
d. Silviculture	10%	90%
e. Urban nonpoint sources	7%	93%
f. Other, please specify		

39. Does your state have a state funded lake restoration program?	20%	80%
40. Does your lake restoration program currently have funds appropriated for it?	14%	86%
41. Does your state support* federal match programs for nonpoint source assessment?	81%	19%

42. Does your state support federal match programs for nonpoint source pollution control in the following categories?

a. Agriculture	78%	22%
b. Construction	41%	49%
c. Mining	44%	66%
d. Silviculture	51%	49%
e. Urban nonpoint sources	57%	43%
f. Other, please specify		

43. Does your state favor continued funding for 314 Clean Lakes Program?	91%	9%

* i.e. the State water pollution control program support

		Yes	No
44.	Does your state use 205j funds for NPS activities?	73%	27%
45.	Does your state believe that there is adequate federal legislation on the books to cover NPS activities?	46%	54%
46.	Does your state favor regulatory approaches for the following categories?		
	a. Agriculture	21%	79%
	b. Construction	71%	29%
	c. Mining	95%	5%
	d. Silviculture	36%	64%
	e. Urban nonpoint sources	54%	46%
	f. Other, please specify	___	___
47.	For those categories that you marked "yes", does your state favor a regulatory approach at: *		
	a. Federal level	19%	___
	b. State level	95%	___
	c. Local level	63%	___
48.	Should ASIWPCA actively support efforts for a federal match program for the assessment and control of nonpoint source pollution?	93%	7%

* These percentages include personal communication with Alaska, Maine, Nevada, and Rhode Island.

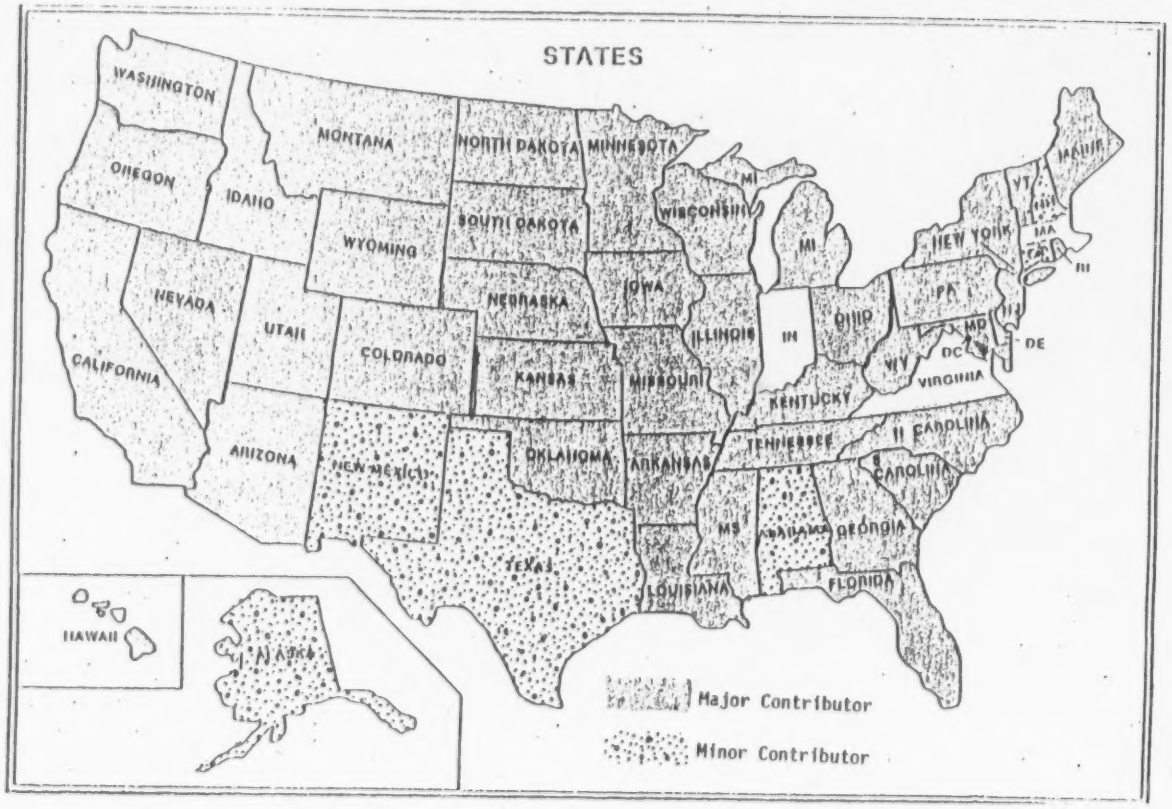
PLEASE RETURN THE COMPLETED SURVEY BY NOVEMBER 15, 1983 TO:

ASIWPCA
444 North Capitol N.W.
Room 330
Washington D.C. 20001

B00303DP.wq

APPENDIX B

29a AGRICULTURAL NONPOINT SOURCES AS A CONTRIBUTION TO WATER POLLUTION



29b CONSTRUCTION NONPOINT SOURCES AS A CONTRIBUTION TO WATER POLLUTION

29c MINING NONPOINT SOURCES AS A CONTRIBUTION TO WATER POLLUTION

STATES
WASHINGTON
OREGON
IDAHO
MONTANA
NORTH DAKOTA
MINNESOTA
SOUTH DAKOTA
WISCONSIN
MICHIGAN
WYOMING
NEVADA
UTAH
COLORADO
NEBRASKA
IOWA
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
NEW YORK
VT
NH
ME
MA
RI
CT
NJ
DE
MD
DC
VIRGINIA
CALIFORNIA
ARIZONA
NEW MEXICO
KANSAS
MISSOURI
KENTUCKY
TENNESSEE
NORTH CAROLINA
SOUTH CAROLINA
OKLAHOMA
ARKANSAS
MISSISSIPPI
ALABAMA
GEORGIA
TEXAS
LOUISIANA
FLORIDA
HAWAII
ALASKA
Major Contributor
Minor Contributor

29e URBAN NONPOINT SOURCES AS A CONTRIBUTION TO WATER POLLUTION

Mr. ROE. The gentleman from Georgia.

Mr. ROWLAND. Thank you, Mr. Chairman.

You indicated in your testimony that we should have compliance with the best available technology as soon as we can after the effluent guideline promulgation comes into effect. I have heard testimony that with publicly owned waste treatment facilities, there has been a combination with some areas where industry got involved with publicly owned waste treatment.

Would you comment on that and how you think that would work?

Mr. LEDBETTER. Where we have the industry and city working together?

Mr. ROWLAND. Right.

Mr. LEDBETTER. In one case, Macon, Ga., in your district, Mr. Congressman, we after several extensive pilot plants, showed that by mixing the two wastes we got a higher degree of treatment. They were compatible, in other words. And by mixing the industrial waste water and municipal waste water, we had a higher degree of treatment for the two wastes.

So it can be very beneficial in many cases. We can better protect the receiving water. The key thing is to be sure that there is not any toxic or hazardous pollutants in the industrial waste water that would have an adverse impact on the integrity of the publicly owned treatment works. But it can work, and we have got several projects in our own State where it has worked quite successfully.

Mr. ROWLAND. Do you think that would bring about some savings, not only to industry but to municipalities, also, with the construction of the facility and whatever the product might happen to be that is being manufactured that has the waste produced?

Mr. LEDBETTER. Yes, it brings about some saving because the studies that have been made, of course, address the issue of cost effectiveness. You always evaluate the cost of them going independently as well as going jointly.

But another very important aspect of that is that if you look at this Nation as a whole, you have got many, many industries that could not discharge as point sources where they are located. There is nothing in which to discharge other than a storm sewer or drainage ditch, that would meander through maybe a developed community for a number of miles before it could get to a river.

So it is very important that we continue to promote industry working with the publicly owned systems to put their waste water into those when you are in those kinds of situations. It is more cost effective. It is wiser from an environmental standpoint.

The key thing is for us to put into place the pretreatment program that I have talked about and then use the toxicity elimination strategy to make sure that is effective.

Mr. ROWLAND. Thank you very much, Mr. Chairman.

Mr. ROE. Any questions, Mr. Albosta?

Mr. ALBOSTA. Mr. Chairman, thank you.

I thank you for being here and the excellent testimony to the committee, Mr. Ledbetter, that I think is helping us to make decisions. But I am concerned about nonpoint sources of pollution. Michigan has the right-to-farm law. This may be unique in the

Nation. I am not sure. But I am not sure, you could say that most of it is coming from agriculture.

The gentleman from Minnesota, I think, asked you the question of what were those pollutants. I don't recall that I heard you answer it, or don't you know exactly what they are?

Mr. LEDBETTER. Well, those vary, of course, from one agricultural activity to another. The No. 1 problem is simply soil erosion. That is the number one problem from the agricultural community throughout the country.

Secondly, depending if you are in the East or the West, it could very well be the salt problems related to irrigation return flows in the West. In many of our States, like my own State, where we have in the southern half of the State extremely sandy soils, leachate of ammonia, the fertilizer, nitrogen, pesticides, herbicides, are problems that we encounter in many cases there.

But so far the level that we have detected in all of our studies have been such that those levels of concentration do not preclude meeting the designated use, which in most cases will be fishing.

Mr. ALBOSTA. Have you had any problems with any of the States that you have encountered where they don't have the funds, or are cutting back on staff, would have problems trying to implement sections of the act?

Mr. LEDBETTER. Yes.

Mr. ALBOSTA. Michigan, for instance, has cut back I believe about 15 percent on the number of State employees because of real tough financial problems that the State has encountered.

Mr. LEDBETTER. We have had to cut back a small percentage in Georgia because, as you know, most of the States are required by their constitutions to live within a balanced budget. The State of Oregon, I know, had a significant reduction. I think they almost cut their staff in half due to the economy's impact on their State revenues. I know about your own State of Michigan and the problems of the economy there.

Basically, what we in the States have said is that if Congress will continue to provide the funds under the Clean Water Act, section 106 particularly and section 205 (g) and (j), that we can continue to administer an effective program. As you know, the former Administrator of EPA was urging that those funds be reduced by as much as 50 percent and eventually eliminated. We cannot be effective in carrying out effective programs with such reductions.

But we do believe, and the Nation's Governors, for example, have a policy position that they have adopted saying, "Continue that funding at the current level, and we can be effective in managing the program." I think in most States that would be the case.

Mr. ALBOSTA. I think what you are saying, then, is that it would almost be essential that the States get some assistance from the Federal Government in order to implement their part of the program?

Mr. LEDBETTER. Yes, sir, especially since if you look at the Clean Water Act in cases like myself where I was there many years in the State program before the Clean Water Act, it is a more expensive program to administer today due to the various procedures dictated to us under the Clean Water Act. So it is more costly and,

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therefore, we think the Federal Government should continue to contribute to the management of that program in a financial way.

Mr. ALBOSTA. I thank the gentleman. I don't have any further questions, Mr. Chairman.

Mr. ROE. Mr. Sunia?

Mr. SUNIA. No questions.

Mr. ROE. Any further questions?

We want to thank you very much, Mr. Ledbetter, for your excellent testimony. It will be very helpful to us. You are giving us a good oversight as to what States are thinking at this point. We appreciate your help very much.

Mr. LEDBETTER. Thank you, Mr. Chairman.

Mr. ROE. Our next witness this morning is Mr. Charles Kaiser, Jr., assistant executive director and general counsel, Metropolitan St. Louis Sewer District and chairman of AMSA Legislative Committee representing the Association of Metropolitan Sewerage Agencies.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

REMARKS BY CHARLES B. KAISER, JR., ASSISTANT EXECUTIVE DIRECTOR AND GENERAL COUNSEL, METROPOLITAN ST. LOUIS SEWER DISTRICT ON BEHALF OF THE ASSOCIATION OF METROPOLITAN SEWERAGE AGENCIES

Mr. Chairman, my name is Charles B. Kaiser, Jr. and I am the Assistant Executive Director and General Counsel of the Metropolitan St. Louis Sewer District and Chairman of the Association of Metropolitan Sewerage Agencies' Legislative Committee. I appreciate this opportunity to present the Subcommittee with AMSA's views on the major clean water issues of concern to our members. AMSA's members serve more than seventy-seven million people in 94 of the nation's major urban areas, and treat over fifty percent of the wastewater subject to existing federal pretreatment mandates across the country.

One of these issues, a most critical one relating to the future federal financial commitment to the construction grants program, is addressed by H.R. 3282, the Water Quality Act of 1983. The other major issues I will be discussing, such as pretreatment, sludge management, common law, and municipal compliance, are not covered by this proposed legislation, but are included in companion legislation in the Senate. Accordingly, our testimony will address these and other issues in our recommendations on Clean Water Act amendments that are most responsive to the needs of the nation's major metropolitan sewerage agencies.

PRETREATMENT

AMSA has been at the forefront of the pretreatment debate for many years. During this time, we have worked with EPA, the states, and others to fashion a sensible approach to achieving the goals of the law. We have been strong advocates of good pretreatment programs because our members are ultimately responsible for regulating toxic waste discharges into their systems. More importantly, we are the ones who are ultimately accountable to EPA, the states and our own citizens if failure to regulate these discharges results in environmental damage. Many of our members already had effective industrial waste control programs prior to 1972, when the concept of Federal pretreatment requirements was first imposed. Most of our members now have programs that comply with, or are awaiting EPA or state approval of, Federal pretreatment requirements. In many cases, these agencies require industry to meet even more restrictive discharge limitations than those that have been promulgated or are under consideration by the Environmental Protection Agency, because the restriction is necessary for plant, sludge, or environmental protection.

AMSA member agencies are the strongest advocates of effective pretreatment programs at the local level, and they support Federal regulatory requirements that POTWs develop and implement such programs. At the same time, AMSA is highly critical of the national pretreatment program's assumption that a single nationwide

strategy based on national categorical standards is uniformly appropriate throughout the nation. We believe that the basic objective of pretreatment—to protect water and sludge quality, to protect plant operations, and to prevent the pass-through of pollutants—relate to site-specific problems and require site-specific solutions. Accordingly, we favor an approach that would enable capable local agencies, with effective local programs and standards in place, to move forward on their own and to avoid burdensome administrative and economic disincentives associated with implementation of national categorical standards at the local level. Federal categorical program requirements should apply only to those local agencies that are either unwilling or unable to develop and implement effective programs on their own.

Our position has the strong support of local and state officials. Indeed, up until several months ago, EPA and the Senate Subcommittee on the Environment also supported local flexibility for pretreatment program implementation. This latter support, evidenced by legislative proposals considered by the Senate, would have enabled POTWs with good pretreatment programs to continue to move forward on their own. Although this proposed legislation was more stringent in its pre-conditions than we thought necessary to guard against possible abuse, we gave it our strong support and urged its enactment into law. However, the Senate subcommittee deleted this provision from its bill prior to reporting it to the full committee.

We understand that EPA is in the process of establishing a pretreatment task force to address regulatory remedies to the problems faced by the pretreatment program. EPA believes that, through this mechanism, they will be able to respond to the concerns faced by those attempting to implement the current program. While such an effort is laudatory after five years of wrestling with program implementation, and AMSA wil cooperate with the Agency and participate on this task force in an effort to facilitate administration of the existing program, we feel quite strongly that the nature of the program's problems require immediate legislative redress.

We believe that the pretreatment issue deserves this subcommittee's serious attention and consideration, and that any Clean Water Act legislation reported should include provisions authorizing the implementation of alternative pretreatment systems by capable POTW's. Over the past several months, we have worked closely with representatives of state and local organizations as well as other interested parties to develop an approach that addresses the needs of the sewerage agencies who must implement pretreatment programs while avoiding the difficulties associated with earlier proposals to modify the pretreatment provisions of the Clean Water Act. This approach would enable qualified local agencies to operate an alternative pretreatment program following a demonstration statisfactory to the state or EPA that the program would achieve the objectives of the national pretreatment program. It would also require these agencies to establish a monitoring program to ensure that the program adequately and continuously protected the receiving waters.

In our view, this approach would expedite the enforcement of toxic controls at the local level and enhance environmental protection throughtout the nation. By relying on local standards, set at site-specific levels necessary to protect plant operations, guard against pass-through, and ensure a sludge quality that meets state and federal requirements, we can have immediate effective pretreatment, rather than awaiting some undetermined time in the future when national categorical standards are finally promulgated for all of those industries subject to regulation by the national program. More important, qualified local agencies will be able to avoid the administrative headaches of the national categorical standard process, including those related to removal credits and combined waste streams. Finally, there are many cases where local standards are more stringent than those now being considered by EPA. The existence of less stringent categorical standards may, from a political standpoint, result in the downgrading of local efforts and standards. An alternative program would enable qualified POTWs to justify their programs not only politically, but also economically and legally, without sacrificing environmental objectives.

Our approach would enable all levels of government to conserve scarce resources. The implementation of such a program would represent a simple extension of what EPA and the states are required to do at the present time in approving local pretreatment programs for approximately 2,000 municipalities around the country. Our approach would enable EPA and the states to concentrate their limited resources on problem municipalities, while leaving the larger, more capable agencies on their own with a limited annual accounting required. This would enable EPA and the states to conserve both money and man-hours. Equally important, our approach offers potential savings to municipalities, who are now required to expend substantial sums to comply with all of the annual reporting and other procedural requirements for each of the categorical standards in effect within their jurisdictions. Ex-

penditures such as these, which are not going to result in further environmental improvement, could be saved under our approach.

In the final analysis, the pretreatment debate centers on whether the Federal or local level of government is best equipped to develop and implement effective pretreatment controls. There is no question in our minds as to who that is. Pretreatment problems are site-specific and require site-sensitive solutions. National categorical standards are not designed to address varying local conditions and are not premised on any water quality, plant protection, or sludge quality considerations. Locally derived standards, which in some cases may have to be more stringent and in other cases less stringent than applicable national standards, do consider these factors and are, accordingly, easier to justify and enforce because they make sense in the local context.

Our alternative pretreatment approach would enable local agencies to tailor solutions to meet the site specific, environmental needs of their communities in a cost efficient manner. Much time has already been lost. Municipal agencies need to know now whether they will be able to move forward with their locally designed solutions to local problems or whether they will have to impose expensive, insensitive national requirements that will not provide any greater degree of environmental protection than if they were allowed to proceed on their own. We again urge the Committee to support an alternative pretreatment approach, and we are willing to assist in any way with the development of a proposal that would accomplish this objective.

SLUDGE MANAGEMENT

AMSA is also deeply concerned over the burden of conflicting demands imposed by the various statutes which regulate sludge management options and practices available to local wastewater agencies. This has resulted in the issuance of uncoordinated regulations and guidelines, placing additional burdens on local agencies in their efforts to approach sludge management on a cost-effective, long-term basis. This failure of EPA to issue guidance for some management options has only served to compound an already critical situation.

The Association supports the concept of a single comprehensive sludge management policy within EPA, the linchpin of which would be a coordianted set of regulations and guidelines which would assist local agencies to select the best sludge management option, or options, after review and consideration of human health, environmental, social, economic and other relevant factors. Without such a comprehensive policy to bridge the gap between the decisions that have already been made regarding effective ways to treat wastewater and the decisions that have to be made about the ways to dispose of or reuse the products of the treatment process, more precious time and money will be wasted.

To accomplish our objectives in the sludge management area. AMSA has been working closely with EPA's sludge management task force, which was established to develop a comprehensive set of sludge management guidelines. We believe that this agency task force has made a great deal of progress, and we are now eagerly awaiting the initial output of its work effort. The approach that the agency is taking has been reviewed by AMSA member agencies throughout the country and has met with their approval. Accordingly, we believe that the EPA task force should be allowed to continue its work unhindered by additional statutory directives that would likely only delay completion of a long overdue comprehensive sludge management policy document. It would be premature at this time to enact additional provisions affecting this extremely important area.

FUNDING AND ENFORCEMENT

AMSA endorses a plan to accelerate municipal compliance which addresses the special needs of major metropolitan sewerage agencies with respect to both federal funding and enforcement policy. This plan calls for continued federal grant support at levels necessary to accomplish the objectives of the Clean Water Act, joined to a municipal compliance policy taking into account the complex technical, regulatory, and political considerations that are particularly evident in the large, metropolitan areas of our country. Failure to deal with these issues in a positive manner will only result in further delays in achieving the noteworthy goals of the Clean Water Act.

We wholeheartedly endorse H.R. 3882's provisions increasing the spending authorization and of appropriation are woefully inadequate to enable the nation's communities to achieve the federally mandated requirements within the specified timeframes.

The current funding picture represents a breach of the federal-local compact that was agreed to in the mid 1960's as the basis for the major rewrite of water pollution control legislation. At that time, local agencies were given to understand that the federal government would contribute the billions of dollars needed to assist the local wastewater treatment agencies in constructing needed facilities within the mandated timeframes of the Clean Water Act. While costs have escalated and the overall program has become more and more complex, the timeframes for municipal compliance have remained fairly rigid. It is now time to reevaluate the construction grants program with a view towards renewing the federal-local compact that was the foundation of the 1972 Act and to make a clear statement of intent acknowledging an enforcement strategy that takes into account federal funding.

In 1981, we conducted a survey of AMSA member agencies to assess their wastewater treatment facility construction needs to meet Clean Water Act requirements. That survey indicated total needs for all funding categories, including combined sewer overflow correction, of roughly $20 billion. Assuming a 75 percent federal share, AMSA members needed roughly $15 billion in federal grants in 1981 to complete the federal program. A copy of our survey results is included with our testimony. AMSA is currently updating this survey and will make these results available to the Committee as soon as they are available. A quick comparison of our members' 1983 and 1981 returns indicates, however, that the results are going to be in the same ballpark.

Iwould like to emphasize that the 1981 amendments to the Clean Water Act, which reduced the categories eligible for funding October 1984 and dropped the federal share to 55 percent, did not reduce AMSA member needs. These provisions, as well as others which we opposed then and continue to oppose, simply shifted $8 billion of needed construction from the federal to the local level. This funding shift only makes it more difficult for economically strapped urban areas to aggregate the large sums necessary to proceed with and complete ongoing projects within the timeframes required by law.

Based on our survey results, AMSA member agencies would require $1.5 billion per year for 10 years to meet the Act's requirements. This, in our view, is not out of line with current budgetary constraints on the Federal Government. An increase of the current appropriations to $3 billion per year, for example, would enable the large metropolitan centers throughout the country to meet the act's stringent requirements with one-half of the available appropriations. This would not represent an unreasonable compromise, especially considering the more severe water quality that these large cities face.

To ensure that these cities receive the funds necessary to comply with the Act's requirements, we support the establishment of a separate administrative and funding track to address the needs of large metropolitan agencies. Under this approach, qualified, competent grantees could choose to receive their grants directly from the Federal government, thus operating on a more cost-effective and expeditious separate, fast track. Certified agencies under our proposal would draw money directly from the Federal government to meet the requirements of their facilities plans which would give priority to those projects of most benefit in achieving improved water quality.

Under this approach, the Federal government would be able to more efficiently target funds to areas where the most significant water quality benefits would be achieved. In doing so, it would begin to redress the population inequity in the distribution of grant funds since 1972, wherein the majority of funds have gone to a minority of the sewered population. The separate track would be funded based on the specific needs of certified agencies and, if Congress chose not to appropriate adequate funds in any given year, available funds would be allocated on a priority basis. Agencies receiving less funding than called for in their plans would not be subject to enforcement actions by EPA for failure to meet their schedules. The plan would place compliance for certified grantees on an established and clear track to compliance. A copy of a more detailed summary of this proposal, with draft legislative language, is attached to this testimony.

Another key aspect of our plan to accelerate municipal compliance focusses on the need to coordinate municipal enforcement actions with the availability of Federal funds. AMSA strongly favors achievement of municipal compliance through a positive approach, not a negative one which could result in an even greater financial burden on local communities. It would be totally irresponsible on EPA's part to direct communities which do not receive construction grant assistance to capitalize facilities necessary in an unreasonable and unworkable timeframe. There is no room for an enforcement policy that penalizes treatment agencies for circumstances beyond their control or one that threatens municipalities and municipal officials

with more onerous penalties, particularly as the Federal government continues to seek to curtail its financial commitment to the municipal program and as many of the regulatory compliance standards are being revised. In the final analysis, enforcement actions should be initiated only against those dischargers whose record demonstrates that they have been recalcitrant in getting on with the job.

The establishment of a separate funding track for large agencies would enable EPA to formulate a realistic enforcement policy reflecting the unique problems that large cities face. Absent the implementation of such strategy, we would urge the Committee to legislatively direct EPA to give great weight to the availability of Federal funding in determining, case-by-case, the appropriateness of enforcement. Without sufficient Federal funding, which we believe should be $3 billion per year for 10 years, with one half targeted to major metropolitan areas, municipal agencies cannot reasonably be held accountable for failure to complete their projects in a timely fashion.

Project schedules must necessarily take funding into account, and the long-range plans for wastewater facility construction cannot be carried out with severe fluctuations in funding without a corresponding fluctuation in construction. A positive program is critical and our plan to achieve municipal compliance, based on realistic funding needs and compliance schedules, would go a long way toward achieving this goal.

COMMON LAW

We urge the Committee not to amend the Clean Water Act to state that "common law" (either federal or state) may supplement or supersede the requirements of the federal statute. Such an amendment would confuse the obligations of holders of NPDES permits and possibly interfere with the finality of those permits, inhibiting capital expenditures directed toward early environmental improvements.

Some have suggested amending the Clean Water Act (and other federal environmental statutes such as RCRA) to change the rule announced by the Supreme Court in *Milwaukee* v. *Illinois,* 451 U.S. 304 (1981) ("Milwaukee II"). They would provide that "federal common law" could be used by federal judges to impose the judge's own requirements on those who discharge into interstate waters, in addition to—or possibly in substitution for—the pervasive standards and requirements enacted by Congress in the federal statutes and implemented by federal regulation. Such an attempt to create two bodies of supreme federal law would be of doubtful constitutional validity and, in any event, would be both unwise and unnecessary.

In *Milwaukee II,* the Supreme Court reaffirmed a long standing principle that, where Congress has constitutionally spoken specifically and comprehensively on a subject, there is no room for judge-made law on the subject; the act of Congress is supreme and the courts must follow it. In applying that concept, the Supreme Court in *Milwaukee II* exhaustively analyzed the Clean Water Act, together with the regulations adopted pursuant to it, and concluded that the Act was so comprehensive that there are no gaps or "interstices" which could still be filled by judge-made federal common law in interstate water pollution cases.

Regardless of whether one agrees that the Supreme Court was correct in *Milwaukee II,* to now by statute say that the "federal common law" continues to apply would create great confusion. If the federal common law were to be legislatively interposed and the federal statute and regulations adopted thereunder provide that treatment standards must be "X", what does the "common law" do? Is a judge authorized under the preserved "common law" to define that the standards ought to be "2X", "½X" or "5X"?

In the Milwaukee case, the federal district court in Chicago imposed requirements on Milwaukee which were mathematically 6 times more stringent than the effluent standards established under the Clean Water Act and 100 times more stringent than the collection standards for combined sewer overflows contained in the Act and the recommendations under it. These requirements would have cost (in 1983 dollars) approximately $1 billion beyond the $1.7 billion Milwaukee was already spending under its permits for improvements to its wastewater treatment system. The additional requirements were so far out of line with the reality of balancing the environmental benefits against the national economic costs that the EPA in 1978 refused to consider the court-imposed requirements eligible for federal funding. The lower court judge who imposed these requirements admitted his lack of expertise in the complex area of wastewater management when he stated at the trial: "The nature of the subject matter here, however, is such that my own experience and observations in life are of relatively little use to me. It is well known to all of us

that the arcane subject matter of some of the expert testimony in this case was sometimes over the heads of all of us to one height or another."

The Supreme Court recognized this problem in *Milwaukee II:* "Congress has not left the formulation of the appropriate federal standards to the courts through the application of often vague and indeterminate nuisance concepts and maxims of equity jurisprudence, but rather has occupied the field through the establishment of a comprehensive regulatory program supervised by an expert administrative agency." 451 U.S. at 317 (1981).

The availability of complete and exhaustive statutory and administrative remedies was a critical factor in the decision by the Supreme Court in *Milwaukee II.* The Court specifically analysed the Act to find that affected states and private parties have comprehensive administrative remedies available to them under the permit-granting process of the Clean Water Act and its regulations, with opportunity for subsequent judicial review if necessary. The Court also observed that, in addition to the prospective review of proposed discharges, remedies cover emergency situations and the modification or re-opening of permits to deal with potential pollution problems not covered in the initial permit-granting process.

The Supreme Court did not stop at just reviewing remedies. Its exhaustive analysis of the Clean Water Act in *Milwaukee II* found it to be comprehensive and complete in all respects. If Congress disagrees with the Court and determines that some "gap" does exist in the Act, the proper course of action is to "fill the gap" by legislation. Congress should not engage in legislative "overkill" by granting federal judges a "roving commission" to supersede the requirements of the federal statute by applying the "federal common law", whatever that is. Federal common law, if applied, would subject cities located on interstate waters to the unbridled and uncontrolled imposition of what individual judges might dictate. This could occur, as it did in the Milwaukee case, without regard to the economic or political consequences to the affected municipality and their citizens, or to the country as a whole.

Persons who obtain permits under the Federal Act and standards should be entitled to design and operate a sewerage treatment plant in reliance that compliance with the permits means that they have in fact complied with federal standards. Permitting the common law to operate and judges to apply previously unstated, inherently not nationally-uniform collection and treatment standards would create fiscal and practical chaos for permit holders. What is the purpose of a permit if it is not to set forth what the holder of the permit is required to do under federal law.

Under the holdings of the two Supreme Court decisions in the *Milwaukee* cases (*Milwaukee II* and *Milwaukee I, Illinois* v. *Milwaukee,* 406 U.S. 91 (1972)), only the comprehensive federal statutory law embodied in the Clean Water Act and its regulations can now apply in interstate water pollution disputes. However, as to intrastate water disputes, authority exists for the position that state common law is applicable, since these disputes do not involve the interests of federalism, the nature of the parties, and the type of relief sought, all of which were present in the *Milwaukee II* case.

There has been no public outcry that parties in pullution cases do not have adequate remedies available. Much of the discussion which has taken place has dealt with the issue of compensation of parties injured by hazardous waste and toxic chemical pollution. However, these disputes are typically intrastate in nature. In sharp contrast, water disputes are frequently interstate. We agree with the Superfund Section 301 Study Group's report in 1982 which concluded that state common law, in some cases implemented and supplemented by state statute, remains the prime and perhaps exclusive source of determining the nature and adequacy of remedies available to litigants in hazardous waste and toxic chemical pollution cases. *Milwaukee II* does not lead to a conclusion that federal statutes have preempted state common law rights in the area of intrastate, land-based hazardous waste pollution. Therefore, amending the Clean Water Act or other federal environmental statutes such as RCRA to provide that state common law continues to be available is wholly unnecessary.

OCEAN WAIVERS

A number of AMSA coastal and estuarine agencies have applied for modified NPDES permits under subsection 301(h). Accordingly, AMSA is concerned about the proposed changes in 301(h) contained in H.R. 3282.

By way of background, a number of AMSA agencies were involved in the discussions with EPA and Congressional subcommittees and their staffs in the development of 301(h). In its basic and simplest form, 301(h) was intended to reflect a common sense approach to implementation of the Clean Water Act. Local govern-

mental agencies are, of course, responsible to their constituencies and are the foot soldiers in the effort to clean up our nation's water. Initially, an absolute requirement for all municipalities to implement secondary treatment was imposed by virtue of EPA's inflexible definition of secondary treatment, despite the original Public Law 92-500's authorization to EPA that allowed EPA to establish a more flexible definition of this term. This absolute requirement simply made no sense in those coastal and estuarine areas of the country where the impact on the receiving water of effluent with less than secondary treatment resulted in no adverse impact. The underlying concept of 301(h) is that where an agency can demonstrate that its effluent can be disposed of in marine waters without any adverse environmental effects, secondary treatment in unnecessary and wasteful of public funds and should not be required.

Section 301(h) was drafted to include very stringent criteria that must be met before the Administrator could exercise discretion in granting modified permits. The modified permits are for a five-year period and a rigorous monitoring program is required of agencies with modified permits. Although AMSA members were impatient with the length of time EPA took to promulgate the regulations and in processing applications, AMSA is pleased to say that in general the implementation has been fair and reasonable. This is not to say that all AMSA agencies' applications have been tentatively approved by EPA, for in fact a significant number have been tentatively rejected. The agencies that decided to apply for 301(h) permits were compelled by the regulations implementing the section to spend hundreds of thousands of dollars and devote enormous amounts of staff time and resources to preparing applications. The rigorous process for evaluating the applications and acquiring additional information has been a burden, but one that the agencies have accepted as necessary to implement 301(h). These agencies recognize the fundamental requirement that the burden is theirs to demonstrate that in their particular facility the criteria of the subsection are met and that adequate and reasonable monitoring would occur upon issuance of a modified permit. To come along five years after the initiation of this program and impose additional requirements is equivalent to changing the rules when the game is nearly over. If there were convincing and compelling evidence that the initial criteria were inadequate, then there would be at least some basis for the retroactively imposing the criteria proposed in H.R. 3282.

Public Law 92-500 is structured so that a modified permit can be issued by the Administrator, but failing that, the secondary treatment requirement is universal and absolute. Under these conditions, it is clear that any changes in 301(h) that could result in the failure by agencies who would otherwise receive a modified permit to qualify for such a permit would impose a great burden on these agencies and the people they serve. This would be especially painful in instances in which EPA has determined that the project operation, as evaluated by EPA's task force, satisfactorily meets the current stringent criteria of 301(h). In our view, it makes more sense to rely upon the judgment and good sense of the Administrator and EPA experts to negotiate with the agencies to achieve any additional improvement of operation that may be warranted in specific local or regional situations. The existing language of 301(h) grants EPA this discretion. The rigorous 301(h) monitoring program should provide EPA with a significant amount of water quality data which can be used to further evaluate the need for operational improvements. But to restructure the Act at this late date is unfair, unreasonable and unsupportable. We would support a careful and extensive review by the Subcommittee of EPA's implementation of 301(h) and would be pleased to participate in hearings or any other inquiry to assess the manner in which EPA has discharged its obligations under 301(h).

Among the features of the regulations implementing 301(h) is a detailed and comprehensive procedure which affords the public and interested organizations the opportunity to comment upon and participate in hearings in which tentative 301(h) decisions of the EPA Administrator are subject to review and comment. Moreover, 301(h) now requires approval by the appropriate state agency which offers an additional check on EPA. Ultimately, any individual or organization that believes the Administrator improperly exercise his discretion in granting a modified permit has recourse to the courts. Thus, the public has adequate protection by virtue of the procedures adopted by EPA and which AMSA agencies support, accept and have used.

Primary treatment.—The proposal in H.R. 3282 to require a minimum of primary treatment before a 301(h) permit can be issued is reasonable on its face. We must add, however, that we are unaware of any ASMA agency that does not presently provide primary treatment as defined by EPA criteria. We do take exception to the requirement of H.R. 3282 that primary treatment must include chemical treatment to control pathogens. The only chemical treatment process which meets this require-

ment and which is in widespread use is chlorination. While such treatment to reduce pathogens is appropriate and often necessary in areas where the discharge is close to bathing areas or shellfish beds, there is considerable evidence that chlorination of treated effluents significantly increases the concentrations of a number of toxic chlorinated organic compounds in the effluent, some of which are bio-accumulated in marine organisms. the quantity of such toxic chlorinated organics introduced to the environment by chlorination of treated effluents is very small. However, it would serve environmental protection better if chlorination were not required in those instances where it is not needed to protect human health. We would, therefore, suggest that, if the primary treatment is adopted, chemical treatment to control pathogens be required "as appropriate" so that in those areas where no risk to human health exists, the introduction of toxic chlorinated organics can be avoided. Seawater has the natural ability to destroy pathogens, and where no recreational activities or shellfishing take place in the proximity of a discharge, we should rely on this natural ability to treat our waters.

Water quality criteria.—The proposal in H.R. 3282 to require that water quality criteria established under 304(a)1 be met after initial mixing is an extremely troublesome one. 301(h) applications are for discharge to marine waters. The water quality criteria relating to those waters established under 304(a)1 are only advisory criteria and for several chemicals are subject to serious scientific question. The criteria are sestablished on the basis of laboratory tests using artificial seawater which does not contain certain naturally occurring components which detoxify some of the chemicals for which criteria have been established. Coastal and estuarine seawaters from unpolluted areas often naturally have concentrations of certain chemicals which exceed the applicable marine water quality criteria concentrations, and yet are known to support balance biological populations. This is the primary reason that the marine water quality criteria are only advisory. We believe that the existing requirement of the 310(h) application process, that marine water quality criteria be considered, is appropriate. However, to make adherence to these criteria after initial mixing mandatory would in some areas cause great problems without contributing to environmental protection. Indeed, some discharges would need to be "cleaner" than the uncontaminated marine waters they are discharged into to bring the natural marine water into compliance with the criteria.

Estuarine areas.—The current 301(h) regulations recognize that many estuarine areas may be more sensitive to pollutants and to degradation than the open ocean by including additional questions which must be answered to the satisfaction of the Administrator before a modified permit can be issued. If any estuarine area does not properly meet those criteria, the Administrator cannot issue a permit. That this is so is demonstrated by EPA's track record, in which they have recommended against issuing 301(h) permits, primarily in instances in which agencies are discharging into sensitive stressed estuaries. Barring estuaries absolutely, without regard to what actually occurs, is analogous to the original error which established a universal secondary treatment requirement regardless of whether it was necessary. Many estuaries such as Puget Sound are well-flushed deep water bodies and properly designed and controlled less-than-secondary discharge would adequately protect sensitive populations, human health or other uses of the estuary. We are unaware of any instances in which the EPA recommendation ignores or does not properly protect the indigenous aquatic population through the issuance of a permit. We urge that this change be rejected.

Pretreatment.—Including special pretreatment requirements for modified permit recipients is not supportable by any evidence or scientific or technical assessment. As is abundantly clear from other portions of this statement, AMSA and its members are committed to a vigorous and effective pretreatment program. Indeed, most agencies have already initiated their own pretreatment programs not only to meet the requirements of the law, but also to discharge their responsibilities to the communities they serve. There is no basis for imposing extra pretreatment requirements on coastal agencies applying for 301(h) permits. Moreover, as pointed out elsewhere in this statement, the requirements as currently contained in the Act are not capable of being implemented.

The underlying concept for 301(h)—that public funds should not be wasted for unnecessary construction and treatment—is even more important today than when 301(h) was first enacted. With drastic reductions in federal funding for the clean water construction grant program, using the limited funds for the most efficient and effective treatment becomes imperative. In California alone it is estimated that, if modified permits are issued, nearly a billion dollars worth of unnecessary construction to attain secondary treatment will be avoided. This is an important consideration, and one we urge the Congress to consider in contemplating any changes in the

Act. We are not urging that dollars take precedence over public health or environmental concerns. What we are saying is that we all have an obligation to eliminate unnecessary expenditures of funds where that can be done in an environmentally acceptable manner.

ANTIBACKSLIDING

AMSA views the NPDES permitting process as a critical tool in the nation's effort to achieve clean water objectives. Current permitting procedures provide permitting authorities with the flexibility to adjust effluent limitations based on available information with respect to regulated contaminants and their potential impact on receiving waters. In some cases, this may mean reopening a permit to impose more restrictive limitations on the permittee to meet water quality standards. In other cases, it may mean relaxing exisiting requirements without sacrificing environmental considerations.

We believe that this flexibility is imperative and, accordingly, oppose any efforts to unnecessarily and unfairly restrict permitting authorities in their determination of appropriate effluent limitations on a case-by-case basis. Any permitting process that ignores the dynamics of the water quality standard setting process would be inherently unfair and costly to permit holders.

NONPOINT POLLUTION

AMSA appreciates the Committee's interest in controlling non-point sources of pollution as part of the overall national plan to achieve water quality goals. At the same time, however, we caution the Committee to keep in mind the significant point source pollution problems that remain to be addressed. This is especially the case considering the high price tag that we fear will be associated with addressing non-point source pollution controls. In dealing with this very important issue, we urge the Committee to give careful consideration to the potential costs of such a program. We have no objection to the funding of non-point source projects provided that funding is separate and apart from Title II construction grants funding. We further urge the Committee to reconsider the Congressional action in 1981 which made combined sewer overflow projects ineligible for Federal funding. In urban areas throughout the nation, significant pollution loadings and flooding occur during periods of rainfall or snow melt. The water quality impact of these essentially non-point discharges is severe and can persist for relatively long periods of time after the wet weather subsides. A comprehensive non-point source program must address these problems as an important way to improve water quality in many areas of the country.

AMSA is not proposing that funds be indiscriminately allocated to projects for the separation of sanitary and storm sewers. Rather, we believe that funding eligibility for CSO correction should be linked to Category I & II eligibilities and be based on the cost effectiveness of and the need for the project to meet water quality objectives. In many cases, including those representing 23 percent of AMSA member agency needs, CSO projects are necessary to address water quality problems. The construction of treatment facilities will simply not be enough. Eliminating the CSO needs category fails to recognize this approach in meeting clean water objectives. More important, it places local officials in the unenviable position of having to explain backlogged basements to irate citizens who approved substantial bond issues to solve a water quality problem.

In the final analysis, an integrated and rational approach to addressing all aspects of urban water pollution management and control, including CSO correction, is imperative. We believe that our separate track funding approach which I discussed earlier would provide the foundation for such an approach. In the interim, we recommend again that the Committee take note of the continued need for funding of CSOs, and address it in the context of an overall non-point source pollution program.

CONCLUSION

The municipal treatment agencies throughout the country have the ultimate responsibility for insuring the achievement of the Clean Water Act's objectives and goals. We have made a great deal of progress to date and will continue our efforts to achieve clean water goals. We do, however, need continued and enhanced funding support from the Federal government. We also need assurances that Federal enforcement policy is going to reflect the availability of Federal dollars to complete ongoing and begin new projects.

AMSA's Plan to Achieve Municipal Compliance would represent a significant step forward in achieving program goals for major metropolitan agencies. A clear timetable must be set for achieving compliance, linked to a realistic funding program.

With respect to the pretreatment program, we need the flexibility to operate our own cost-effective and environmentally sound programs rather than the existing resource-intensive program premised on national categorical standards. Finally, with respect to common law, ocean waivers, sludge management, permitting, and nonpoint source issues, we implore the Committee to proceed carefully to guard against the enactment of provisions that may result in making it even more difficult for wastewater treatment agencies to comply with the Federal clean water mandates.

This concludes my prepared remarks. I would be pleased to answer any questions you might have at this time.

SUMMARY DATA—1981 NEEDS SURVEY

Totals, by category[1]	Federal dollars needed	Category as percentage of total
Secondary—I	$5,882,823,000	40
Advanced—II	1,887,085,000	13
I/I—IIIa	146,835,000	1
Repl/Rehab.—IIIb	707,669,000	5
New coll.—IVa	604,645,000	4
New inter.—IVb	2,010,124,000	14
CSO—V	3,456,011,000	23
Total	14,695,192,000	100
Grand total[2]	15,128,792,000	

[1] Three agencies did not complete survey.
[2] Total needs for three agencies not completing survey, based on 1980 survey information is $443,600,000.

Total AMSA agency needs (at the 75 percent share level), including 1980 data for threee agencies: $15,128,792,000.
AMSA agency total population: 70,618,769.

AMSA's Separate Track Funding Proposal

A SUMMARY

The Association of Metropolitan Sewerage Agencies (AMSA) has developed a plan to improve the nation's clean water program and end the waste of valuable time, money and manpower at all levels of government. This plan would avoid the inequities of the formula now used to distribute available federal dollars to the states by targeting adequate federal resources to metropolitan areas where the most serious water quality problems exists and where clean-up efforts would benefit the greatest number of people. This plan also would eliminate unnecessary and unproductive delays for state and federal review for the design, construction and operation of facilities funded by the federal government. In effect, the AMSA plan would create two classes of grantees, a class of certified agencies and another class composed of all other grantees that would continue to operate under existing program requirements and procedures.

The heart of the AMSA approach is the certification of qualified wastewater treatment agencies, a concept already developed and promoted by EPA. This would establish an agency's competence to perform on its own, subject to post audit, many of the routine requirements which now must be reviewed by state, regional and national regulators. To achieve certification, an agency would have to demonstrate its legal, administrative and technical competence in these areas to the satisfaction of the state and federal officials.

If an agency chose to seek certification and won approval, it would then consolidate present and future requirements under the Clean Water Act into an integrated Facilities Implementation Plan (FIP) for all design and construction in accordance with local determination of how compliance should be achieved. The development of this plan would be funded by EPA as a Step I facility plan. The plan itself would include a schedule of year by year funding needs. It would also have to conform to regional and state water quality programs adopoted under the requirements of sections 208 and 303 of the Act.

Once EPA approved the plan, the certified agency would be able to draw down funds from a separate national account for certified agencies. Congress would fund this account based on the year by year funding requirements in the approved schedules submitted to EPA by certified agencies.

If Congress did not choose to appropriate enough funds to meet all scheduled needs of certified agencies in a given year, available funds would be prioritized. However, agencies receiving less than their plans called for would not be subject to enforcement actions by EPA for failure to meet their schedules.

By establishing this separate administrative and funding mechanism, AMSA believes that large, sophisticated municipal agencies would be in a stronger position to move forward with pressing projects without the funding uncertainties and bureaucratic snarls that have stalled worthy project in the past. At the same time, the AMSA approach would relieve the states of a massive oversight burden, thus allowing them to concentrate their limited financial and personnel resources on smaller communities and rural areas that are in need of state assistance. Finally, the AMSA approach would enable the Congress for the first time to see the impact of federal appropriations as well as its failure to appropriate.

AMSA PROPOSED SEPARATE TRACK FUNDING BILL

Section 1. Section 207 of the Clean Water Act is amended—

(1) by inserting "(a)" after "Sec. 207.";

(2) by striking "sections 206(e), 208 and 209" and adding in lieu thereof "sections 206(e), 208, 209 and 218,"; and

(3) by adding the following new subsection at the end thereof: "(b) There is authorized to be appropriated to carry out section 218 of this title $1,200,000,000 per fiscal year for fiscal years ending September 30, 1982, September 30, 1983, September 30, 1984, September 30, 1985, September 30, 1986 and September 30, 1987."

Section 2. Title II of the Clean Water Act is amended by adding the following new section at the end thereof:

Section 218. (a)(1) Notwithstanding any other provisions of this Act, the Administrator is authorized to delegate, with concurrence of a state, performance of his responsibilities under title II of this Act and other Federal laws with respect to projects or proposed projects for treatment works by certification of a municipal, intermunicipal, areawide or interstate agency providing wastewater treatment services to a population of not less than 250,000 persons of its capability to perform such responsibilities, subject to post audit of program performance.

(2) Nothing in this section shall affect or discharge any responsibility or obligation of the Administrator under any Federal law.

(b) The Administrator shall not accept any certification provided for in subsection (a) of this section unless he determines that the municipal, intermunicipal, areawide or interstate agency requesting certification has the legal, financial, technical and administrative capability to meet established Federal and, as appropriate, state regulations relating to the construction grant program.

(c) Agencies certified by the Administrator under this section shall prepare and submit to the Administrator for approval a Facilities Implementation Plan consolidating all proposed and ongoing projects for which the certified agency has received grants prior to enactment of this section and specifying design and construction projects, including funding schedules, necessary to meet the enforceable requirements of the Act. Amended plans may be submitted to reflect modified conditions affecting the agency program. Projects specified by a certified agency in a Facilities Implementation Plan shall conform with adopted areawide waste treatment management plans under section 208 of the Act and adopted implementation plans under section 303 of the Act. The Administrator shall act upon such plan as soon as practicable after the same has been submitted and his approval of such plan or plan amendment shall supercede the requirements of section 301(b) (1)(B) and 301(b) (2)(B) and entitle the certified agency agency to funding pursuant to section 207(b) of the Act, subject to appropriations.

(d)(1) To carry out this section, the Administrator shall obligate funds appropriated pursuant to section 207(b) of the Act to certified agencies according to schedules for projects established in Facilities Implementation Plans. In the event the Administrator determines that a certified agency, because of project delays or other causes, is unable to meet the funding schedule established in a Facilities Implementation Plan, he shall reprogram funds obligated to such agency to other certified agencies, as appropriate. Notwithstanding any other provision of this Act, the costs associated with post-construction evaluations, including any required modifications or corrections resulting therefrom, shall be eligible for funding. The amount of any

grant for the implementation of a Facilities Implementation Plan under this section shall be 75 per centum of the cost thereof, provided that projects thereof specified in such Plan utilizing innovative or alternative wastewater treatment processes and techniques referred to in section 201(g)(5) of the Act shall be eligible for funding in the amount of 85 per centum of the costs thereof. In the event that funds appropriated under section 207(b) are not sufficient to implement all Facilities Implementation Plans for a given fiscal year, the Administrator shall obligate available funds to scheduled projects established in such plans in accordance with the following priorities: projects which are necessary to maintain schedules for timely completion of ongoing construction; projects which are ready to go to construction; and projects which will result in the greatest benefit upon receiving waters pursuant to the goals of the Act. Certified agencies with Facilities Implementation Plans which are not funded under this section shall be eligible for grants from funds appropriated under section 207(a) and allotted to the states under section 205(c) of the Act.

(2) The Administrator shall reserve out of funds appropriated under section 205(b) an amount not to exceed five cents per capita or $25,000, whichever is greater, for each eligible agency for grants to cover 100 per centum of the costs of achieving and maintaining the capability to fulfill certification responsibilities under this section.

(e) In the event the U.S. fails to make financial assistance under this Act available in a timely manner to enable a certified agency to complete design and construction projects according to funding schedules established in a Facilities Implementation Plan, the Administrator shall issue a permit pursuant to section 402 of the Act or modify a permit issued pursuant to that section to extend the agency's time for compliance with the requirements of the Act. Such permit shall contain a schedule of compliance for the certified agency based on the earliest date by which financial assistance will be available from the U.S. to complete projects established by the Agency's Facilities Implementation Plan.

(f) If the Administrator determines, after public hearing, that a certified agency fails to meet any of the requirements of this section with regard to a project or proposed project established in the agency's Facilities Implementation Plan, he shall suspend certification authority for such agency.

(g) The Administrator and appropriate state agencies shall conduct interim and final program audits of design and construction projects established by a certified agency's Facilities Implementation Plan.

(h) The Administrator shall promulgate such rules and regulations as may be necessary to carry out this section. The initial rules and regulations necessary to carry out this section shall be promulgated not later than the ninetieth day after date of enactment of this section.

Section-by-Section Analysis

Section 1.—This section amends the present Section 207, which authorizes funds for the Wastewater treatment construction grants program. Subsection (1) makes room for a new subsection, by labelling the present Section 207 as Section 207(a). Subsection (2) adds a reference to the new Section 218 to the list of Sections which are not funded by Section 207(a). Finally, subsection (3) establishes the new funding authorization for the separate track, which at $1.2 billion per year for the next six years, fiscal year 1982-1987.

Section 2.—This section sets up the mechanism for the separate track program for major metropolitan areas, by creating a new Section 218.

Subsection (a)(1) authorizes the Administrator of EPA to delegate to local or metropolitan agencies serving 250,000 or more the authority for planning and building projects under the construction grants program. Such delegation would be with the concurrence of the state. This section means that a grantee, once delegated, would not be required to seek further approval of change orders, plans, design, or programs for public participation or minority business. The grantee delegated these tasks would be cleared to perform on its own, subject only to an audit by the agency of its performance of the program. This program audit (not an accounting exercise) does not affect the timely process of the grantee program, since it comes afterwards, and is the tool for deciding whether certification is to be continued or not (see Subsection (f) below).

Subsection (a)(2) emphasizes that this new section does not abridge any of the requirements of the Clean Water Act or other Federal laws.

Subsection 218(c) establishes the requirement for a Facilities Implementation Plan, which becomes the controlling plan for a grantee to meet its requirements under the Clean Water Act. The plan must provide for meeting requirements established by areawide plans under Section 208 and Section 303, and must also set out

funding schedules for the tasks it lays out, through planning, design and construction. If the grantee proposes a Plan which does not meets the requirements of the Act, i.e., by omitting an AWT facility, the Administrator's approval of the Plan supercedes the requirements under Section 301 for secondary treatment and best practicable waste treatment technology.

Subsection 218(d)(1) requires the Administrator to make funds available to certified grantees according to the schedules of the approved Facility Implementation Plans. If the schedule of the FIP is skewed by events, the Administrator has the flexibility to use the funds for another project. This subsection also establishes eligibility for post-construction evaluations and any correction which must be made to the project as a result of those evaluations.

Funding under this section is set at 75 percent, with innovative elements fundable at 85 percent as in the present law.

If Congress fails to appropriate sufficient funds to cover all the schedules of the approved agency FIPs, provisions is made for dealing with the shortfall: FIP projects are funded in priority order, with ongoing construction having first priority, then projects ready to go to construction, and then projects giving the greatest water quality benefit. This section provides that if a certified agency is not funded under this section, it may seek funds through the existing state priority system.

Subsection 218(d)(2) provides a set-aside of funds from the separate track appropriation, which may be drawn upon by agencies to cover the full cost of developing and maintaining technical and administrative capability required for certification. This includes expenses for technical and administrative training of grantee personnel. A grantee may draw up to the greater of $25,000 or five cents per capita of the population served.

Subsection 218(e) provides that permit conditions shall be modified or extensions of time shall be granted to reflect the unavailability of funds to complete projects as scheduled by the FIP. Modified permits shall contain schedules to reflect dates when funding will be provided.

Subsection 218(f) provides for removal of certified status for grantees which do not meet requirements for projects covered by an FIP. Suspending certification means that an agency will no longer be eligible for funding under the separate track, but must seek funds for its projects through the state priority system, until certification is again granted.

Subsection 218(g) provides for program audits to monitor a grantee's performance of the elements of its FIP. The program audits are not accounting reviews, but are reviews of whether the agency is carrying out the performance of the mandates for which it has been given authority under certification.

Subsection 218(h) gives the Administrator of EPA the authority to establish regulations, and places a deadline of three months for putting the initial rules into effect.

Mr. ROE. Please proceed.

TESTIMONY OF CHARLES B. KAISER, JR., ASSISTANT EXECUTIVE DIRECTOR AND GENERAL COUNSEL, METROPOLITAN ST. LOUIS SEWER DISTRICT AND CHAIRMAN, AMSA LEGISLATIVE COMMITTEE REPRESENTING ASSOCIATION OF METROPOLITAN SEWERAGE AGENCIES, ACCOMPANIED BY LEE C. WHITE, COUNSEL TO AMSA; AND KEN KIRK, ASSISTANT EXECUTIVE DIRECTOR, AMSA

Mr. KAISER. Good morning, Mr. Chairman.

Mr. ROE. Would you identify for the record your colleagues.

Mr. KAISER. Yes, sir. On my right is Mr. Lee White, counsel for AMSA. On my left is Mr. Ken Kirk, assistant executive director of AMSA.

Mr. Chairman, I would like to thank you for making the longer statement a part of the record.

Mr. ROE. Without objection, so ordered.

Mr. KAISER. I have prepared a summary which I would like to read and then I would be available for questions.

My name is Charles B. Kaiser, Jr., and I am the assistant executive director and general counsel of the Metropolitan St. Louis Sewer District and chairman of the Association of Metropolitan Sewerage Agencies' Legislative Committee. I appreciate this opportunity to present the subcommittee with AMSA's views on the major clean water issues of concern to our members. AMSA's members serve more than 77 million people in 94 of the Nation's major urban areas and treat over 50 percent of the wastewater subject to existing Federal pretreatment mandates across the country.

We believe that the pretreatment issue deserves this subcommittee's serious attention and consideration and that any Clean Water Act legislation reported should include provisions authorizing the implementation of alternative pretreatment systems by capable POTW's. Over the past several months we have worked closely with representatives of State and local organizations, as well as other interested parties, to develop an approach that addresses the needs of the sewerage agencies who must implement pretreatment programs, while avoiding the difficulties associated with earlier proposals to modify the pretreatment provisions of the Clean Water Act.

This approach would enable qualified local agencies to operate their own programs in lieu of national categorical standards following a demonstration satisfactory to the State or EPA that the program would achieve the objectives of the national pretreatment program. It would also require these agencies to establish a monitoring program to insure that the program adequately and continuously protected the receiving waters.

This approach would expedite the enforcement of toxic controls at the local level and enhance environmental protection throughout the Nation. By relying on local standards, set at site-specific levels necessary to protect plant operations, we can guard against passthrough, and insure a sludge quality that meets State and Federal requirements. We can then have immediate and effective pretreatment rather than awaiting some undetermined time in the future when national categorical standards are finally promulgated for all of those industries subject to regulation by the national program.

This approach would enable all levels of government to conserve scarce resources. The implementation of such a program, representing a simple extension of what EPA and the States are required to do at the present time in approving local pretreatment programs for approximately 2,000 municipalities, would enable EPA and the States to concentrate their limited resources on problem municipalities while leaving the larger, more capable agencies on their own with a limited annual accounting required.

The pretreatment debate centers on whether the Federal or local level of government is best equipped to develop and implement effective pretreatment controls. There is no question in our minds as to who that is. Pretreatment problems are site specific and require site sensitive solutions.

National categorical standards are not designed to address varying local conditions and are not premised on any water quality, plant protection, or sludge quality considerations. Locally derived standards, which in some cases may have to be more stringent and

in other cases less stringent than applicable national standards, do consider these factors and are, accordingly, easier to justify and enforce because they make sense in the local context. Our approach would provide the same degree of treatment as the existing national categorical standard approach, and it would accomplish this result quicker and in a less costly manner.

We understand that EPA is in the process of establishing a pretreatment task force to address regulatory remedies to the problems faced by the pretreatment program. EPA believes that through this mechanism they will be able to respond to the concerns faced by those attempting to implement the current program.

While such an effort is laudatory, and AMSA will cooperate with the Agency and participate on this task force in an effort to facilitate administration of the existing program, the nature of the program's problems require immediate legislative redress.

AMSA endorses a plan to accelerate municipal compliance which addresses the special needs of major metropolitan sewerage agencies with respect to both Federal funding and enforcement policy. This plan calls for continued Federal grant support at levels necessary to accomplish the objectives of the Clean Water Act, joined to a municipal compliance policy taking into account the availability of Federal funding as well as the complex technical, regulatory, and political considerations that are particularly evident in the large, metropolitan areas of our country.

We wholeheartedly endorse H.R. 3282's provisions increasing the spending authorization for the construction grants program as consistent with this plan. Present levels of authorization and appropriation are woefully inadequate to enable the Nation's communities to achieve the federally mandated requirements within the specified timeframes.

In 1981 we conducted a survey of AMSA member agencies to assess their wastewater treatment facility construction needs. That survey, which is currently being updated, indicated that AMSA members needed roughly $15 billion in Federal grants, or $1.5 billion per year for 10 years, to meet the act's requirements.

This, in our view, is not out of line with current budgetary constraints on the Federal Government. An increase of the current appropriations to $3 billion per year, for example, would enable the large metropolitan centers throughout the country to meet the act's stringent requirements with one-half of the available appropriations.

We support the establishment of a separate administrative and funding track to insure that the needs of the large metropolitan agencies are met. Under this approach, qualified, competent grantees could choose to receive their grants directly from the Federal Government, thus operating on a more cost effective and expeditious separate fast track. The Federal Government would be able to more efficiently target funds to areas where the most significant water quality benefits would be achieved.

The other key aspect of our plan to accelerate municipal compliance focuses on the need to coordinate municipal enforcement actions with the availability of Federal funds. In our view, it would be totally irresponsible on EPA's part to direct communities which

do not receive construction grant assistance to capitalize facilities necessary in an unreasonable and probably unworkable timeframe.

There is no room for an enforcement policy that penalizes treatment agencies for circumstances beyond their control or one that threatens municipal officials with more onerous penalties, particularly as the Federal Government continues to seek to curtail its financial commitment to the municipal program and as many of the regulatory compliance standards are being revised.

The association supports the concept of a single comprehensive sludge management policy within EPA. AMSA has been working closely with EPA's sludge management task force, and we are now eagerly awaiting the initial output of its work effort. We believe that the EPA task force should be allowed to continue its work unhindered by additional statutory directives that would likely only delay completion of a long overdue comprehensive sludge management policy document.

We urge the committee not to amend the Clean Water Act to state that "common law"—either Federal or State—may supplement or supersede the requirements of the Clean Water Act. In *Milwaukee* v. *Illinois,* 451 U.S. 304 (1981) (*"Milwaukee II"*), the Supreme Court concluded that the Clean Water Act was so comprehensive that there are no gaps or "interstices" which could still be filled by judge-made Federal common law.

I found it interesting hearing the chairman and other members talking about the problems of court-made law as related to 404. To now by statute apply the "Federal common law" to interstate water pollution cases would create great confusion and subject cities located on interstate waters to the unbridled and uncontrolled imposition of what individual judges mig dictate. And since the *Milwaukee II* decision does not lead to a conclusion that the Federal statute has preempted State common law rights, amending the Clean Water Act to provide that State common law continues to be available is wholly unnecessary.

AMSA is concerned about the proposed changes in 301(h) contained in H.R. 3282. The AMSA coastal and estuarine agencies that have applied for modified NPDES permits under this subsection recognize the fundamental requirement that the burden is theirs to demonstrate that in their particular facility the criteria of the subsection are met and that adequate and reasonable monitoring would occur upon issuance of a modified permit. To come along 5 years after the initiation of this program and impose additional requirements is equivalent to changing the rules when the game is nearly over.

In lieu of restructuring of the act at this late date, which we view as unfair, unreasonable, and unsupportable, we would support a careful and extensive review by the committee of EPA's implementation of 301(h) and would be pleased to participate in hearings or any other inquiry to assess the manner in which EPA has discharged its obligations under 301(h).

AMSA opposes the antibacksliding provisions that were added to the Senate bill. We believe that current permitting procedures, which enable permitting authorities to adjust effluent limitations based on available information, should be continued. Any permitting process that ignores the dynamics of the water quality stand-

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ard-setting process would be inherently unfair and costly to permitholders.

AMSA also appreciates the committee's interest in controlling nonpoint sources of pollution, and we have no objection to the funding of non-point-source projects provided that funding is separate and apart from title II construction grants funding.

In dealing with this very important issue, we caution the committee to keep in mind the significant point-source pollution problems that remain to be addressed and to reconsider the congressional action in 1981 which made combined sewer overflow projects ineligible for Federal funding. We believe that Congress should renew funding eligibility for CSO correction, based on the cost effectiveness of and the need for the project to meet water quality objectives.

The municipal treatment agencies throughout the country have the ultimate responsibility for insuring the achievement of the Clean Water Act's objectives and goals. AMSA's plan to achieve municipal compliance, with a clear timetable for achieving compliance linked to a realistic funding program, would expedite their achievement.

At the same time, AMSA's pretreatment approach would enable capable POTW's to operate their own cost-effective and environmentally sound programs rather than the existing resource-intensive program premised on national categorical standards.

With regard to other issues, such as common law, ocean waivers, sludge management, antibacksliding, and nonpoint sources, we recommend that the committee proceed carefully to guard against the enactment of provisions that may result in making it even more difficult for wastewater treatment agencies to comply with the Federal clean water mandates.

This concludes my summary, but before I respond to questions, I would like to comment on something I think that is very, very essential to meeting the deadlines and requirements of the Clean Water Act. I would like to be specific about my own agency, where we have secondary treatment everywhere except one major plant. We are now being asked by EPA to come up with a schedule to achieve secondary at that point.

We are not under any criminal prosecution; we are not under any civil prosecution. We have not been asked until now to start talking about signing some form of document. Our relationship with our State and EPA is excellent. We have been cleaning up areas, annexing areas, trying to regionalize, and I think we have an excellent record.

However, we are now faced with one problem. Our State says "We don't think you need secondary on the Mississippi River there. We are going to give it a low priority. And we just don't think that you should have any plant money." The Federal Government says, "Hey, we would like to see you go ahead and make secondary treatment. We are only talking about $300 to $400 million and $25 million operating costs, 75 percent of which is electric and gas."

Missouri gets a large portion of its grant based on the population of St. Louis and our needs for secondary treatment at that large treatment plant. It seems that I am not unreasonable to say that if you are going to put my feet to the fire to meet a goal, then some-

body ought to put the State's feet to the fire and say "You are getting so much money based on the Metropolitan St. Louis area's population and needs, they ought to get a little." I am not even saying we should get 55 percent, but we should get something.

The Federal Government says, "Well, we are not getting into the middle of that." At least region VII says, "You know, we don't like to get into the State. That is a State's right issue."

Here we are between two agencies, one saying "Let's move faster," and the other saying, "We don't think you need it." That is a real problem. I thought maybe I was alone, so I went to Kansas City, and they are getting hammered on the head the same way and are faced with the same thing because they are on the Missouri River. Most members of the AMSA board have projects that are not finished. If you are going to give the State money based on our needs, and if you are going to take us to court, I believe maybe we should get some of that money.

Mr. ROE. Can the gentleman yield?

We are on a second call now. So we are going to have to go vote. Suppose we decide to, because we have a couple of votes coming up, suppose we decide to break now. Then we will continue with the question and answer and return at 1 o'clock.

Mr. KAISER. That would be excellent. Thank you for your attention.

Mr. ROE. The subcommittee will stand in recess until 1 o'clock.

[Whereupon, at 12:10 p.m., the subcommittee recessed until 1 p.m. the same day.]

AFTERNOON SESSION

Mr. ROE. The committee will reconvene.

When we were called to the floor, we were in the middle of the testimony of Mr. Charles Kaiser of the Association of Metropolitan Sewerage Agencies. You were about to express the second point you had in mind.

Mr. KAISER. Yes, sir. The other thought was—had to do with a statement Mr. Ledbetter made. Mr. Ledbetter stated in his testimony, which I read, that State agencies do need Federal grants to keep the program going. I would be the last to deny that. And I would like to wholeheartedly support that. However, in his next breath he said that is fine, yes, he should have a grant, but give us a loan.

I would like to ask him, facetiously, if we gave his Governor a loan at 5 percent how long his program would continue. I don't think loans or privatization are the answers. I think we have got a funding program that is working. I see nothing wrong with the 55 percent. I think that at 55 percent if there has been goldplating it will soon go down to just plain chromeplating. And the 55 percent, we should be getting more work done by 45 coming from State and local interests. In my State we passed a bond issue and they are going to pay maybe 20 to 25 percent.

In any event I definitely feel that the Federal program should continue; others have said for 10 years. We feel that because that program is in place, and is working, that it has to have a little more time and some funding. Not at three times the present level.

Not at four times that. We have said 3 billion for 10 years in our statement. Others have said 10 years at the present level. I don't think they are that far apart.

Last, before I get into it, or maybe I should wait for questions. But if the questions don't deal with pretreatment I would like to deal with that.

Mr. ROE. I prefer you go ahead with the pretreatment because of the problem we are having with time.

Mr. KAISER. I would also like to comment on pretreatment. In St. Louis where we still have one large plant that only has primary treatment, we have done extensive work and spent over $1 million a year in labor alone out of our own pockets in a very enthusiastic pretreatment program.

I would like to add that it has been approved by EPA and the State pretreatment program, office, one of the few agencies that has that. The crux of it is that we feel if we can clean up our own mess and demonstrate that and take the consequences, either civil or criminally, that we will do that, why go on in our case with categorical pretreatment standards?

In St. Louis we have only four of the pollutants out of inorganic, organics, metals, whatever. We have got copper and cadmium and zinc and phenol. We have a very large program spending millions in preparation of our big plant going into operation where he will pretreat. That will get rid of the three heavy metals. Another chemical plant is working on reducing the phenols. All others are within safe drinking water standards.

That shows our dedication to toxic and hazardous. We believe in it. But we don't think we should have industry spend millions and millions of dollars taking piles of hazardous and toxic substances and having them laying all over in sludges that have to be disposed of. It is nice to say, oh, they will be disposed of. But where are you going to put those things?

Every time they have a hazardous waste site it almost ends up with the riot police having to stop it. Why should you make hazardous piles when they can be discharged safely into our source? We can treat it adequately. It is not a problem in our sludge. It is not a problem in our effluent. If it is, we do make them pretreat it.

But to require pretreatment of 2,000 industries in my town when we can regulate 30 and do an excellent job seems to me to be a little overkill. I would welcome the staff, we have invited EPA and the Senate staff, to take a look at our program because we are dedicated to toxic and hazardous. I am afraid any time our agencies talk about out own pretreatment programs you think we are trying to cop out. We are not.

If you have an agency that today is not watching how industries pretreat, they are doing a lousy job with their treatment process. Our pretreatment program is our process control. We control what they put in, so we can control what we put out. If you don't do that, you don't deserve to get any kind of option out of anything.

But just because there are three bad apples that don't require pretreatment now, what makes you think they are going to enforce the Federal categorical pretreatment standard, because you are putting a tremendous onus on them. If we are not doing the job, give us civil penalties, give us criminal penalties. But if we can do

the job, don't make us waste millions and millions of our dollars in policing a program that just puts an onus on the whole clean water industry.

Mr. ROE. I want to thank the gentleman for his very splendid statement.

The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

Mr. Kaiser, on page 2 you speak favorably about locally derived standards as opposed to national categorical standards for pretreatment. You speak of local standards which in some cases may have to be more stringent and in other cases less stringent than applicable national standards.

You then, however, argue that your proposed opt-out approach would provide the same degree of treatment as the national categorical standard. How could a locally derived standard be less stringent than applicable national standards on the one hand and then provide the same level of treatment as the national categorical standards on the other?

Mr. KAISER. I am talking about the end-of-the-pipe effluent. Let us say we have got, for lack of a better industry, a small plater. He puts 5 pounds of, say, copper or 1 pound of copper per day in 1-million or 170-million-gallon effluent. You can't even find it in our sludge. You can't find it in the river. You can't find it in the effluent.

Now, you are going to go in and make him go out of business to put in a high-priced treatment? In other words, what we are saying is start with our effluent. We take your influent at the plant, our effluent at the plant. Anything that will interfere with the treatment process, that is our baby. We have got to treat it. It costs us money not to.

We have already got surcharges and all kinds of regulations. And as I said, an approved program. You may be saying that all that domestic waste may dilute some problem waste, and therefore that dilution is a solution to pollution.

Well, I am not so sure that concentration is the solution to pollution either, because if industry takes it out he has got something there to get rid of. If it is a small industry, he might just slip it in our sewer some night and we don't like those surprises. We would just as soon he put it in there 365 days a year, and we will be sampling him about 300 of those days if we think that particular element he is putting in is a problem.

Instead of telling him that what he puts into the pipe has to meet our effluent standards, we are saying we will police his influent and police our effluent. That way some things will have a less stringent standard. Yes, sir.

Mr. STANGELAND. In both your oral and written statements you argue against amendments to 301(h) of the act and you oppose proposals in H.R. 3282 as being unfair, unreasonable, and unsupportable. Would you explain in a little more detail which provisions you are referring to and why you believe they are unfair, unreasonable, and unsupportable? In your opinion what would be the consequences for your members if the 301(h) amendment proposed in H.R. 3282 were to be signed into law?

Mr. KAISER. I would like Mr. White, who represents that section of the agency, to answer that.

Mr. WHITE. Basically, Congressman, the coastal agencies have already gone through this original evaluation of their applications. If we understand what is in H.R. 3282, it has got an additional set of criteria that have to be met. For example, in the primary treatment. Our people have concluded that that may or may not make sense. But it does not make sense to impose that as a standard that must be met today.

These agencies made their initial applications in 1978. They have spent a lot of their own ratepayers' money for consultants and have elaborate presentations. They think they have already satisfied the criteria; that is, those who have had tentative decisions favoring the issuance of a modified permit. There are a large number of those applications that have tentatively been rejected by EPA.

EPA, in our view, has been handling this rather slowly but rather thoroughly and we believe fairly and effectively. And what the chairman of the full committee's bill would do is to say wait a minute, there are some other problems we think ought to be taken care of. We have been advised by some people that maybe that is only prospective. It doesn't say so in the language of the bill. And to us it is tantamount to changing the rules of the game.

We are not satisfied that the agencies cannot meet those criteria. But we don't know, and we don't think it is necessary. There has been no demonstrated indication that EPA has improperly administered this program. To quote the old phrase: "If it ain't broke, don't fix it." If you people believe there should be an examination, we have said we hope so and we will be glad to participate because we do have a few beefs, not very many, with the manner in which the program has been administered.

But it is that sort of a pulling together of a new group of criteria that has been most troublesome to our coastal agencies.

Mr. STANGELAND. Thank you. Mr. Chairman, I have a number of other questions I would like to ask unanimous consent to submit.

Mr. ROE. Without objection so ordered.

[The questions submitted to Mr. Kaiser by Representative Stangeland and responses received follow:]

ASSOCIATION OF METROPOLITAN SEWERAGE AGENCIES—RESPONSES TO QUESTIONS SUBMITTED BY REPRESENTATIVE STANGELAND

Question 1. On page 5 of your oral statement, you indicate that "We have no objection to the funding of non-point source projects provided that funding is separate and apart from Title II construction grants funding." Assuming that Congress deems it appropriate to provide additional funding authority to address non-point source pollution control, what difference does it make whether that funding is part of or separate from construction grants program funding?

Response. AMSA believes that any change in the focus of Title II can only further jeopardize the objectives of the Clean Water Act. Title II was and is designed to address the water pollution problems associated with point sources. To add an additional cost factor to construction grants funding will invite the Appropriations Committee to force a sharing of the funds.

In 1981, Congress decided to eliminate specific funding for CSO related point source pollution problems. In addition to this limiting move, Congress further eroded the ability to address point source problems, reducing the total available authority to fund point source problem solutions overall and increasing the total cost-sharing burden municipalities must meet to respond to point source problems. Instead of establishing a new program of non-point source control within Title II, we

would urge that Congress consider re-establishing the ability to respond to the significant non-point source problems associated with urban areas. A substantial water pollution control problem could be addressed, for example, if the ability to respond to CSO problems was restored. This would go a long way, in a cost effective manner, to respond to the overall problem of water pollution.

In short, AMSA believes it would be cost-effective, and more important meet an earlier commitment, if Congress provided municipalities the funds to meet urban related non-point source problems. Alternatively, if Congress sees fit to establish a new multi-billion dollar program to respond to non-urban non-point source pollution, we would view this as an abandonment of the commitment by the Federal government to respond to point source water pollution problems.

In our statement to the Committee, AMSA identified the value of controlling non-point sources of water pollution. In fact, AMSA believes that non-point source contamination represents a serious problem to the nation's water quality. However, we believe the single largest threat to water quality, within the discussion of non-point source combination, is found in the nation's metropolitan areas in the form of urban runoff, inadequate reserve capacity and combined sewer systems. In 1981, Congress enacted changes to Title II that reduced the eligibility of certain categories to be funded with Federal grants. Instead, the Governor was provided discretionary authority, in a limited fashion, to fund some of these activities. However, the signal from the Federal government that certain activities no longer deserved separate funding, included urban non-point source issues. Subsequently, the ability to respond to water quality problems has been for all practical purposes denied.

In conjunction with the reduction of eligible construction grant activities, the Congress further reduced the ability to respond to the water pollution control problem by cutting in half the authorization levels for point source pollution control. In addition to reducing the size of the allocation of funds, municipalities suffered another setback in their efforts to respond to water pollution control when the Congress also agreed to reduce the Federal government's level of commitment and shift it to the municipalities and states. This was done by reducing from 75 percent to 55 percent the Federal contribution.

The consequences of these actions have left municipalities with a smaller pool of capital to respond to water pollution problems, and increased financial responsibility for certain activities which the Federal government has deemed unworthy of specific attention, and increased financial commitments from municipalities to shoulder the burden of meeting the requirements of the Clean Water Act. These changes come at precisely the time when municipal budgets are stretched to their fiscal limits.

Funding of non-point source control programs—a laudable goal—represents a multi-billion dollar commitment in the long-term. However, EPA estimates that current municipal needs to the end of the century are approximately $120 billion. This EPA estimate does not consider the needs of the categories that have been eliminated from the eligible categories as the 1981 amendments. Control of point source pollution is critical to preserving and enhancing the progress made to date in water quality. Any encroachment upon the specific purpose of Title II—control of point source pollution through the construction of wastewater treatment plants—would pose an unjustified intrusion upon the efforts to respond to the nation's primary water pollution control issue.

In summary, AMSA urges Congress to avoid further erosion of the ability to respond to water pollution control issues as mandated under the Clean Water Act by establishing a commitment to respond to unrelated non-point source pollution by using funds urgently needed for point source control. Furthermore, in order to address the deleterious effects or urban non-point source problems, AMSA recommends the restoration of pre-1981 eligible funding categories and the re-establishment of a true partnership in funding the construction of wastewater treatment facilities between the Federal government and municipalities.

Question 2. Have the States targeted their allotments to those areas where major pollution or water quality problems exist? What is the record? Could you supply a detailed response to this question by January 1, 1984.

Response: There is no record that the States have targeted their allotments to those areas where major water pollution or water quality problems exist. We have attached data illustrating this significant need which demonstrates the fact that areas with major water quality concerns are in desperate need of funding assistance. It is clear that water quality is a consideration taken into account by states. However, at the same time other factors, which may or may not speak directly to water pollution control, like political decisions, influence the distribution of the allocation.

From our own review of the needs of the major metropolitan wastewater treatment facilities and the timeframes in which this funding is expected, AMSA believes those areas which have the highest priority water pollution problems are a testimony to the real need for greater efficiency in distribution allocations.

For several years, AMSA has urged the states and EPA to include in their consideration on how to distribute funds a population criterion. Unfortunately, the EPA and state groups have not seen fit to apply universally such criteria. The net result has been that some states employ population criteria and others do not. The EPA in reviewing state priority lists does not consider the impact of pollution on funding needs. The result is that actual needs of serviced population centers based upon the demand for such service is not always taken into consideration. In lieu of a nationwide population criterion, as a determinant for funding, AMSA has proposed the establishment of a "separate track" funding mechanism for large metropolitan areas. A copy of this proposal is attached.

With regard to the targeting of funds to those areas with major pollution or water quality problems, AMSA believes that its projections on future funding needs are evidence of the continued need for adequate funding in large metropolitan areas. We have attached copies of the 1981 AMSA needs survey and an update of AMSA member's needs. This material demonstrates on a yearly basis when municipalities expect the need for such funds.

Question 3. In recent years there have been substantial increases in POTW costs, both for construction and O&M. To what extent is there data to support the belief that cities and counties are currently better able to shoulder the burden of municipal compliance than in previous years?

Response. The recent increase in POTW costs for construction and O&M is the direct result of increased water quality standards imposed by Federal law. It is not the result of poor management practices on the part of POTW operators. In fact, when the General Accounting Office and the Environmental Protection Agency have published findings on the number of violations occurring at POTWs, we have challenged the results of these findings. In the large majority of cases, we have found that the only violations were of a procedural nature that did not threaten water quality or human health. Nor have they any relation to O&M capability. AMSA believes that the large metropolitan POTWs compliance with the Clean Water Act's provisions is outstanding, approaching a 90% compliance rate. AMSA further believes that any increased demands to regulate water quality must be accompanied by a commensurate increase in Federal assistance. Failure to achieve such a balance will mean the ability of localities to comply with the Clean Water Act will decrease.

Many of the nation's POTWs are in a state of deterioration as the years of use take their toll. With enactment of the 1981 amendments to the Clean Water Act, municipalities are faced with the monumental task of correcting age related problems while trying to meet the requirements of the law with a decrease in the Federal funding commitment. AMSA believes that any effort to assure municipal compliance with the provisions of the Clean Water Act be inextricably linked to the provision of adequate federal funds to complete the commitment made by the Federal government over the past several decades.

The current data illustrate that costs for O&M, along with basic construction costs, are rising every year. This trend is expected to continue. With regard to O&M costs our data illustrate that the substantial majority of these costs are met through user charges. More important, large municipalities cannot aggregate sufficient capital for major construction projects and must, by necessity, rely on the assistance provided through the Federal grant system. Consequently, the ability to shoulder the burden of municipal compliance hinges upon the availability of sufficient Federal grant assistance to accomplish the fundmental goals and objectives of the Clean Water Act. A copy of our recent report, "Municipal Wastewater Treatment Plant Financing Survey Results", is attached. This should provide the Subcommittee with data on the extent of the rising costs of municipal compliance POTWs will be facing by the end of the decade.

Question 4. To what extent is the construction grants approach the best way to assure adequate funds for addressing our nation's water pollution control needs? To what extent do you feel that other approaches, such as privatization, are available and more appropriate?

Response: It is unlikely that privatization will ever be viewed as a viable alternative for metropolitan areas. AMSA holds this belief because of the overwhelming legal responsibilities that would remain with the public entity despite the privatization of the wastewater treatment facility. In short, the public sector would retain all liabilities for actions taken by another party—an unrealistic circumstance.

Since the beginning days of the Federal commitment to clean up the nation's waters, the response concept has been grounded in the belief that it is a national problem, requiring national assistance. To this end, it was agreed the Federal government would share, in a meaningful manner, the costs associated with the Clean Water Act's requirements. This is the only way to proceed because of the limited ability of the municipality to finance the costs associated with clean water standards. This limited ability is attributable to the fact that a municipality's ability to shoulder the costs depends upon its tax base. Since the tax base and user charges are employed to finance O&M costs, it is unrealistic to assume that the Federal government can renege on its commitments to assist in the construction of wastewater treatment facilities.

Since 1972, Congress has provided substantial resources to construct wastewater treatment plants through the grant process. On the whole, this funding mechanism has proven to be a significant catalyst to promote the objectives and realize the goals of the Clean Water Act.

During the past several years, suggestions have been made to the effect that alternatives to the current funding program be developed to accomplish the construction of wastewater treatment facilities. These suggestions have included privatization, leasing, and phase-out of the current construction grants program on the premise that the program's objectives have been met.

None of these suggestions, as far as AMSA is concerned, holds any merit. In the instance of privatization, a private entity cannot assure the environmental, legal and economic liabilities associated with the administration of a large metropolitan wastewater treatment facility. Even under the terms of a contract for O&M services, the city and not the contractor is ultimately liable for and subject to the penalties associated with permit violations.

Leasing, although financially attractive, no longer remains a viable option for two reasons. First, the Office of Management and Budget has issued a policy stating that no leasing arrangements may be consummated between a public and private entity unless all federal funds used to construct the facility in question have been repaid to the federal government. This requirement means that millions of dollars would have to be generated by the municipality prior to going forward on the leasing arrangement. Second, current leasing legislation pending before Congress would deny the ability to enter into a leasing arrangement unless the municipality and private entity entered into a "service contract". As part of this contract, the municipality would have to relinquish day-to-day control and operation over the facility, instead leaving the operation in the hands of the private entity. AMSA fails to see how the attendant legal and economic liabilities of such an arrangement would lead to an arrangement gaining leasing benefits through the "service contract" by a private entity and the municipality.

Finally, in response to the concept of ending the Federal program and letting the states and localities pick up the total financial responsibilities, AMSA finds this totally unacceptable in light of the current estimate of wastewater funding needs. We have attached this information to these responses for the Subcommittee's review.

AMSA has reportedly urged the EPA and the States to use population as a criterion in the development of any State priority list. Unfortunately, this has not occurred. Thus, population is not uniformly considered throughout the fifty states when priorities for funding of wastewater treatment plans are drawn-up at the State level. Because this situation persists, AMSA believes that Congress should enact legislation that would guarantee the availability of adequate funds to large metropolitan areas who service the majority of the country's sewered population.

AMSA has developed a legislative proposal that would accomplish this objective without hampering the activities of smaller metropolitan areas or the country's rural areas. This policy option, known as "separate track funding", would operate through the creation of two classes of grantees. A class of certified agencies and another class of grantees would continue to receive funding under existing program requirements and procedures.

The heart of the AMSA approach is the certification of qualified wastewater treatment agencies, a concept already developed and promoted by EPA. This would establish an agency's competence to perform on its own, subject to post audit, many of the routine requirements which now must be reviewed by state, regional and national regulators. To achieve certification, an agency would have to demonstrate its legal, administrative and technical competence in these areas to the satisfaction of state and federal officials.

If an agency chose to seek certification and won approval, it would then consolidate present and future requirements under the Clean Water Act into an integrated Facilities Implementation Plan (FIP) for all design and construction in accordance

with local determination of how compliance should be achieved. The development of this plan would be funded by EPA as a Step I facility plan. The plan itself would include a schedule of year-by-year funding needs. It would also have to conform to regional and state water quality programs adopted under the requirements of Sctions 208 and 303 of the Act.

Once EPA approved the plan, the certified agency would also be able to draw down funds from a separate national account for certified agencies. Congress would fund this account based on the year-by-year funding requirements in the approved schedules submitted to EPA by certified agencies.

If Congress did not choose to appropriate sufficient funds to meet all scheduled needs of certified agencies in a given year, available funds would be prioritized. However, agencies receiving less than their plans called for would not be subject to enforcement actions by EPA for failure to meet their schedules.

By establishing this separate administrative and funding mechanism, AMSA believes that large, sophisticated municipal agencies would be in a stronger position to move forward with pressing projects without the funding uncertainties and bureaucratic snarls that have stalled worthy projects in the past. At the same time, the AMSA approach would relieve the states of a massive oversight burden, thus allowing them to concentrate their limited financial and personnel resources on smaller communities and rural areas that are in need of state assistance. Finally, the AMSA approach would enable the Congress for the first time to see the impact of federal appropriations as well as its failure to appropriate. AMSA recommends that Congress give serious consideration to this approach as one way to ensure that the larger metropolitan areas receive the assistance they require to meet the Act's objectives and goals.

Question 5. We have heard from several groups that a pretreatment alternative would only apply to a limited universe of POTWs. In fact, these same groups question the value of setting up a whole new program that only benefits a few large POTWs. Wouldn't it be cost-effective to have only one program—the categorical approach—to assure proper and efficient control of toxics?

Response: No. The pretreatment alternative as advocated by AMSA is not a new program. In fact, quite to the contrary, the proposed alternative is an enhancement on the national categorical approach that benefits a majority of the sewered population by reducing the costs associated with pretreatment of industrial wastewater. It is clear the alternative program enhances the control of toxics by decreasing the program costs of pretreatment to industry and the community, allowing communities to address specific base problems, and increasing the Environmental Protection Agency's resources to address those areas of the country that do not have the sophistication to implement anything other than the basic categorical approach.

Those who voice concern over this alternative approach clearly do not understand the technical issues involving pretreatment of industrial wastewater. The charge that this alternative approach somehow is less efficient, jeopardizing a cost effective program, illustrates the uninformed basis upon which critics of the alternative approach depart. Further, it is not a limited universe per se. Although only 79 to 100 POTWs, out of a universe of 2,000 POTWs are projected to seek final approval for an alternative approach, this represents almost fifty percent of the sewered country or 70 million people. We advocate a solution to a problem that addresses the critical population areas of the country as they relate to water quality.

Many of the eligible municipalities have pretreatment programs already in effect, or about to be implemented, that have been approved by the U.S. EPA under the general pretreatment standards. Second, these programs in several instances specifically address the particular environmental protection needs of the area in question. As a result, implementation of the categorical approach would in some areas reinvent the wheel as it pertains to control of toxic effluent.

Finally, to those who insist that proper control of toxic effluents would be lost under the alternative approach to pretreatment, we categorically reject this position. By all accounts, the categorical approach is a technology driven response to control toxic effluent. Furthermore, the categorical approach is grounded upon a 1976 judicial consent decree that determines the categories of pollutants to be addressed. This approach fails entirely to respond to the specific threats posed to a particular community's environmental circumstance or industrial base. Under the alternative approach, the several years experience that the eligible POTWs have gained controlling and accounting for their industrial base would be incorporated into a program to control the specific threats posed to the community's waters, protecting the receiving waters with greater efficiency.

In summary, the alternative approach to the categorical program is a logical extension from the general standards to control conventional pollutants. Its attractive-

ness lies in the fact that only those municipalities with an ability to control toxic substances would be approved, thereby allowing the EPA to concentrate limited resources on those POTWs that are in need of assistance to comply with the categorical program. We are still talking about a national program that has sufficient flexibility to acknowledge POTW expertise, where appropriate, that is cost-effective, and that is environmentally sound.

Question 6. You mention on page 16 of your written testimony that you take exception to the proposal in H.R. 3282 that primary treatment must include chemical treatment to control pathogens. You also suggest that chlorination should only be required where it is needed to protect human health. Approximately how many coastal communities, in your opinion, that are not currently chlorinating, would be required to do so under the terms of H.R. 3282? Of these, how many do you feel appropriately should not be required to chlorinate?

Response: AMSA does not keep records on the chlorination practices of all coastal POTWs. However many of our members, including the City of Los Angeles and the City and County of Honolulu, fully comply with state and Federally-approved bacteriological standards for effluent discharge without chlorination or other chemical treatment. These facilities, and others under construction, provide for the protection of human health by discharging primary treatment effluent at considerable depth and distance from shore, in some cases with diffusers at the outlet, to provide rapid dilution of pathogens to non hazardous levels. For some discharges such as Orange County, California, chlorination is performed on a seasonal basis due to changes in hydrographic conditions or recreational usage of coastal areas. All POTWs seeking a 301h waiver, including those not now chlorinating, would be required to chlorinate or use some other more hazardous and expensive, and less reliable method of disinfection under the proposed amendment in HR 3283, despite the fact that existing practice provides a high level of protection of human health without, in many cases, the additional use of chlorine as a disinfectant.

The amendment proposed in HR 3282 which would require all 301h dischargers to provide "chemical treatment to control pathogens" is clearly intended to ensure the protection of human health. However, this requirement would mandate treatment in some cases where none is necessary and in addition such treatment would cause the unnecessary discharge of significant qualities of synthetic toxic chlorinated organic compounds to the marine environment. Where existing state and Federally-approved bacteriological standards are met by an outfall design which ensures adequate dilutions of the primary treatment effluent and effective isolation from the human population by locating the discharges in areas distant from shellfishing and recreational areas, additional treatment to control pathogens would provide no benefit, since no gain in human health protection would ensue.

The addition of chlorine to wastes as a disinfectant results in the formation of trihalo-methanes, and chloramines many of which are known to be toxic and mutagenic to marine life. A single facility, such as the Hyperion Treatment Plant in Los Angeles would be required by HR 3282 to use over 200 tons of chlorine per day to destroy pathogens in the effluent, even though the ocean outfall has been shown to ensure the natural inactivation of pathogenic organisms by normal biological processes in the sea, such that no hazard to human health is caused by the discharge.

Where discharges of effluents take place only short distances from beaches or shellfisheries chemical additions to control pathogens are often appropriate in order to protect human health. Indeed many AMSA members with such outfalls, even some of those providing secondary treatment, (including, for example, municipalities discharging to San Francisco Bay) routinely chlorinate their effluent, either throughout the year or seasonally during periods of high beach use, in order to meet water quality standards. However, where the existing discharge is into well flushed deep ocean waters off an open coastline, this type of additional treatment is seldom required. Such well flushed deep ocean waters are, for example, the discharge locations for many west coast, Hawaiian and Alaskan POTWs. The only prudent approach to chlorination would be to allow the decision to chlorinate or not to be made on a case by case basis. The existing 301h regulations impose stringent requirements on the applicant to demonstrate compliance with all bacteriological water quality standards, both before the application is approved and then through monitoring when the modified discharge is in place. These requirements will need to be met through chlorination in some cases. However, imposition of a blanket chlorination requirement would inpose unnecessary environment risks, and economic burdens, on many communities.

Mr. ROE. The gentleman from Pennsylvania.

Mr. CLINGER. Thank you, Mr. Chairman.

Mr. Kaiser, both in your oral statement and in your written testimony you support establishment of a separate funding track for large metropolitan agencies. Would you describe why you believe this approach is appropriate, and how you envision the separate track concept could be structured?

Mr. KAISER. Congress has set up a formula based on need and population by which States are allocated their money. Historically, once the State gets it, it does not distribute it that way. In my State, I have one more large plant needing $300 to $400 million. And the State doesn't think that there is any water quality problem, and they are going to put us at the bottom of the priority list. They are doing the same thing with Kansas City on about a $100 million project.

Yet, much of the State of Missouri's money is derived from our needs and our population. Originally we were hoping for some type of passthrough. If the State was allocated its money that way and the major city that was the cause for the State getting that money had a mandated program, such as secondary treatment at its largest treatment plant, we think it ought to get some of the Federal dollars. I think by your formula you must think so, too. Another example is in Alabama, where the No. 1 and No. 2 projects in the State happened to be in large cities. The State decided to leapfrog those because they would take too much of its money. They have chosen to go ahead with some less-water-quality-effective program.

As an alternative, we looked at the separate-track funding because, while the large agencies represent more than 50 percent of the sewered population in this country we are not getting that percent of revenue.

If we want to clean up the mess, and if we were under mandate to build secondary treatment, and most of our agencies, as I said earlier, are in this same boat, then some method of assuring funding is necessary. I am not sure that it is the only answer. But it is better than not getting anything, and EPA hitting you on the head and saying: "Hey, you have got to go spend $400 million whether you get Federal money or not." That is just to me not the intent of the act.

So, one, I think there is a need. While ours may not be the best solution, we hope it gets some support and serves to encourage the States to start giving money to the large cities. Contrary to what the States think, we are not wealthy and we don't have bulging coffers. We are broke, as you well know.

Mr. ROE. Are there further questions of the distinguished gentleman? We want to thank you very much for your testimony. We appreciate it. It will be given the greatest of attention.

Mr. KAISER. We thank you very much for your attention. Thank you very much.

Mr. ROE. Our next witness for today is the Honorable William D. Ruckelshaus, Administrator of the U.S. Environmental Protection Agency.

Is the Administrator here? Good afternoon, Mr. Administrator. We want to welcome you to our committee. If you would identify for the record your colleague.

Mr. Ruckelshaus, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY OF WILLIAM D. RUCKELSHAUS, ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY BEFORE THE SUBCOMMITTEE ON WATER RESOURCES, COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, U.S. HOUSE OF REPRESENTATIVES NOVEMBER 15, 1983

Good morning, Mr. Chairman and members of the subcommittee. I am pleased to be here to discuss reauthorization of the Clean Water Act. With me today are Jack Rovan, Assistant Administrator for Water, and Rebecca Hanmer, Deputy Assistant Administrator for Water.

This subcommittee held extensive hearings on the Clean Water Act last year. The breadth and detail of those hearings was impressive. Your 2,300 page report reflects the diligent efforts of both this subcommittee and its staff in considering mid-course modifications to a fundamentally sound piece of legislation.

I understand that the purpose of this series of hearings is to review the concerns and issues that have been raised in connection with reauthorization of the Clean Water Act. I think the most useful thing that I, as Administrator of the Environmental Protection Agency, can do, Mr. Chairman, is to define what I see as the significant problem areas, comment on some of the major proposals before this committee, and offer my own views as to what direction any mid-course corrections should take. I am prepared to provide whatever technical assistance and information you require in addressing the difficult issues facing this subcommittee.

The key issues have been clearly defined in the numerous bills, including H.R. 3182, presently before this subcommittee and the Administration's proposals, a copy of which I have attached to my testimony. I am happy to say that in my own mind, there are some issues on which there is no question.

The Clean Water Act is working. The control strategy formulated by Congress in 1972 and refined in 1977 has proven effective and successful. I have had first hand experience with the background and origins of the legislation and there simply is no doubt that we have seen impressive progress over the past decade. The act's strategic approach of requiring implementation of nationwide technology-based effluent limitations followed by any additional, needed controls based onsite-specific water quality concerns should be continued.

On other issues, our approach to key questions has been significantly strengthened by the useful comments we have received from Congress and the public on our original proposals, and by the other proposals which have been introduced in both Houses of Congress. Over the past several months our analysis of the major issues has continued, and I think we now have a better sense of what is reasonable, workable, and will yield results. Our analysis has also identified four additional issues which this committee may care to review. The most important of these, fundamentally different factors determinations—so called FDF's, are addressed in this statement. Brief explanations and proposed language on all four of these issues have been added to the Administration's proposals for the committee's consideration.

I hope that in discussing the major questions before us today, we can build on the reauthorization process begun last year and quickly complete the development of effective solutions to those problems.

1. CONSTRUCTION GRANTS FUNDING

One issue raised in H.R. 3282 that was not addressed last year is the proposal for increased Construction Grants funding. Under your leadership, Mr. Chairman, redirection and reauthorization of the Construction Grants program was considered in great detail 2 years ago and is reflected in the 1981 amendments to the Clean Water Act. The Administration continues to support the 1981 amendments and believes that the authorization levels set out in them are appropriate.

In 1985 Congress will have to determine whether the program should be continued or modified. After more than 25 years, I believe there should be a fundamental examination of whether the program should be targeted to small municipalities, modified to a loan program or turned over to the States under the Administration's New Federalism concept. Critical to all of these considerations is the need to determine the most appropriate federal role in obtaining expeditious compliance by municipal pollution control facilities with the enforceable requirements of the act.

EPA will be conducting a detailed study of issues related to the reauthorization of the construction grants program. We would be pleased to work with you as we complete the study.

Beyond the construction grants program, the key issues I would like to touch on today include industrial compliance deadlines, pretreatment, fundamentally differ-

ent factors determinations, water quality standards, post-BAT controls, nonpoint source controls and enforcement.

2. INDUSTRIAL COMPLIANCE DEADLINES

Of all these issues, clearly the most urgent in this reauthorization process is the need to extend industrial compliance deadlines. Industrial facilities have less than a year to comply with the current July 1, 1984, deadline for achievement of Best Available Technology [BAT] and Best Conventional Technology [BCT] effluent limitations. In many cases they have not been issued permits upon which even to begin the compliance process due to delays in Agency promulgation of national effluent guidelines. EPA is now in the final stages of completing those guidelines. But the fact remains that the necessary period for permit issuance and compliance that Congress envisioned in 1977 has been drastically reduced.

A number of different proposals have been made to extend industrial deadlines. These proposals differ in terms of the effluent standards to which they would apply and how much additional time they would provide. What each of these proposals clearly recognizes is the need to extend industrial compliance deadlines.

In resolving the question of extensions, Mr. Chairman, I believe there are three objectives that any solution must address. First, any extension must recognize the time necessary to promulgate effluent guidelines, issue permits, and for dischargers to come into compliance. Second, the extension must contain a final compliance date which applies to all BAT/BCT related permits. Third, the language should provide clearly that if compliance can be achieved before the final date, then it must be.

One thing I am very concerned about after reviewing the various proposals is that any final compliance deadline must be realistic. A number of the legislative proposals do not provide adequate time for the regulatory agencies to translate the effluent guidelines into individual permits. The July 1, 1988, deadline contained in the administration proposal reflects, I believe, a realistic assessment of the time needed to complete issuance of the effluent guidelines, write implementing permits, and allow dischargers to come into compliance. Let me emphasize, Mr. Chairman, that the administration's proposal would not allow any additional time for dischargers which could achieve compliance before July 1, 1988. Where compliance could be achieved before July 1, 1988, the implementing permits would contain the earlier deadline.

Finally, the administration proposal does continue the incentive for innovative solutions now embodied in section 301(k) of the act.

There is no question that some form of deadline extension is needed, Mr. Chairman, and I would like to offer whatever assistance the committee may require in determining the most appropriate way to address that need.

3. PRETREATMENT

The toughest issue with which I have dealt thus far in connection with Clean Water Act reauthorization is pretreatment. This is a subject to which EPA has devoted a substantial amount of time, resources and effort. The fundamental objectives of this program under the act are to protect water quality, protect municipal sludge from contamination by industrial toxic wastes, and protect the operation of the POTW itself.

The need to achieve these goals is widely recognized and unquestioned. However, the best means of achieving them has been the subject of extensive debate since 1972. One of my principal concerns is that technology-based categorical pretreatment standards inherently will result in cases of over or under treatment. There may be cases in which full implementation of categorical pretreatment standards may not be necessary or may not be sufficient to achieve the goals of the program. The difficult question we all have been grappling with is how to address instances of potentially unnecessary treatment without opening a Pandora's box of technical difficulties, serious resource demands, administrative problems, and scientific uncertainties, and without delaying the program in those situations that need these controls.

With the gathering momentum of local pretreatment programs, and with the Agency's promulgation of categorical standards well underway, I am reluctant to recommend anything that will entail significant delay or loss of momentum. Of 1,700 POTW's required to develop local pretreatment programs, approximately 60 percent have now submitted some portion of the necessary elements for program approval. Of that group, roughly 370 have already received approval and are now ready to enforce categorical standards. Within this fiscal year, EPA and approved

States are expected to approve an additional 800 local pretreatment programs. In addition, the compliance deadline for one of the major groups affected by categorical standards, the electroplaters, is now less than a year away.

At the same time, I also feel strongly that, where possible, we must avoid the application of categorical pretreatment standards where they are not needed. For this reason I have pursued the concept of a pretreatment waiver. This is the reauthorization issue on which I have spent the most time. I have talked with staff at all levels in the Agency and met with outside groups in an effort to develop a workable approach to this problem.

I must confess, Mr. Chairman, this has been a frustrating effort for me. As attractive as the concept of relying on end-of-pipe effluent limitations to ensure protection of water quality seems, I have come to the difficult conclusion that it just is not feasible to administer such a program without a serious delay of two to three years in the program. The prerequisites of any successful national effort in this area are missing. Most States are only in the early stages of establishing specific ambient water quality criteria and permit effluent limitations for toxic substances. Furthermore, the national sludge disposal and use standards to be established by EPA are still several years away.

We could, of course, wait for the development of these effluent limitations and sludge standards, but I think the pretreatment program has now reached a stage where that would seriously jeopardize the progress that has been made to date. I think the Agency, indirect dischargers, and affected POTWs need to get on with implementing the program in a reasonable, rapid, and effective fashion.

Following my June 14 testimony before the Senate on this same subject, I directed my staff to go back and take a fresh look at the concerns of POTWs and municipalities and the problems associated with implementation of the existing program. After meeting with a number of groups to discuss operational concerns and explore alternatives, I have decided to establish a pretreatment implementation review task force. Its purpose will be to seek solutions to common implementation problems encountered by control and approval authorities. This will include developing equivalent industrial monitoring and municipal enforcement programs, and guidance on implementing production-based categorical standards and, where appropriate, to identify regulatory problems. To ensure a broad base of information, the task force will be made up of representatives of States, municipalities, industry, the environmental community, and EPA. It will include representatives of both large and small municipalities, as well as municipalities with both new and established programs.

It is my hope that as the recommendations of this task force are factored into the implementation process, some of the most significant technical concerns and objections we have heard will be resolved.

Earlier I mentioned the lack of sludge disposal and use criteria. I am pleased to report that we have now established a program for moving aggressively forward in filling the regulatory gaps in that area. The Agency's Sludge Task Force recently presented their findings to a senior-level Policy Committee. These included recommendations on how EPA should structure an integrated sluge regulatory program based upon the joint authority of section 405 of the Act and the appropriate provisions of EPA's other laws. The Committee has endorsed and forwarded those recommendations to me and has directed the Task Force to prepare a detailed workplan for initiating the effort. Although many details remain to be worked out, the broad outline of this program involves a comprehensive effort to develop standards and to formulate a State implementation process. These regulations will be supplemented by a general policy statement and general guidance which we will issue in fiscal year 1984. The regulation development effort will clearly take longer—probably in excess of 2 years—but resources within several key offices have already been redirected to support this undertaking. I am confident that this unified effort will produce a comprehensive sludge management program which will serve to ensure safer, more cost-effective, and more beneficial sludge management, and which can be integrated into the existing pretreatment program.

4. FUNDAMENTALLY DIFFERENT FACTORS DETERMINATIONS

In discussing pretreatment, I have emphasized the need to get on with implementation of the program. Of particular concern in this regard is a recent decision of the Third Circuit Court of Appeals as it relates to applying national effluent guidelines for indirect and, by implication, direct dischargers. Essentially, the Court held that the fundamentally different factors (FDF) determination procedure that EPA has had available for use in the application of national effluent guidelines for toxic pollutants is not authorized by the Act.

I strongly believe, Mr. Chairman, that the FDF determination procedure is an essential adjunct to the national rulemaking process. EPA has traditionally used this procedure as a "safety valve" in developing, implementing and defending effluent guidelines for existing sources. In going through the extraordinarily complex process of a national rulemaking, the FDF determination procedure permitted EPA to focus its data gathering and analysis on the more typical facilities and defer to subsequent proceedings those plants with unique features. This has resulted in both major cost savings and reductions in the time necessary for guideline development. By providing an administrative remedy for facilities that may not be able to meet national standards due to unique factors not considered in rulemaking, the FDF determination procedure reduces the legal vulnerability of the national standards.

There may be some concern that the administrative remedy provided by FDF determinations is somehow a regulatory "loophole". This simply is not the case. It should be noted that the FDF determination procedure may be used to develop requirements more stringent than those contained in the national effluent guidelines. Let me review very briefly how the FDF determination procedure works. A facility must first submit a petition demonstrating that there is some factor in its situation that is fundamentally different from those considered in establishing the national regulation. Only information not previously considered can be the basis for an FDF determination petition. In other words, this procedure cannot be used as a backdoor means of challenging and rearguing the regulation itself. Second, to establish a "fundamental difference", a facility must show that compliance with the national limits would result in either a removal cost wholly out of proportion to the removal cost considered by the Agency during the development of the national regulation or a fundamentally more adverse non-water quality impact. This is a very tough test to meet. Third, any alternative technology based limits may reflect only the degree of modification actually required by the fundamental difference. Fourth, in order to ensure that all points of view are considered, the public is informed of applications for FDF determinations and given the opportunity to participate in the proceeding.

The FDF determination procedure is not a waiver procedure, and in particular, is not an economic waiver procedure. Rather it is a procedure through which a facility receives an individualized determination of its technology-based effluent requirements. As such, it is analogous to the Agency's use of best professional judgement permit determinations to establish effluent limitations for industrial facilities whose national effluent guidelines have not been issued.

My point is very simple, Mr. Chairman. There are two approaches for responding to a facility with valid grounds for arguing that it is fundamentally different from other facilities in its category. One possibility is to develop a separate subcategory within the regulation, undertake a separate data collection and analysis effort, and then repropose and issue the final rule. The other alternative is to leave the national rule in place and use the FDF determination procedure to establish alternative technology-based limitations for the facility that accurately reflect its situation.

Let me emphasize that both of these approaches reflect the exercise of the Agency's regulatory expertise. Both of these approaches will involve a review of the same set of facts. Both involve the public. And both of these processes will end up with the same decision. So what is the difference?

Our major concern is that the subcategorization substantial additional time in developing what are already extraordinarily complex and detailed national regulations. In essence, this approach would require us to handle through modifications to nationally applicable regulations the special situations of single facilities. This simply is not efficient. By contrast, the FDF determination procedure allows both implementation of the national rule and consideration of individual petitions claiming unique factors.

For these reasons, I urge careful consideration of the attached draft language to clarify and confirm EPA's authority in this area.

5. WATER QUALITY STANDARDS POST-BAT

With the completion of the remaining effluent guidelines over the next year and the implementation of pretreatment and direct discharge standards, a reasonable question remains: What if these technology-based limitations are not stringent enough to protect designated water uses? In accordance with the Act's fundamental pollution control approach, reliance on strengthened and more sophisticated water quality standards will form the basis of EPA's post-BAT strategy.

Two issues come up in assessing any post-BAT strategy. The first is the adequacy of the water quality standards upon which control strategies will be based. Second is the strategy itself. Taking water quality standards first, I have read your letter of

March 14, Mr. Chairman, and understand that one of the main reasons for the current widespread concern over these standards has been the Agency's October 1982 proposed rulemaking to revise the existing water quality standards regulation. As I understand it, one of the principal purposes of this proposal was to make the standards setting process a better and more effective decisionmaking tool. Regardless of the Agency's intent, the proposed revisions apparently were viewed by the public as a retreat from the goals and objective of the Act in the areas of anti-degradation, downgrading and cost-benefit analysis.

In response to numerous comments we have received on this issue, and the major concern indicated by both the House and Senate, we have recently made further revisions to and promulgated the Agency's water quality standards regulation. Copies of our redrafted preamble and regulatory provisions have been provided to this Subcommittee for its information and use. I believe these additional revisions meet the concerns and objections that have been raised and both strengthen and clarify our national water quality standards program. Since our revised regulations will yield the same environmental results, I strongly urge that these provisions be deleted. Also, I would note that the Senate Committee on Environment and Public Works has agreed to delete the anti-degradation and downgrading provisions of their bill.

Section 6 of H.R. 3282 would address the issues of downgrading and anti-degradation by codifying a revised version of the existing water quality standards regulation. Both of these provisions would hamper the ability of EPA and the States to deal with site-specific problems.

H.R. 3282 would also add a provision requiring the use of numerical water quality criteria. This provision, requiring States to adopt numerical criteria for toxic pollutants, would essentially preclude States from using alternative means, such as biological criteria, of establishing water quality benchmarks. Under EPA's revised regulation, States must identify specific water bodies where toxic pollutants are causing problems, and must adopt criteria sufficient to protect the designated use. These criteria may be numerical or narrative and may be used singly or in combination, as needed. For example, where an effluent contains a few, readily identifiable toxic chemicals, then pollutant-specific criteria and effluent limitations will be used. In situations involving discharges of complex effluents, it may neither be feasible nor environmentally protective to use a numerical, pollutant-by-pollutant approach. In those cases, I believe it is more effective to use biological testing as the basis for setting aquatic toxicity limits. Because our revised regulations provide a more effective, flexible approach which we have adequate authority to implement, I recommend that this provision be deleted, or at least modified to provide the flexibility to use either approach.

With respect to a post-BAT control strategy, H.R. 3282 would require EPA to inventory nonattainment waters existing after the installation of technology-based controls, and then develop and implement in cooperation with the States an individual point source control strategy for each nonattainment waterbody.

EPA has been studying the need for toxic pollutant controls beyond BAT for some time. The Agency has also been very hard at work developing the methods, especially biological assessments, necessary to determine where toxic pollutants are causing problems and to determine necessary levels of control. While much work remains to be done, I am confident that the Agency is in a position to make these methods generally available during this fiscal year.

Where EPA or a State determines that BAT is not sufficient to protect the designated uses of the receiving waters, it issues permits which include more stringent effluent limitations. Where the data are not available or not conclusive to support such a determination, the source's permit will be written in incorporate BAT effluent limitations but will contain monitoring requirements that become effective once the BAT effluent limits are achieved. If this monitoring shows that the BAT effluent limitations do not protect designated water body uses, the permit will be reopened and additional requirements incorporated. All of this is currently authorized by the existing statute.

So while I support establishing controls beyond BAT when necessary, I feel that the Agency already has the authority to accomplish this. Therefore I believe statutory changes are neither necessary nor desirable. I would be happy to work with you in further explaining our concerns and reservations on this issue.

6. NONPOINT SOURCE POLLUTION CONTROL

Next, I would like to address the control of nonpoint sources of pollution. H.R. 4037 proposes a national program to assist State implementation of nonpoint source

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pollution controls. With the establishment of technology-based standards well underway for point sources, it is now time to turn our attention to the control of pollution from nonpoint sources. I believe there is no question that pollution from nonpoint sources is having significant adverse impacts on water quality in certain areas across the United States. The 1982 State water quality assessments report prepared under section 305(b) of the Act describes the nature of this problem: (1) in one-fifth of the States, nonpoint sources are now the most important cause of water degradation in those waters not meeting designated uses; (2) agricultural nonpoint sources are the major nutrient sources in lakes with eutrophication problems; and (3) of the 20 States which specifically quantified their progress towards the 1983 Clean Water Act goals, 15 (75 percent) list nonpoint sources as significant sources in their remaining problem waters.

Attainment and maintenance of water quality standards is our fundamental objective under the Clean Water Act. We all recognize that achieving this depends on controlling both point and nonpoint sources. My concern is that while tremendous public and private investments have been made to control point sources, we have thus far been remiss in addressing the continuing problem of nonpoint source pollution. This condition is of major importance both because it affects the total amount of pollution control achieved and because it dilutes and dissipates the environmental return on the time, resources, and effort we have already expended.

Just as there is general agreement about the significance of nonpoint source pollution control problems, there is basic consensus on what needs to be done. Each State must identify specific problem waterbodies and contributing nonpoint sources, develop tailored controls, and proceed with implementation. To date, most States have generally identified their nonpoint source problem waters, the nonpoint sources affecting these waters, and proposed control approaches. Much of this was accomplished as part of the broader 208 planning effort. In some cases, there may be a need to go beyond this initial planning and identify specific problem activities and appropriate site-specific controls. Once the site-specific control approaches are identified, the crucial next step will be to ensure that the parties responsible put those controls into practice.

My discussion on nonpoint sources indicates two basic areas of agreement on implementing the necessary controls. One area of agreement is that State and local governments have the major planning, program development, and implementation responsibilities. They unquestionably have a broader range of authorities and more detailed knowledge of site-specific conditions than we have at the Federal level. Therefore, they are able to tailor nonpoint source control programs to meet their specific needs.

The other area of agreement is that, while States must have the primary responsibility for nonpoint source program development and implementation, the Federal Government will reemphasize its efforts to address this problem. The Agency also has the responsibility to provide technical expertise and disseminate knowledge gained at the Federal, State, and local level to other communities with similar problems.

I believe that a number of steps can be taken now to ensure that the Federal Government effectively meets its responsibilities in this area. First, under existing Clean Water Act authorities, EPA will provide clear guidance under which States will update or develop nonpoint source programs for specific waterbodies where nonpoint sources substantially impact desired water uses. States can use or refine existing water quality management plans to accomplish this.

Second, Secretary of Agriculture Block and I have discussed how we can best coordinate our efforts to address priority nonpoint source control needs in each State. We have agreed that after EPA issues its nonpoint source guidance, USDA will support EPA's priority on this subject as part of their ongoing National Conservation program. USDA's technical assistance delivery systems can help many farmers in this country to understand the impact their activities can have on water quality, and how they can modify their own farming practices to protect water quality.

USDA has a long and successful history of working at the grass roots level to develop conservation practices, to educate the farmers on these practices and to provide technical assistance in applying them. At the county level, the Agricultural Stabilization and Conservation Service, the Soil Conservation Service, and the Extension Service all work together to provide support and assistance to farmers needing or requesting help.

EPA will continue to encourage States to use funds available under Section 205(j) and 106 of the Act for nonpoint source needs and provide Agency technical and program support. In addition, EPA will use $2 million in appropriated fiscal year 1984 extramural funds for a nonpoint source report to Congress, development and dis-

semination of information on control strategies, and technical transfer on NPS methodologies. EPA will maintain Headquarters and EPA Regional Office personnel to support State and local government nonpoint source control efforts in fiscal year 1984. Finally, the Agency, together with other federal agencies, will be working to examine their fiscal year 1985 needs.

I believe H.R. 4037 and EPA's strategy for nonpoint source pollution control are basically consistent in terms of the need to identify specific problem areas and control needs. However, I am concerned that a Federal cost-sharing program would create disincentives to voluntary action by anyone not receiving Federal funds and therefore would slow the implementation of nonpoint source controls. I believe the federal role should not infringe on sensitive State and local decisions concerning land use. I was pleased to note that the recent Senate committee modifications to their nonpoint source control provision include elimination of the disincentives to voluntary action.

7. ENFORCEMENT

The Clean Water Act will not work unless EPA and State enforcement efforts are vigorous and effective. Toward that end, there are two provisions of the administration's proposal that I would like to emphasize this morning: administrative civil penalties and criminal sanctions.

a. Civil enforcement

Presently the Clean Water Act provides two civil enforcement options. When faced with a violation of the act, the Administrator may issue an order requiring compliance by the violator or the Administrator may bring a civil action in the appropriate United States District Court for penalties and injunctive relief.

Section 7 of the Administration's proposed legislation allows the Administrator a third option, to administratively assess civil penalties of up to $10,000 per day (not to exceed $75,000 total) for clear and well documented violations of the Act. Under this approach, a violator would be given notice and an opportunity for a hearing, and if dissatisfied with the final assessment, he would be able to seek review in a United States District Court. The court review would be appellate in nature and not a de novo trial proceeding.

The addition of administratively assessed civil penalties as an enforcement tool would give the Agency more flexibility to deal with noncompliance situations. A non-penalty administrative order may be ineffective in resolving the problems, and yet the option of taking judicial action may be unreasonably costly, burdensome, and time consuming for all the parties involved, given the nature of the violation.

The Agency's experience to date with assessing similar civil penalties existing under other environmental statutes (CAA, FIFRA, TSCA, RCRA) indicates that this option will give EPA more enforcement flexibility, lead to speedier compliance, and assure due process without the expense and delay of a judicial enforcement action.

Section 8 of H.R. 3282 addresses the area of civil enforcement as well. It proposes to increase the daily maximum civil penalty provided for under section 309(d) of the Clean Water Act from $10,000 per day to $20,000 per day. Although this is slightly less than the equivalent provisions of the Clean Air Act and the Resource Conservation and Recovery Act, it strengthens existing enforcement mechanisms, and, therefore, I support it. I would also support increasing the maximum civil penalty to $25,000 per day so as to be fully consistent with the provisions of these other statutes.

b. Criminal enforcement

Knowing violations of the Clean Water Act have caused serious environmental harm and millions of dollars of damage to private and public property. In some cases, they have raised the clear potential for loss of life and serious personal injury. A stronger criminal sanction is needed under the Act to deter these violations.

The proposal we are recommending elevates penalties for knowing violations of the Act to the felony level and adds criminal sanctions to the Act for persons who knowingly introduce into a sewer system a pollutant or hazardous substance which causes or can reasonably be anticipated to cause personal injury or property damage. For those defendants who have complied with all applicable Federal, State and local requirements, an affirmative defense is provided.

The addition of these criminal penalties to the Act will put violations on the same level as violations under RCRA. Currently, a knowing discharge onto the ground of harzardous wastes could subject the discharger to felony sanctions under RCRA.

However, the same discharge into a sewer system would only subject the discharger to the misdemeanor provisions of the Clean Water Act. The result is an unintentional incentive to dump hazardous substances into sewer systems. The addition of these criminal sanctions will aid in protecting sewer system and POTWs in which substantial Federal monies are invested.

Strong public support exists for aggressive enforcement action in cases of deliberate environmental misconduct. The addition of criminal sanctions to the Act for knowing, intentional violations of the Act will reflect this public concern and should dispel any perceptions that the intentional violation of the Act is not a serious offense.

8. CONCLUSION

In conclusion, Mr. Chairman, I have focused my remarks on what I believe are the key reauthorization issues. I have not discussed a number of other issues raised in both the Administration's and other proposals before this Subcommittee. Clearly, these need to be addressed in this reauthorization process. I hope that today we have begun what will be a continuing dialogue to address these remaining issues as well as the ones I have highlighted this morning.

This concludes may prepared statement. I would be happy to answer any questions you may have.

SUMMARY OF ADMINISTRATION PROPOSALS FOR CLEAN WATER ACT REAUTHORIZATION

1. *Authorization* [sections 104(u), 106(a) and 517] 5 year reauthorization of funding to 1988.

2. *BAT/BAT compliance deadline extension.*—[sections 301 (b)(2) and (k)] Extend Section BAT/BCT compliance deadlines from July 1, 1984 to not later than July 1, 1988.

3. *Municipal deadline extension.*—[section 301(i)] Allow all POTWs not in compliance with secondary treatment or water quality standards to apply for an extension to 1988.

4. *Environmental modification fees.*—[section 301(n)—new subsection] Allow Administrator authority to charge fees for waiver or exemption processing.

5. *New source performance standards.*—[section 306(a)] Make new source performance standards applicable only after *final* regulations are issued (instead of proposed).

6. *Pretreatment.*—[section 307(e)—new subsection] Allow local POTW's to apply on behalf of indirect dischargers for modification of categorical pretreatment standards.

7. *Administrative civil penalties.*—[section 307(g)—new subsection] Allow Administrator authority to *administratively* assess civil penalties for clear, well-documented violations of the Act—analogous to parking ticket concept. Appeal to district court provided.

8. *Criminal sanctions.*—[section 309(c)] Modify enforcement provisions of section 309—(penalties of up to $50,000/day and/or 2 years imprisonment—basically to parallel RCRA.)

9. *Thermal dischargers.*—[section 316(a), (b), and (c)] Base modification of technology-based thermal standards on either 1) protection of balanced population of aquatic life ("indigenous" deleted) or 2) attainment of State thermal water quality criteria. Allow alternative measures to mitigate the impacts of cooling water intake structures.

10. *NPDES permit term extension.*—[section 402(b)] Extend NPDES permit life from 5 to 10 years for permits with no modifications.

11. *Partial NPDES program approval.*—[section 402(b) and (c)] Allow State administration of selected parts of permit program.

12. *Munitions.*—[section 502(6)] Exclude conventional munitions from Act's definition of "pollutant."

13. *Criminal investigations.*—[section 501(g)—new subsection] Provide confirmation of EPA's criminal investigative authority.

14. *Fundamentally different factor determination.*—[section 301(l)] Confirm the Administrator's authority to determine alternative effluent limitations for an existing direct or indirect discharger which is fundamentally different from those dischargers considered in developing national effluent guidelines.

15. *Conflict of interest.*—[section 304(i)] Modify the conflict of interest requirements applicable to state permitting bodies to generally parallel those of the Clean Air Act.

16. *Report to Congress.*—[section 6 of FWPCA of 1972] Repeal requirement for the Secretary of Commerce to submit to Congress an annual report on the international trade effects of water pollution control expenditures.

17. *Commonwealth of the Northern Mariana Islands.*—[section 502(3)] Modify the definition of "State" to include the Commonwealth of the Northern Mariana Islands.

SECTION-BY-SECTION ANALYSIS

AUTHORIZATION

Section 1 of the bill amends sections 104(u), 106(a) and 517 to extend funding authority for 5 years, through fiscal year 1988. Funding for fiscal year 1984 is based on the President's budget, and for subsequent years such sums as may be necessary are authorized. A technical amendment has also been made to section 517 to authorize funds for section 304 information and guidelines.

These funds will support the development of information on pollution prevention, reduction and elimination through a program of research, investigation and demonstration (section 104(u)); grants for State and interstate agency pollution control programs (section 106(a)); and the general implementation of the Act (section 517).

BAT/BCT COMPLIANCE DEADLINE EXTENSION

Section 2 of the bill amends section 301 of the Act to extend the current deadline for industrial compliance with BAT and BCT effluent guidelines from July 1, 1984, to July 1, 1988; and for industrial BAT/BCT permit limitations based on best professional judgment (BPJ), to provide three years from date of issuance in which to achieve compliance. This section also continues the present 3 year deadline extension for dischargers using innovative technologies to achieve compliance with BAT.

Delays experienced by the Agency in promulgating BAT/BCT effluent guidelines leave very little lead time for industry to meet present compliance deadlines. The purpose of this revision, therefore, is to provide industry with sufficient time to construct the necessary treatment facilities to come into compliance with BCT and BAT effluent guidelines.

MUNICIPAL DEADLINE EXTENSION

Section 3 amends section 301 of the Act to allow all publicly owned treatment works (POTW's) not in compliance with applicable secondary treatment or water quality based effluent limitations to apply for an extension to 1988.

In 1977, extensions of compliance deadlines under the Act were authorized to no later than 1983. In the recent 1981 municipal construction grant amendments (P.L. 97-117), the extension date was changed to 1988, but only POTW's that already had extensions were eligible. The purpose of this revision is to allow all POTW's not in compliance the opportunity to apply for that extension. To receive an extension a POTW must meet the same tests and conditions set forth under the 1977 Act.

ENVIRONMENTAL MODIFICATION FEES

Section 4 adds a new subsection to section 301 of the Act. This subsection provides the Administrator with the authority to charge fees for processing and reviewing applications to modify or exempt certain effluent limitations, standards, and requirements under sections 301 (c), (g), (h), 307(b), and 316(a) of the Act. Under this revision, fees collected by EPA would be used solely for the purposes of processing and reviewing such applications.

NEW SOURCE PERFORMANCE STANDARDS

Section 5 amends section 306 to redefine "new source" to make new source performance standards (NSPS) applicable after issuance of final rather than proposed regulations.

Presently, facilities may be considered to be new sources if construction is begun after issuance of proposed new source performance standards. The difficulty with this definition is that in practice, it may take over a year between the issuance of a proposed regulation and the promulgation of final binding standards. The purpose of this revision is to ensure that final NSPS standards will be available and applicable as new construction is begun.

PRETREATMENT

Section 6 amends section 307 to allow modification of certain categorical pretreatment requirements for industrial facilities discharging into a POTW if it can be demonstrated to the satisfaction of the Administrator and the State that the modification will not interfere with meeting the State designated uses for the receiving water body.

For an industrial facility to receive a modification, the POTW must apply on its behalf. The POTW must have an approved general pretreatment program and show that it is either achieving secondary treatment or on a compliance schedule to achieve it. Among other things, the POTW must also develop for itself end-of-pipe numerical effluent limitations for each of the pollutants that would otherwise be limited by the categorical standard. These end-of-pipe limitations must be adequate to ensure that attainment of local water quality objectives will not be interfered with. In addition, a monitoring program must be in place to ensure that these limitations in fact will not be exceeded.

ADMINISTRATIVE CIVIL PENALTIES

Section 7 amends section 309 of this Act to provide the Administrator with authority to administratively assess civil penalties of up to $10,000/day for clear and well-documented violations of the Clean Water Act which may not be serious enough to require judicial enforcement.

Presently, civil penalties under the Act can only be imposed through judicial enforcement. By providing authority for administrative penalty assessment and resolution of actual issues before a neutral hearing officer, this revision will allow institution of an enforcement mechanism which would minimize protracted litigation while ensuring due process and resolving issues to the satisfaction of all parties more efficiently and expeditiously.

CRIMINAL SANCTIONS

Section 8 amends section 309 to provide that dischargers or individuals who knowingly violate or cause the violation of certain Clean Water Act requirements would be subject to criminal penalties of up to $50,000/day and/or imprisonment for up to 2 years. Existing misdemeanor penalties would be retained to address those violations which do not merit extraordinary punishment.

Presently the Clean Water Act has no provision that deals with knowing violations of major statutory or regulatory requiremments. This provision is intended to address intentional violations of the Act occurring on a regular basis over an extended period of time that result in significant harm to public health or the environment and provide for the imposition of correspondingly stiffer penalties for such actions. This provision is not directed or intended to apply to isolated instances of either unpermitted discharges or discharges exceeding permit limitations.

THERMAL DISCHARGES

Section 9 amends section 316 to modify the environmental tests for thermal discharge modifications from a test based on balanced, indigenous population to either the attainment and maintenance of thermal water quality criteria or a test based on a balanced population of shellfish, fish, and wildlife. Such modifications would be conditioned on the establishment of a monitoring program to ensure compliance.

The present provision may require protection for uses which do not exist in the receiving waters of the discharger and which may exceed existing State standards.

Section 316 is also amended to allow the use of alternative measures, such as construction and operation of a fish hatchery restocking program, to mitigate the adverse environmental effects of intake structures if the alternative measures are equal in effect to the Best Technology Available for intake structures.

NPDES PERMIT TERM EXTENSION

Section 10 amends section 402 of the Act to extend the present NPDES permit term under the Act from 5 to no more than 10 years for permits with no modifications.

For the State and Federal agencies assigned the responsibility for issuing discharge permits, the extension of the permit term will reduce the annual permitting workload and serve as a management tool to ensure that large backlogs do not accumulate in the future. For the permittee, the longer term should generally provide

more certainty over the longer period of time, thereby making investments in pollution control more economical.

PARTIAL NPDES PROGRAM APPROVAL

Section 11 amends section 402 to allow EPA to approve partial State administration of permit programs. Currently, States wishing to administer the NPDES Program must assume all major components of the program before EPA is authorized to approve State assumption.

Allowing partial program approvals would provide the States flexibility in seeking approval for those parts of the program which they can administer immediately. While a State with a fully approved program could return the entire program to EPA , it could not return any part or parts.

MUNITIONS

Section 12 amends section 502 to exclude munitions used in the course of conventional military weapons training and testing from the definition of pollutants controlled under the Act. The purpose of this revision is to permit the military to conduct training activities without the necessity of obtaining an NPDES permit for the intentional or accidental discharge of projectiles into waters near or surrounding targets.

CRIMINAL INVESTIGATIONS

Section 13 amends section 501 of the Act to affirm the existing authority of EPA to investigate and refer cases under the criminal provisions of the statute. The need for this provision arises from the absence of specific statutory language pertaining to criminal investigative jurisdiction under the Act.

In January 1981, as a result of specific challenges to the Agency's independent authority to conduct criminal investigation, Attorney General Civiletti issued a confirmation of criminal investigative jurisdiction in a letter to the Administrator of EPA. Litigants continue to resist, however, due to the absence of specific statutory language confirming this authority.

Enactment of section 13 will confirm and clarify the Agency's authority to initiate and conduct investigations of potential criminal violations of the Clean Water Act and to refer the results of these investigations to the Attorney General for prosecution.

FUNDAMENTALLY DIFFERENT FACTORS DETERMINATION

Section 14 amends section 301(1) of the act to confirm the agency's authority to adopt an administrative procedure which may be used to determine alternative technology-based effluent limitations and standards for existing direct and indirect discharges which are fundamentally different from dischargers considered in the development of national effluent guidelines. EPA has traditionally relied on the fundamentally different factors (FDF) determination procedure as a "safety valve" in developing, implementing and defending effluent guidelines and standards for existing sources. The FDF determination procedure has permitted EPA to focus its data gathering and analysis during the national rulemaking on the more typical facilities and defer to subsequent proceedings those plants with unique features.

CONFLICT OF INTEREST

Section 15 amends section 304(i) of the Act to modify the conflict of interest requirements applicable to state permitting boards along the lines of the Clean Air Act. This provision would eliminate the current prohibition on state permitting boards employing any person who receives, or has received during the previous two years, a significant portion of his income directly or indirectly from permit holders or applicants for a permit. It would also require state permitting boards to have at least a majority of members who represent the public interest and for any potential conflicts of interest to be adequately disclosed.

REPORT TO CONGRESS

Section 16 repeals section 6 of the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 nt.) which requires the Secretary of Commerce to report annually to Congress on the international trade impacts of water pollution control expenditures. The Department of Commerce has found it extremely difficult,

and often impossible, to obtain from foreign countries the detailed data needed to prepare the reports. Only the 1976 and 1979 reports have included cost data from foreign countries, and then only for three industries. Accordingly, the reports have not been very useful and do not justify their costs.

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

Section 17 amends the definition of "State" to include the Commonwealth of the Northern Mariana Islands. Since the Act was last reauthorized in 1977, a portion of the Trust Territory of the Pacific Islands has been redesignated as the Commonwealth of the Northern Mariana Islands. Expansion of the term "state" to include them would conform the Act to reflect their new status.

AUTHORIZATION

Sec. 1. (a) Section 104(u)(1) is amended by deleting the word "and" following "1981," and by inserting "not to exceed $12,533,600 for the fiscal year ending September 30, 1984, and such sums as may be necessary for the fiscal years ending September 30, 1985, September 30, 1986, September 30, 1987, and September 30, 1988" immediately following "1982".

(b) Section 106(a) is amended by deleting the word "and" following "1973", by inserting "; and" immediately following "1982", and by adding a new paragraph (3) as follows:

"$24,000,000 for the fiscal year 1984, and such sums as may be necessary for the fiscal years 1985, 1986, 1987 and 1988".

(c) Section 517 is amended by striking "and" immediately following "1981," and by inserting ", $91,589,300 for the fiscal year 1984 and such sums as may be necessary for the fiscal years 1985, 1986, 1987, and 1988" immediately before the period at the end thereof.

(d) Section 517 is further amended by inserting "304(k)" in place of "304".

BAT/BCT COMPLIANCE DEADLINE EXTENSION

Sec. 2. (a) Section 301(b)(2)(C) is amended to read as follows: "With respect to all toxic pollutants referred to in table 1 of Committee Print Numbered 95-30 of the Committee on Public Works and Transportation of the House of Representatives, compliance with those effluent limitations established in regulations issued under sections 301(b)(2) and 304(b)(2) of this Act no later than July 1, 1988, and for all other limitations established to carry out the provisions of this subparagraph compliance no later than 3 years after the date such limitations are established;".

(b) Section 301(b)(2)(E) is amended to read as follows: "With respect to pollutants identified pursuant to section 304(a)(4) of this Act for categories and classes of point sources, other than publicly owned treatment works, compliance with those effluent limitations established in regulations issued under sections 301(b)(2)(E) and 304(b)(4) of this Act no later than July 1, 1988, and for all other limitations established to carry out the provisions of this subparagraph compliance no later than 3 years after the date such limitations are established;".

(c) Section 301(b)(2)(F) is amended to read as follows: "For all pollutants (other than those subject to subparagraphs (C), (D), or (E) of this paragraph) compliance with those effluent limitations established in regulations issued under sections 301(b)(2) and 304(b)(2) of this Act no later than July 1, 1988, and for all other limitations established to carry out the provisions of this subparagraph compliance no later than 3 years after the date such limitations are established.".

(d)(1) Section 301(k) is amended by deleting the words "July 1, 1987," and inserting in lieu thereof the words "July 1, 1991,".

(2) Section 301(k) is further amended by deleting the letter "(A)" from "(b)(2)(A)" wherever it appears.

MUNICIPAL DEADLINE

Sec. 3. Section 301(i)(1) is amended by deleting the words "within 180 days after the date of enactment of this subsection" and inserting in lieu thereof the following: "within 12 months after enactment of the Clean Water Act Amendments of 1983.".

ENVIRONMENTAL MODIFICATION FEES

Sec. 4. Section 301 is amended by adding a new subsection (n) as follows:

"The Administrator may prescribe such processing fees for applications for modifications and exemptions submitted to the Administrator pursuant to sections 301(c),

(g), (h), (m), 307(e), and 316(a) of this Act as he deems appropriate. All amounts collected by the Administrator under this subsection shall be used solely for application processing purposes; provided that these amounts shall be credited to the appropriation that incurs the costs and shall be available only in such amounts as are included in appropriations acts.".

NEW SOURCE PERFORMANCE STANDARDS

Sec. 5. Section 306(a)(2) is amended by adding a sentence at the end thereof to read as follows:

"For the purposes of any regulation proposed after the date of enactment of the Clean Water Act Amendments of 1983, the term "new source" shall mean any source, the construction of which is commenced after the publication of final regulations prescribing a standard of performance under this section which is applicable to such source.".

PRETREATMENT

Sec. 6. (a) Section 307 is amended by adding a new subsection (e) as follows:

"(1) The Administrator, with the concurrence of the State (or, if appropriate, the State), may issue a permit under section 402 for a treatment works (as defined in section 212 of this Act) which is publicly owned, which modifies applicable industrial categorical standards established under sections 307(b)(1) and (c) of this Act for industrial sources introducing pollutants into such works upon a showing, satisfactory to the Administrator (or, if appropriate, the State) that—

(A) the treatment works is in compliance with the requirements of section 402(b)(8) of this Act;

(B) the treatment works is in compliance or subject to a schedule for achieving compliance with effluent limitations based upon secondary treatment (as defined pursuant to section 304(d)(1) of this Act or as may be modified pursuant to section 301(h) of this Act) and with the requirements of section 403 of this Act;

(C) there are applicable numerical effluent limitations for the treatment works specific to the pollutants for which the modification is requested to ensure that such pollutants do not pass through the treatment works in quantities sufficient to interfere with the attainment or maintenance of the designated uses (established pursuant to section 303(c) of this Act) of the body of water into which such works discharge, and that the works is in compliance or subject to a schedule for achieving compliance with such limitations as expeditiously as possible and with the requirements of section 403 of this Act;

(D) such modification will not result in any pollutant interfering with the operation of such works or impairing current or planned future sludge use or disposal by such works;

(E) there exists adequate legal, financial, technical, analytical, administrative, and enforcement authority, as well as resources and a system of enforceable limitations to ensure compliance with the requirements of this subsection;

(F) a monitoring program will be established in accordance with section 402 of this Act to ensure continued compliance with the requirements of this subsection; and

(G) an annual report will be submitted to the Administrator (or, if appropriate, the State) to document continued compliance with the requirements of this subsection.

(2) Upon a finding that any of the applicable requirements of this subsection are not being met by the treatment works to which a modified permit was granted, and after notice and consultation with State and local authorities (or, if appropriate, the Administrator), the Administrator (or, if appropriate, the State) shall modify or rescind such modification, and may establish such effluent limitations for the treatment works as may be necessary to achieve the purposes of subsections (b) and (c) of this section.

(3)(A) Any application for a modification filed by a treatment works under this subsection shall not operate to stay any requirement of subsection (b) or (c) of this section unless such works submits a letter of intent to the Administrator (or, if appropriate, the State) within 120 days of the promulgation date of the industrial categorical standard for which the modification is requested, or within 120 days of the date of enactment of this bill if the applicable standards was promulgated prior to such date.

(B) The letter of intent shall include, but not be limited to, a demonstration satisfactory to the Administrator (or, if appropriate, the State) that (i) the treatment works is in compliance with the requirements of section 402(b)(8) of this Act or with

effluent limitations based upon secondary treatment (as defined pursuant to section 304(d)(1) of this Act or as may be modified under section 301(h) of this Act), and (ii) both an achievable schedule containing planning, development, and performance dates by which all the requirements of paragraph (1) will be met, and a workplan specifying the scientific, technological, and administrative methodologies to be relied on in meeting the schedule have been established.

(C) Upon receipt of a satisfactory letter of intent, the Administrator (or, if appropriate, the State) may stay the applicable requirements of a categorical standard for which a modification is requested for an industrial source introducing pollutants into the treatment works for no more than two years from the date such letter of intent is received.

(D) The Administrator (or, if appropriate, the State) shall revoke any stay granted under this subsection upon a finding that the dates of the schedule or methodologies of the workplan contained in the letter of intent under subparagraph (B) have been significantly delayed or varied."

(b) Section 402 is amended by adding a new subsection (m) as follows: "In issuing a permit under this section, the Administrator shall not require pretreatment by dischargers of conventional pollutants identified pursuant to section 304(b)(4) of this Act in compliance with all applicable requirements of local pretreatment programs approved under subsection (b)(8) of this section as a substitute for municipal treatment adequate to meet the requirements of a permit issued under this section for a treatment works (as defined in section 212 of this Act) which is publicly owned. Nothing in this subsection shall affect the Administrator's authority under sections 307 and 309 of this Act, affect State and local authority under sections 307(b)(4) and 510 of this Act, relieve such treatment works of its obligations to meet requirements established under this Act, or preclude such works from pursuing whatever feasible options are available to meet its responsibility to comply with its permit issued under this section.".

ADMINISTRATIVE CIVIL PENALTY AUTHORITY

Sec. 7. Section 309 is amended by adding a new subsection (g) as follows:

"(1) In addition to any other relief provided, whenever on the basis of any information available to him the Administrator finds that any person is in violation of section 301, 302, 306, 307, 308, 318, or 405 of this Act, or is in violation of any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act by him or by a State, or in a permit issued under section 404 of this Act by a State, he may after consultation with the State in which the violation occurs assess a civil penalty of not than $10,000 per day of violation not to exceed $75,000 in total.

(2) In assessing such penalty, the Administrator shall provide the person in violation with notice and opportunity for a hearing which shall not be subject to the requirements of section 554 or 556 of the Administrative Procedure Act.

(3) In determining the amount of penalty to be assessed, the Administrator shall take into account the nature, circumstances, extent and gravity of the violations, and with respect to the violator, ability to pay, effect on ability to continue in business, any prior history of such violations, the degree of culpability, economic savings, if any, resulting from the violation and such other matters as justice may require.

(4) If any person fails to pay a civil penalty assessed in accordance with paragraphs (1), (2), and (3), the Administrator may request the Attorney General to collect the amount assessed plus interest in an action brought in any appropriate district court in the United State.

(5) Any person aggrieved by a final assessment of the Administrator and who has requested a hearing under paragraph (2) may seek review in the appropriate district court of the United States only by filing an action within 30 days of the date of that assessment.

(6) The Administrator shall have the authority to issue subpoenas ad testificandum and subpoenas duces tecum in connection with hearings under subsection 309(g)(2) of this Act and may request the Attorney General to bring an action to enforce any subpoena under this section. The district courts shall have jurisdiction to enforce such subpoenas and impose sanctions and attorneys fees for failure to comply.

(7) Action taken by the Administrator pursuant to this subsection shall not affect or limit the Administrator's authority to enforce any provision of this Act, provided however, that the discharge of pollutants which is penalized administratively under

this subsection shall not be the subject of a civil penalty under section 309(d) or section 311(b) of this Act.".

CRIMINAL SANCTIONS

Sec. 8. Section 309(c) is amended as follows:

"(1) Any person who (A) negligently violates section 301, 302, 306, 307, 308, 318, or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued section 402 of this Act by the Administrator or by a State, or any requirement imposed in a pretreatment program approved under Section 402(b)(8) of this Act or in a permit issued under section 404 of this Act by the Secretary of the Army or by a State, or who (B) negligently introduces into a sewer system or into publicly owned treatment works any pollutant or hazardous substance which causes or may reasonably be anticipated to cause personel injury or property damage, or causes such treatment works to violate any effluent limitation or condition in any permit issued to the treatment works under section 402 of this Act by the Administrator or a State, shall be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or by both.

(2) Any person who (A) knowingly violates section 301, 302, 306, 307, 308, 318, or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act by the Administrator or by a State, or any requirement imposed in a pretreatment program approved under section 402(b)(8) of this Act or in a permit issued under section 404 of this Act by the Secretary of the Army or by a State, or who (B) knowingly introduces into a sewer system or into a publicly owned treatment works any pollutant or hazardous substance which causes or may reasonably be anticipated to cause personal injury or property damage, or causes such treatment works to violate any effluent limitation or condition in a permit issued to the treatment works under section 402 of this Act by the Administrator or a State, shall be punished by a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than two years, or by both.

(3) It shall be an affirmative defense under subsections (c)(1)(B) and (c)(2)(B) of this section that such discharge or introduction was in compliance with all applicable Federal, State, and local requirements which govern the discharge or introduction of a pollutant or hazardous substance into a sewer, or publicly owned treatment works.

(4) Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this Act or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this Act, shall upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two years, or by both.

(5) If a conviction is for a violation of paragraph (1), (2), or (4) of this subsection committed after a first conviction of such person under the paragraph, the maximum punishment under the respective paragraph shall be doubled with respect to both fine and imprisonment.

(6) For the purpose of paragraphs (1), (2), and (4), the term "person" shall mean, in addition to the definition contained in section 502(5) of this Act, any responsible corporate officer.

(7) For the purpose of paragraphs (1), (2), and (3), the term "hazardous substance" shall mean (A) any substance designated pursuant to section 311(b)(2)(A) of this Act, (B) any element, compound, mixture, solution, or substance designated pursuant to section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress), (D) any toxic pollutant listed under section 307(a) of this Act, and (E) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act.".

THERMAL DISCHARGES

Sec. 9. (a) Section 316(a) is amended as follows:

"The Administrator (or, if appropriate, the State) may issue a permit under section 402 of this Act which modifies the requirements of sections 301 or 306 of this Act with respect to any effluent limitation proposed for the control of the thermal

component of any discharge from a point source, upon a showing by the applicant satisfactory to the Administrator (or, if appropriate, the State) that such modified limitation will assure (1) the attainment and maintenance of thermal water quality criteria adopted under section 303 and compliance with the requirements of section 403 of this Act, or (2) the protection and propagation of a balanced population of shellfish, fish, and wildlife in and on that body of water as determined by the State (or, if appropriate, the Administrator). Before the Administrator (or, if appropriate, the State) may impose such a modified limitation, the applicant must also show that a monitoring program will be established in accordance with section 402 of this Act to ensure continued compliance with the requirements of this subsection."

(b) Section 316(b) is amended as follows:

"Any standard established pursuant to section 301 of this Act and appliccable to a point source shall require (1) that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts, or (2) that other equally effective measures be applied either alone, or in combination with best technology available, to minimize adverse environmental impacts. Any standard established pursuant to section 306 of this Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts."

(c) Section 316(c) is amended as follows:

"Notwithstanding any other provision of this Act, any point source of a discharge having a thermal component, the modification of which point source is commenced after the date of enactment of the Federal Water Pollution Control Act Amendments of 1972 and which, as modified, meets (i) effluent limitations established under section 301, or, if more stringent, effluent limitations established under section 303 or (ii) the requirements of paragraphs (a) (1) or (2) of this section, shall not be subject to any more stringent effluent limitation with respect to the thermal component of its discharge during a ten year period beginning on the date of completion of such modification or during the period of depreciation or amortization of such facility for the purpose of section 167 or 169 (or both) of the Internal Revenue Code of 1954, whichever period ends first."

NPDES PERMIT TERM EXTENSION

Sec. 10. Section 402(b)(1)(B) is amended as follows: "are for fixed terms not exceeding 10 years, except for permits which reflect modifications under section 301 (c), (g), (h), (m), or 307(e) of this Act which shall be for fixed terms not exceeding 5 years;".

PARTIAL NPDES PROGRAM APPROVAL

Sec. 11. (a) Section 402(b) is amended by inserting the following after the first full sentence: "In the event the Governor submits a plan to administer part of a permit program, the Administrator may approve such submission upon a showing that the plan provides for administration of permit program components which represent a significant and identifiable part of the State program authorized by this section.".

(b) Section 402(c) is amended by deleting the words "as to those navigable waters" and inserting in lieu thereof the words "as to those activities and discharges".

(c) Section 402(c) is further amended by adding a new paragraph (4) as follows:

"In the event a determination is made (A) by a State to return administration of the program to the Administrator or (B) by the Administrator to withdraw approval pursuant to paragraph (3) of this subsection, return of administration or withdrawal of approval may only be made of the entire program currently being administered by the State."

MUNITIONS

Sec. 12. Section 502(6) is amended by deleting the word "or" where it appears before the letter "(B)", and inserting a comma in place of the period, and adding the following to the end thereof:

"or (C) munitions expended in the course of conventional weapons testing or training exercises by the Armed Forces of the United States, or by its allies in joint training exercises.".

CRIMINAL INVESTIGATIONS

Sec. 13. Section 501 is amended by adding a new subsection (g) as follows:

"In carrying out the provisions of this Act, the Administrator, and duly-designated agents and employees of the Environmental Protection Agency, are authorized to

initiate and conduct investigations under the criminal provisions of the Act, and to refer the results of these investigations to the Attorney General for prosecution in the appropriate cases.".

FUNDAMENTALLY DIFFERENT FACTORS DETERMINATION

Sec. 14. Section 301(1) is amended to read as follows:

"(1) The Administrator may not modify any requirement of this section as it applies to any specific pollutant which is on the toxic pollutant list under section 307(a)(1) of this Act, except that the Administrator may modify such a requirement to the extent justified by the fact that a direct or indirect discharger is, in terms of the factors specified in Section 304(b), fundamentally different from the direct and indirect dischargers considered in developing applicable effluent limitations guidelines and pretreatment standards under this section and section 307(b).".

CONFLICT OF INTEREST

Sec. 15. Section 304(i)(2)(D) is amended to read as follows:

"(D) funding, personnel qualifications, and manpower requirements (including a requirement that any board or body which approves permit applications or portions thereof shall have at least a majority of members who represent the public interest and do not derive a significant portion of their income directly or indirectly from permit holders or applicants for a permit. Any potential conflicts of interest by members of such a board or body must be adequately disclosed).".

REPORT TO CONGRESS

Sec. 16. Section 6 of the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251 nt.) is hereby repealed.

COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

Sec. 17. Section 502(3) is amended to read as follows:

"(3) The term 'State' means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, and the Commonwealth of the Northern Mariana Islands.".

Mr. ROE. Please proceed.

TESTIMONY OF HON. WILLIAM D. RUCKELSHAUS, ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY JACK RAVAN, ASSISTANT ADMINISTRATOR FOR WATER; AND REBECCA HANMER, DEPUTY ASSISTANT ADMINISTRATOR FOR WATER

Mr. RUCKELSHAUS. Thank you very much, Mr. Chairman. Accompanying me is Jack Ravan, the new Assistant Administrator for the Office of Water; and Rebecca Hanmer, Acting Assistant Administrator for Water over the last several months, who is most knowledgeable about all the issues the committee is addressing.

Mr. ROE. Before you begin, let me defer to Mr. Stangeland.

Mr. STANGELAND. Thank you, Mr. Chairman. I would just like to take a moment to welcome Mr. Ruckelshaus to this committee. We are all aware of the circumstances that have brought him back to the agency that in many ways he helped form. I can't imagine a better choice for this critical position.

The water, air, and hazardous waste issues confronting our Nation are very real. It is imperative that these issues be kept in a nonpartisan perspective. We should not play politics with the Nation's environment and public health. That is why Bill Ruckelshaus, with his experience and character, provides a very real opportunity to apply true expertise to meet the environmental needs of our Nation. I do not doubt for a minute the Administrator's

knowledge of the existing clean water program and of needed improvements. His knowledge and assistance to the committee are invaluable as we review the law and consider amendments to the Clean Water Act.

Mr. ROE. The Chair recognizes the Administrator.

Mr. RUCKELSHAUS. Mr. Chairman, I have already introduced Mr. Ravan and Ms. Hanmer. As I suggested, over the last several months Rebecca Hanmer has really done an outstanding job for us as the Acting Assistant Administrator for the Office of Water. She has been very helpful in steering through the legislation to the point it currently is in the Senate.

I want to emphasize at the outset how important I think the work this committee is doing for the country and for the cause of clean water. In my Senate testimony back in June, we offered to help the Senate committee any way we could—give technical assistance with the staff and work closely with the committee in its efforts to develop sound amendments for the reauthorization of the Clean Water Act. We certainly make that same offer to this committee regardless of whether we ultimately agree or disagree on precisely what the wording or provisions ought to be in the law.

Certainly, all of the collective expertise and wisdom that the Agency has ought to be made available to the Congress. We certainly want to make that promise, and we want to cooperate in any way that we can.

I want to go through my statement, Mr. Chairman. It is lengthier than usual, but in light of the importance of the issues and their complexity, I want to make sure that I am on the record as clearly as possible as to what we think ought to be done.

Mr. ROE. I think it is important.

Mr. RUCKELSHAUS. The committee has already held extensive hearings on the Clean Water Act last year and the breadth and detail of those hearings was very impressive. Your 2,300-page report reflects the diligent efforts of both this subcommittee and its staff in considering midcourse modifications to what I think we all agree is a fundamentally sound piece of legislation.

I understand that the purpose of this series of hearings is to review the concerns and issues that have been raised in connection with reauthorization of the Clean Water Act. I think the most useful thing that I, as Administrator of the Environmental Protection Agency, can do, Mr. Chairman, is to define what I see as the significant problem areas, comment on some of the major proposals before this committee, and offer my own views as to what direction any midcourse corrections should take. As I said, I am prepared to provide whatever technical assistance and information you require in addressing the difficult issues facing this subcommittee.

The key issues have been clearly defined in the numerous bills, including H.R. 3282 which is presently before this subcommittee and the administration's proposals, a copy of which I have attached to my testimony. I am happy to say that in my own mind, there are some issues on which there is no question.

The Clean Water Act is working. The control strategy formulated by Congress in 1972 and refined in 1977 has proven effective and successful. I have had firsthand experience with the background and origins of this legislation and there simply is no doubt that we

have seen impressive progress over the past decade. The act's strategic approach of requiring implementation of nationwide technology based effluent limitations followed by any additional, needed controls based on site-specific water quality concerns should be continued.

On other issues, our approach to the key questions has been significantly strengthened by the useful comments we have received from Congress and the public on our original proposals, and by the other proposals which have been introduced in both Houses of Congress. Over the past several months our analysis of the major issues has continued, and I think we now have a better sense of what is reasonable, workable, and will yield results.

Our analysis has also identified four additional issues which this committee may care to review. The most important of these, fundamentally different factors determinations, so-called FDF's, are addressed in this statement. The other three are attached as part of the administration proposals. Brief explanations and proposed language on all four of these issues have been added to the administration's proposals for the committee's consideration.

I hope that in discussing the major questions before us today, we can build on the reauthorization process begun last year and quickly complete the development of effective solutions to those problems.

Now, as to the construction grants funding issue, one issue raised in H.R. 3282 that was not addressed last year is the proposal for increased construction grants funding. Under your leadership, Mr. Chairman, redirection and reauthorization of the construction grants program was considered in great detail 2 years ago and is reflected in the 1981 amendments to the Clean Water Act. The administration continues to support the 1981 amendments and believes that the authorization levels set out in them are appropriate.

In 1985 Congress will have to determine whether the program should be continued or modified. After more than 25 years, I believe there should be a fundamental examination of whether the program should be targeted to small municipalities, modified to a loan program or turned over to the States under the administration's New Federalism concept. Critical to all of these considerations is the need to determine the most appropriate Federal role in obtaining expeditious compliance by municipal pollution control facilities with the enforceable requirements of the act.

EPA will be conducting a detailed study of issues related to the reauthorization of the construction grants program. We would be pleased to work with you as we complete the study.

Beyond the construction grants program, the key issues I would like to touch on today include industrial compliance deadlines, pretreatment, fundamentally different factors determinations, water quality standards, post-BAT controls, nonpoint source controls, and the enforcement of compliance deadlines.

Of all the issues, clearly the most urgent in this reauthorization process is the need to extend industrial compliance deadlines. Industrial facilities have less than a year to comply with the current July 1, 1984, deadline for achievement of best available technology and best conventional technology effluent limitations. In many cases they have not been issued permits upon which even to begin

the compliance process due to delays in agency promulgation of national effluent guidelines. EPA is now in the final stages of completing those guidelines. But the fact remains that the necessary period for permit issuance and compliance that Congress envisioned in 1977 has been drastically reduced.

A number of different proposals have been made to extend industrial deadlines. These proposals differ in terms of the effluent standards to which they would apply and how much additional time they would provide. What each of these proposals clearly recognizes is the need to extend industrial compliance deadlines.

In resolving the question of extensions, Mr. Chairman, I believe there are three objectives that any solution must address. First, any extension must recognize the time necessary to promulgate effluent guidelines, issue permits, and for dischargers to come into compliance. Second, the extension must contain a final compliance date which applies to all BAT/BCT-related permits. Third, the language should provide clearly that if compliance can be achieved before the final date, then it must be.

One thing I am very concerned about after reviewing the various proposals is that any final compliance deadline must be realistic. A number of the legislative proposals do not provide adequate time for the regulatory agencies to translate the effluent guidelines into individual permits. The July 1, 1988, deadline contained in the administration proposal reflects, I believe, a realistic assessment of the time needed to complete issuance of the effluent guidelines, write implementing permits, and allow dischargers to come into compliance.

Let me emphasize, Mr. Chairman, that the administration's proposal would not allow any additional time for dischargers which could achieve compliance before July 1, 1988. Where compliance could be achieved before July 1, 1988, the implementing permits would contain the earlier deadline.

Finally, the administration proposal does continue the incentive for innovative solutions now embodied in section 301(k) of the act.

There is no question that some form of deadline extension is needed, Mr. Chairman, and I would like to offer whatever assistance the committee may require in determining the most appropriate way to address that need.

Pretreatment: The toughest issue with which I have dealt thus far in connection with Clean Water Act reauthorization is pretreatment. This is a subject to which EPA has devoted a substantial amount of time, resources, and effort. The fundamental objectives of this program under the act are to protect water quality, protect municipal sludge from contamination by industrial toxic wastes, and protect the operation of the POTW itself.

The need to achieve these goals is widely recognized and unquestioned. However, the best means of achieving them has been the subject of extensive debate since 1972. One of my principal concerns is that technology based categorical pretreatment standards inherently will result in cases of over or under treatment. There may be cases in which full implementation of categorical pretreatment standards may not be necessary or may not be sufficient to achieve the goals of the program.

The difficult question we all have been grappling with is how to address instances of potentially unnecessary treatment without opening a Pandora's box of technical difficulties, serious resource demands, administrative problems, and scientific uncertainties, and without delaying the program in those situations that need these controls.

With the gathering momentum of local pretreatment programs, and with the Agency's promulgation of categorical standards well underway, I am reluctant to recommend anything that will entail significant delay or loss of momentum. Of 1,700 POTW's required to develop local pretreatment programs, approximately 60 percent have now submitted some portion of the necessary elements for program approval. Of that group, roughly 370 have already received approval and are now ready to enforce categorical standards. Within this fiscal year, EPA and approved States are expected to approve an additional 800 local pretreatment programs. In addition, the compliance deadline for one of the major groups affected by categorical standards, the electroplaters, is now less than a year away.

At the same time, I also feel strongly that, where possible, we must avoid the application of categorical pretreatment standards where they are not needed. For this reason, I have pursued the concept of a pretreatment waiver. This is the reauthorization issue on which I have spent the most time over the last several months. I have talked with staff at all levels in the Agency and met with outside groups in an effort to develop a workable approach to this problem.

I must confess, Mr. Chairman, this has been a frustrating effort for me. As attractive as the concept of relying on end-of-pipe effluent limitations to insure protection of water quality seems, I have come to the difficult conclusion that it just is not feasible to administer such a program without a serious delay of 2 to 3 years in the program. The prerequisites of any successful national effort in this area are missing. Most States are only in the early stages of establishing specific ambient water quality criteria and permit effluent limitations for toxic substances. Furthermore, the national sludge disposal and use standards to be established by EPA are still several years away.

We could, of course, wait for the development of these effluent limitations and sludge standards, but I think the pretreatment program has now reached a stage where that would seriously jeopardize the progress that has been made to date. I think the Agency, indirect dischargers, and affected POTW's need to get on with implementing the program in a reasonable, rapid, and effective fashion.

Following my June 14 testimony before the Senate on this same subject, I directed my staff to go back and take a fresh look at the concerns of POTW's and municipalities and the problems associated with implementation of the existing program. After meeting with a number of groups to discuss operational concerns and explore alternatives, I have decided to establish a pretreatment implementation review task force. Its purpose will be to seek solutions to common implementation problems encountered by control and approval authorities. This will include developing equivalent

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industrial monitoring and municipal enforcement programs, and guidance on implementing production-based categorical standards and, where appropriate, to identify regulatory problems. To insure a broad base of information, the task force will be made up of representatives of States, municipalities, industry, the environmental community, and EPA. It will include representatives of both large and small municipalities, as well as municipalities with both new and established programs.

It is my hope that as the recommendations of this task force are factored into the implementation process, some of the most significant technical concerns and objections we have heard will be resolved.

Earlier I mentioned the lack of sludge disposal and use criteria. I am pleased to report that we have now established a program for moving aggressively forward in filling the regulatory gaps in that area. The Agency's sludge task force recently presented their findings to a senior-level policy committee. These included recommendations on how EPA should structure an integrated sludge regulatory program based upon the joint authority of section 405 of the act and the appropriate provisions of EPA's other laws. The committee has endorsed and forwarded those recommendations to me and has directed the task force to prepare a detailed work plan for initiating the effort.

Although many details remain to be worked out, the broad outline of this program involves a comprehensive effort to develop standards and to formulate a State implementation process. These regulations will be supplemented by a general policy statement and general guidance which we will issue this fiscal year. The regulation development effort will clearly take longer—probably in excess of 2 years—but resources within several key offices have already been redirected to support this undertaking. I am confident that this unified effort will produce a comprehensive sludge management program which will serve to insure safer, more cost-effective, and more beneficial sludge management, and which can be integrated into the existing pretreatment program.

In discussing pretreatment, I have emphasized the need to get on with implementation of the program. Of particular concern in this regard is a recent decision of the Third Circuit Court of Appeals as it relates to applying national effluent guidelines for indirect and, by implication, direct dischargers. Essentially, the court held that the fundamentally different factors determination procedure that EPA has had available for use in the application of national effluent guidelines for toxic pollutants is not authorized by the act.

I strongly believe, Mr. Chairman, that the FDF determination procedure is an essential adjunct to the national rulemaking process. EPA has traditionally used this procedure as a safety valve in developing, implementing, and defending effluent guidelines for existing sources. In going through the extraordinarily complex process of a national rulemaking, the FDF determination procedure permitted EPA to focus its data gathering and analysis on the more typical facilities and to defer to subsequent proceedings those plants with unique features.

This has resulted in both major cost savings and reductions in the time necessary for guideline development. By providing an ad-

ministrative remedy for facilities that may not be able to meet national standards due to unique factors not considered in rulemaking, the FDF determination procedure reduces the legal vulnerability of the national standards.

There may be some concern that the administrative remedy provided by FDF determinations is somehow a regulatory loophole. This simply is not the case. It should be noted that the FDF determination procedure may be used to develop requirements more stringent than those contained in the national effluent guidelines.

Let me review very briefly how the FDF determination procedure works. A facility must first submit a petition demonstrating that there is some factor in its situation that is fundamentally different from those considered in establishing the national regulation. Only information not previously considered can be the basis for an FDF determination petition. In other words, this procedure cannot be used as a backdoor means of challenging and rearguing the regulation itself.

Second, to establish a fundamental difference, a facility must show that compliance with the national limits would result in either a removal cost wholly out of proportion to the removal cost considered by the Agency during the development of the national regulation or a fundamentally more adverse non-water-quality impact. This is a very tough test to meet.

Third, any alternative technology based limits may reflect only the degree of modification actually required by the fundamental difference.

Fourth, in order to insure that all points of view are considered, the public is informed of applications for FDF determinations and given the opportunity to participate in the proceeding.

The FDF determination procedure is not a waiver procedure, and, in particular, is not an economic waiver procedure. Rather it is a procedure through which a facility receives an individualized determination of its technology-based effluent requirements. As such, it is analogous to the Agency's use of best professional judgment permit determinations to establish effluent limitations for industrial facilities whose national effluent guidelines have not been issued.

My point is very simply, Mr. Chairman: There are two approaches for responding to a facility with valid grounds for arguing that it is fundamentally different from other facilities in its category. One possibility is to develop a separate subcategory within the regulation, undertake a separate data collection and analysis effort and then repropose and issue the final rule. The other alternative is to leave the national rule in place and use the FDF determination procedure to establish alternative technology-based limitations for the facility that accurately reflect its situation.

Let me emphasize that both of these approaches reflect the exercise of the Agency's regulatory expertise. Both of these approaches will involve a review of the same set of facts. Both involve the public. And both of these processes will end up with the same decision. So what is the difference?

Our major concern is that the subcategorization approach will add further complications and require potentially substantial additional time in developing what are already extraordinarily complex

and detailed national regulations. In essence, this approach would require us to handle through modifications to nationally applicable regulations the special situations of single facilities. This simply is not efficient. By contrast, the FDF determination procedure allows both implementation of the national rule and consideration of individual petitions claiming unique factors.

For these reasons, I urge careful consideration of the attached draft language to clarify and confirm EPA's authority in this area.

With the completion of the remaining effluent guidelines over the next year and the implementation of pretreatment and direct discharge standards, a reasonable question remains: What if these technology-based limitations are not stringent enough to protect designated water uses? In accordance with the act's fundamental pollution control approach, reliance on strengthened and more sophisticated water quality standards will form the basis of EPA's post-BAT strategy.

Two issues come up in assessing any post-BAT strategy. The first is the adequacy of the water quality standards upon which control strategies will be based. The second is the strategy itself. Taking water quality standards first, I have read your letter of March 14, Mr. Chairman, and understand that one of the main reasons for the current widespread concern over these standards has been the Agency's October 1982 proposed rulemaking to revise the existing water quality standards regulation.

As I understand it, one of the principal purposes of this proposal was to make the standards-setting process a better and more effective decisionmaking tool. Regardless of the Agency's intent, the proposed revisions apparently were viewed by the public as a retreat from the goals and objective of the act in the areas of antidegradation, downgrading and cost-benefit analysis.

In response to numerous comments we have received on this issue, and the major concern indicated by both the House and Senate, we have recently made further revisions to and promulgated the Agency's water quality standards regulation. Copies of our redrafted preamble and regulatory provisions have been provided to this subcommittee for its information and use. I believe these additional revisions meet the concerns and objections that have been raised and both strengthen and clarify our national water quality standards program.

Section 6 of H.R. 3282 would address the issues of downgrading and antidegradation by codifying a revised version of the existing water quality standards regulation. Both of these provisions would hamper the ability of EPA and the States to deal with site-specific problems.

Since our revised regulation will yield the same environmental results, I strongly urge these provisions be deleted. Also, I would note that the Senate Committee on Environment and Public Works has agreed to delete the antidegradation and downgrading provisions in their bill.

H.R. 3282 would also add a provision requiring the use of numerical water quality criteria. This provision, requiring States to adopt numerical criteria for toxic pollutants, would essentially preclude States from using alternative means, such as biological criteria, of establishing water quality benchmarks. Under EPA's revised

regulation, States must identify specific water bodies where toxic pollutants are causing problems, and must adopt criteria sufficient to protect the designated use. These criteria may be numerical or narrative and may be used singly or in combination, as needed.

For example, where an effluent contains a few, readily identifiable toxic chemicals, then pollutant-specific criteria and effluent limitations will be used. In situations involving discharges of complex effluents, it may neither be feasible nor environmentally protective to use a numerical, pollutant-by-pollutant approach. In those cases, I believe it is more effective to use biological testing as the basis for setting aquatic toxicity limits. Because our revised regulations provide a more effective, flexible approach which we have adequate authority to implement, I recommend that this provision be deleted, or at least modified to provide the flexibility to use either approach.

With respect to a post-BAT control strategy, H.R. 3282 would require EPA to inventory nonattainment waters existing after the installation of technology-based controls, and then develop and implement in cooperation with the States an individual point source control strategy for each nonattainment water body.

EPA has been studying the need for toxic pollutant controls beyond BAT for some time. The Agency has also been very hard at work developing the methods, especially biological assessments, necessary to determine where toxic pollutants are causing problems and to determine necessary levels of control. While much work remains to be done, I am confident that the Agency is in a position to make these methods generally available during this fiscal year.

Where EPA or a State determines that BAT is not sufficient to protect the designated uses of the receiving waters, it issues permits which include more stringent effluent limitations. Where the data are not available or not conclusive to support such a determination, the source's permit will be written to incorporate BAT effluent limitations but will contain monitoring requirements that become effective once the BAT effluent limits are achieved. If this monitoring shows that the BAT effluent limitations do not protect designated water body uses, the permit will be reopened and additional requirements incorporated. All of this is currently authorized by the existing statute.

So while I support establishing controls beyond BAT when necessary, I feel that the Agency already has the authority to accomplish this. And I believe, therefore, that statutory changes are neither necessary nor desirable. I would be happy to work with you and the committee in further explaining our concerns and reservations on this issue.

Next I would like to address the control of nonpoint sources of pollution. H.R. 4037 proposes a national program to assist State implementation of nonpoint source pollution controls. With the establishment of technology-based standards well underway for point sources, it is now time to turn our attention to the control of pollution from nonpoint sources. I believe there is no question that pollution from nonpoint sources is having significant adverse impacts on water quality in certain areas across the United States.

The 1982 State water quality assessments report prepared under section 305(b) of the act describes the nature of this problem: (1) in one-fifth of the States, nonpoint sources are now the most important cause of water degradation in those waters not meeting designated uses; (2) agricultural nonpoint sources are the major nutrient sources in lakes with eutrophication problems; and (3) of the 20 States which specifically quantified their progress toward the 1983 Clean Water Act goals, 15—or 75 percent—list nonpoint sources as significant sources in their remaining pollution problem waters.

Attainment and maintenance of water quality standards is our fundamental objective under the Clean Water Act. We all recognize that achieving this depends on controlling both point and nonpoint sources. My concern is that while tremendous public and private investments have been made to control point sources, we have thus far been remiss in addressing the continuing problem of nonpoint sources pollution. This condition is of major importance both because it affects the total amount of pollution control achieved and because it dilutes and dissipates the environmental return on the time, resources, and effort we have already expended.

Just as there is general agreement about the significance of nonpoint sources pollution control problems, there is a basic consensus on what needs to be done. Each State must identify specific problem water bodies and contributing nonpoint sources, develop tailored controls, and proceed with implementation. To date, most States have generally identified their nonpoint sources problem waters, the nonpoint source affecting those waters, and proposed control approaches.

Much of this was accomplished as part of the broader 208 planning effort. In some cases, there may be a need to go beyond this initial planning and identify specific problem activities and appropriate site-specific controls. Once the site-specific control approaches are identified, the crucial next step will be to insure that the parties responsible for those controls put them into practice.

My discussion on nonpoint sources indicates two basic areas of agreement on implementing the necessary controls. One area of agreement is that State and local governments have the major planning, program development, and implementation responsibilities. They unquestionably have a broader range of authorities and more detailed knowledge of site-specific conditions than we have at the Federal level. Therefore, they are able to tailor nonpoint source control programs to meet their specific needs.

The other area of agreement is that, while States must have the primary responsibility for nonpoint source program development and implementation, the Federal Government will reemphasize its efforts to address this problem. The Agency also has the responsibility to provide technical expertise and disseminate knowledge gained at the Federal, State, and local level to other communities, with similar problems.

I believe that a number of steps can be taken now to ensure that the Federal Government effectively meets its responsibilities in this area. First, under existing Clean Water Act authorities, EPA will provide clear guidance under which States will update or develop nonpoint source programs for specific water bodies where nonpoint sources substantially impact desired water uses. States

can use or refine existing water quality management plans to accomplish this.

Second, Secretary of Agriculture Block and I have discussed how we can best coordinate our efforts to address priority nonpoint source control needs in each State. We have agreed that after EPA issues its nonpoint source guidance, USDA will support EPA's priority on this subject as part of their ongoing national conservation program. USDA's technical assistance delivery systems can help many farmers in this country to understand the impact their activities can have on water quality, and how they can modify their own farming practices to protect water quality.

USDA has a long and successful history of working at the grassroots level to develop conservation practices, to educate the farmers on these practices and to provide technical assistance in applying them. At the county level, the agricultural stabilization and conservation service, the soil conservation service, and the extension service all work together to provide support and assistance to farmers needing or requesting help.

EPA will continue to encourage States to use funds available under section 205(j) and 106 of the act for nonpoint source needs and provide Agency technical and program support. In addition, EPA will use $2 million in appropriated fiscal year 1984 extramural funds for a nonpoint source report to Congress, development and dissemination of information on control strategies, and technical transfer of NPS methodologies.

EPA will maintain headquarters and EPA regional office personnel to support State and local government nonpoint source control efforts in fiscal year 1984. Finally, the agency, together with other Federal agencies, will be working to examine their fiscal year 1985 needs.

I believe H.R. 4037 and EPA's strategy for nonpoint source pollution control are basically consistent in terms of the need to identify specific problem areas and control needs. However, I am concerned that a Federal cost-sharing program would create disincentives to voluntary action by anyone not receiving Federal funds and therefore would slow the implementation of nonpoint source controls.

I believe the Federal role should not infringe on sensitive State and local decisions concerning land use. I was pleased to note that the recent Senate Committee modifications to their nonpoint source control provision include elimination of the disincentives to voluntary action.

Enforcement: The Clean Water Act will not work unless EPA and State enforcement efforts are vigorous and effective. Toward that end, there are two provisions of the administration's proposal that I would like to emphasize this afternoon—administrative civil penalties and criminal sanctions.

Civil enforcement: Presently, the Clean Water Act provides two civil enforcement options. When faced with a violation of the act, the administrator may bring a civil action in the appropriate U.S. district court for penalties and injunctive relief.

Section 7 of the administration's proposed legislation allows the administrator a third option, to administratively assess civil penalties of up to $10,000 per day—not to exceed $75,000 total—for clear and well-documented violations of the act. Under this approach, a

violator would be given notice and an opportunity for a hearing, and if dissatisfied with the final assessment, he would be able to seek review in a U.S. district court. The court review would be appellate in nature and not a de novo trial proceeding.

The addition of administratively assessed civil penalties as an enforcement tool would give the Agency more flexibility to deal with noncompliance situations. A nonpenalty administrative order may be ineffective in resolving the problems, and yet the option of taking judicial action may be unreasonably costly, burdensome, and time consuming for all the parties involved, given the nature of the violation.

The Agency's experience to date with assessing similar civil penalties existing under other environmental statutes—CAA, FIFRA, TSCA, RCRA—indicates that this option will give EPA more enforcement flexibility, lead to speedier compliance, and assure due process without the expense and delay of a judicial enforcement action.

Section 8 of H.R. 3282 addresses the area of civil enforcement as well. It proposes to increase the daily maximum civil penalty provided for under section 309(d) of the Clean Water Act from $10,000 per day to $20,000 per day. Although this is slightly less than the equivalent provisions of the Clean Air Act and the Resource Conservation and Recovery Act, it strengthens existing enforcement mechanisms, and, therefore, I support it.

I would even support a maximum civil penalty of $25,000 a day to make it consistent with these other statutes. As to the criminal enforcement, knowing violations of the Clean Water Act have caused serious environmental harm and millions of dollars of damage to private and public property. In some cases, they have raised the clear potential for loss of life and serious personal injury. A stronger criminal sanction is needed under the act to deter these violations.

The proposal we are recommending elevates penalties for knowing violations of the act to the felony level and adds criminal sanctions to the act for persons who knowingly introduce into a sewer system a pollutant or hazardous substance which causes or can reasonably be anticipated to cause personal injury or property damage. For those defendants who have complied with all applicable Federal, State, and local requirements, an affirmative defense is provided.

The addition of these criminal penalties to the act will put violations on the same level as violations under RCRA. Currently, a knowing discharge onto the ground of hazardous wastes could subject the discharger to felony sanctions under RCRA. However, the same discharge into a sewer system would only subject the discharger to the misdemeanor provisions of the Clean Water Act. The result is an unintentional incentive to dump hazardous substances into sewer systems. The addition of these criminal sanctions will aid in protecting sewer systems and POTW's in which substantial Federal moneys are invested.

Strong public support exists for aggressive enforcement action in cases of deliberate environmental misconduct. The addition of criminal sanctions to the act for knowing, intentional violations of the act will reflect this public concern and should dispel any per-

ceptions that the intentional violation of the act is not a serious offense.

In conclusion, Mr. Chairman, I have focused my remarks on what I believe are the key reauthorization issues. I have not discussed a number of other issues raised in both the administration's and other proposals before this subcommittee. Clearly, these need to be addressed in this reauthorization process. I hope that today we have begun what will be a continuing dialog to address these remaining issues as well as the ones I have highlighted.

This concludes my prepared statement. I would be happy to answer any questions you may have.

Mr. ROE. I want to thank you, Mr. Administrator, for a concise and precise statement.

The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

I inadvertantly scheduled a meeting in my office for the hour of 2. I am going to have to ask to be excused. I will make every effort to be back to ask the Administrator some questions.

I want to compliment him on an excellent statement. If I do not arrive back, I would like to have permission to submit questions in writing.

Mr. ROE. Without objection, so ordered.

[Subsequent to the hearing, supplemental questions were submitted to Mr. Ruckelshaus by Representatives Stangeland, Oberstar, and Edgar. The questions and responses follow:]

U.S. ENVIRONMENTAL PROTECTION AGENCY,
OFFICE OF EXTERNAL AFFAIRS,
Washington, D.C., February 17, 1984.

Hon. ARLAN STANGELAND,
House of Representatives,
Washington, D.C.

DEAR MR. STANGELAND: Enclosed are the Environmental Protection Agency's responses to the questions you recently submitted to Administrator William D. Ruckelshaus following his testimony before the Subcommittee on Water Resources.

I apologize for the delay in getting our responses to you. If I can be of further assistance, please feel free to contact me.

Sincerely yours,

STEADMAN M. OVERMAN,
Director, Office of Legislative Analysis.

Enclosure.

Question. "On the top of page 2, and elsewhere in your statement, you discuss 'The Administration's Proposals'. During the 97th Congress, the Administration formally transmitted recommended Clean Water Act Amendments to the Congress. This year, no such formal transmittal has been made. In light of this situation, what is the official status of the proposals which you have attached to your testimony?"

Response. The attachment to my November 15, 1983 testimony before the Water Resources Subcommittee represents the Administration's 1983 recommendations for Clean Water Act Amendments.

Question. "The 1976 NRDC Consent Decree, later incorporated into the Clean Water Act, called for EPA promulgation of BAT regulations by 1980. The Decree was modified in 1979, extending the promulgation deadlines into 1980. Subsequent EPA motions to modify the Consent Decree have resulted, I believe, in a requirement for all BAT regulations covered by the Decree to be promulgated by the end of June of next year. What is the current status of this effort?"

Response. The current status of our effort to promulgate the effluent guidelines as covered by the modified Consent Decree (October 26, 1982; August 2, 1983; and January 6, 1984) is as follows: regulations for 20 industrial categories have been promul-

gated; regulations for 8 other industrial categories have been proposed and remain to be promulgated; and regulations for 1 industrial category remain to be both proposed and promulgated/(See attached schedule). Regulations for 9 other industrial categories covered by the Consent Decree have been excluded from regulation under provisions in Paragraph 8 of the consent Decree/(See attached schedule).

STATUS OF THE RULEMAKING SCHEDULES

	Proposal [1]	Promulgation [1]
20 projects are promulgated:		
Aluminum forming	November 1982	September 1983
Coal mining	December 1980	September 1982 [2]
Coil coating (phase I)	December 1980	November 1982
Coil coating (phase II)	January 1983	November 1983
Copper forming	October 1982	July 1983
Electroplating (pretreatment)	January 1978	August 1979
Electrical/electronic components (phase I)	August 1982	March 1983
Electrical and electronic components (phase II)	February 1983	November 1983
Inorganic chemicals (phase I)	July 1980	June 1982
Iron and steel manufacture	December 1980	May 1982
Leather tanning and finishing	June 1979	November 1982
Metal finishing	August 1982	June 1983
Ore mining	May 1982	November 1982 [2]
Petroleum refining	November 1979	September 1982
Pharmaceuticals	November 1982	September 1983
Porcelain enameling	January 1981	November 1982
Pulp and paper	December 1980	October 1982
Steam-electric	October 1980	November 1982
Textile mills	October 1979	August 1982
Timber	October 1979	January 1981
8 projects to be promulgated:		
Battery manufacturing	October 1982	January 1984
Foundries	October 1982	June 1984 [3]
Inorganic chemicals (phase II)	September 1983	June 1984
Nonferrous metals (phase I)	January 1983	January 1984
Nonferrous metals forming	February 1982	October 1983 [3]
Organic chemicals and plastics and synthetic fibers	February 1983	February 1985 [3]
Pesticides	November 1982	November 1984 [3]
Plastics molding and forming	February 1984	September 1984 [2] [3]
1 project to be proposed and promulgated:		
Nonferrous metals (phase II)	February 1984	November 1984

[1] Date signed by the Administrator.
[2] Industries not subject to categorical pretreatment regulations.
[3] Revised schedule, as approved by the court (August 1983, January 1984).

Note. The ink formulation, paint formulation, and adhesive and sealants projects have been excluded under paragraph 8 of the NRDC consent decree and therefore are not listed above.

Question. "For which industries will EPA not have final BAT regulations by June 30, 1984? (1) When will these regulations be promulgated? (2) In each instance, why was the June 1984 deadline not able to be met?"

Response: There are currently five industries which will not have final BAT regulations issued by June 30, 1984. These are: Plastics Molding and Forming; Nonferrous Metals Phase II; Nonferrous Metals Forming; Organic Chemicals and Plastics and Synthetic Fibers; and Pesticides.

The following attachment identifies the current promulgation schedules for these industries and divides these five industries into 2 generic groups to explain why the June 1984 deadline could not be met.

ATTACHMENT—GROUP I—OTHER REGULATIONS TO BE PROMULGATED

(1) Plastics molding and forming, September 1984.
(2) Nonferrous metals forming, October 1984.
(3) Nonferrous metals phase II, November 1984.

Originating as subparts to other major categories (i.e., the Nonferrous Phase I and the Machinery and Mechanical Products Manufacturing) the above categories were

formed so that the Agency's rulemaking emphasis could concentrate on the more environmentally significant problems associated with the major portions of the industry. As a result, separate studies or rulemaking activities weree initiated for 3 categories or portions of these categories. On may 7, 1982 the Court ordered EPA to prepare a schedule for these industries. The Agency developed schedules for these three categories recognizing that studies of these industries were in the early stages of development and that each industrial category regulation remained to be proposed and promulgated. EPA's May, 1982 schedules took into account the need to conduct industry-wide data collection activities for each of these categories before regulations could be proposed. The Agency had not previously studied the Nonferrous Metals Forming industry and therefore had no technical nor economic information; some preliminary data from a limited number of plants in the Nonferrous Metals (Phase II) category did exist, however, the information was inadequate for developing national regulations; and the 1977 and 1978 data gathered on the Plastics Molding and Forming category needed more extensive sampling data and technical verification. Because of additional delays of 4–6 months in the data gathering process, the Agency could not propose and promulgate legally defensible regulations for these industries in conformance with the 1982 court-ordered schedules. As a result, on August 2, 1983 the Court modified its order to establish the above promulgation schedules.

ATTACHMENT—GROUP II—PROPOSED REGULATIONS REMAINING TO BE PROMULGATED

(1) Pesticides, November 1984.[1]

(2) Organic chemicals and Plastic and synthetic fibers, February 1985.[1]

These two categories have been proposed. These are the most complex and controversial industrial regulations on which the Agency is working. As the result of public comments which have been received, the Agency has identified previously unanticipated technical issues which have required additional data collection and analysis.

Pesticides.—In compliance with the Court's October 26, 1982 Order, the proposed regulations for the Pesticides industry were signed by the Administrator in November 1982 (47 FR 53994, November 30 1982). Guidelines for establishing test procedures to analyze the nonconventional pesticide pollutants covered by these regulation were proposed in February 1983 (48 FR 8250, February 10, 1983). This guideline for establishing analytical methods will be combined and promulgated in one rulemaking package with the effluent limitations guidelines and standards. In response to the concerns and request of the public, EPA extended the comment period an additional 30 days to provide time for the public to adequately comment on the proposed regulations and to provide additional data. Many of the comments received have raised fundamental questions with respect to the proposed regulation for both the manufacturing and the formulator/packager segments of the industry indicating a need for EPA to re-analyze the existing data and collect additional data prior to establishing standards. Regulations for this industry address not only the toxic pollutants covered by the Consent Decree by 137 "nonconventional" pesticides being discharged which are not covered by the Decree. The Act requires the Agency to develop BAT effluent limitations for nonconventional pollutants which are discharged in significant amounts in an industrial category. The Court was notified in the June 1983 Affidavit about the potential delay in meeting the Court orderd promulgation schedule. The Court approved the Agency's revised schedule in January, 1984. The Agency has begun to analyze and validate all acceptable new data and review in its entirety the data base underlying the proposed effluent limitations guidelines and standards. Effluent guidelines for the pesticides industry will be promulgated in November 1984.

Organic Chemicals and Plastic and Synthetic Fibers (OPCF).—In compliance with the Court's October 26, 1982 Order, the proposed regulations for the OPCF industry were signed by the Administrator in February 1982 (48 FR 11828, March 21, 1982). The Agency has received over 4,000 pages of comments from the regulated industry, environmental groups, governmental agencies, and citizens. Many of these commenters contend that the existing data base needs substantial improvement. The Court has already been informed that EPA believes that a substantial new data gathering effort is required to supplement the existing data base. Major steps have already been taken to gather the necessary data and sampling activities at 6 plants have been completed. The Agency is currently conducting pre-sampling activities at 4 additional plants and is scheduling 9 more sampling visits to be conducted during

[1] EPA's motion to change the promulgation dates was approved in January 1984.

the next few months. EPA will promulgate effluent guidelines for organic chemicals and plastic and synthetic fibers in February 1985.

Question."Of the regulations which have been promulgated, how many have been challenged in Court, (1) In each instance, on what grounds were the regulations challenged, (2) What is the current litigation status of each of these challenges?"

Response. Eleven of the BAT/PSES/NSPS/PSNS regulations issued under the Consent Decree have been involved in litigation. These include: Timber, Coal Mining, Coil Coating Phase I, Copper Forming, Iron and Steel Manufacturing, Leather Tanning and Finishing, Petroleum Refining, Porcelain Enameling, Steam Electric, Inorganic Chemicals Phase I, and Metal Finishing. Petitions against the Coil Coating Phase I and the Inorganic Chemicals Phase I categories were voluntarily withdrawn; negotiated settlements have been reached for the Coal Mining, Iron and Steel Manufacturing, and the Porcelain Enameling categories. The Steam Electric case was voluntarily dismissed with the Agency agreeing to provide guidance to all EPA Regions. The Timber petition was dismissed after EPA amended the NSPS applicability. Negotiations, involving industry and NRDC, are currently underway for Petroleum Refining; and negotiations between industry and the Agency are continuing for Leather Tanning. More recently, members of the the Copper Forming and Metal Finishing industries have have also filed petitions to review their respective regulations; we do not know if these cases will result in settlement, be dismissed, or be litigated. By and large the petitions for review have raised technical issues posed by the regulations.

The period for filing for judicial review has not expired for some of the other categories, i.e., Aluminum Forming, Coil Coating Phase II, and Electrical and Electronic Components Phase II.

The BPT Electroplating pretreatment standards originally issued under Paragraph 13 of the Consent Decree were also challenged in the Third Circuit. On September 20, 1983, the Court upheld these standards in their entirety. The Ford Motor Company and General Motors are still pursuing a challenge to EPA's denial of a petition to amend the compliance deadline for integrated facilities.

Analysis.—The attached table covers the industrial categories addressed in the Consent Decree for which effluent guidelines have been promulgated and involved in litigation.

EFFLUENT GUIDELINES DIVISION POST PROMULGATION ACTIVITIES, DECEMBER 1983

Projects promulgated	Promulgation signature date	Litigation		Status of settlement
		Date the petion filed	Date of settlement	
Petitions received:				
Coal mining	September/1982	October/1982	August/1983	Negotiated settlement: Agency Reproposal to be prepared by the Agency.
Coil coating (phase I)	November/1982	March/1983	NA	Petition voluntarily withdrawn November/1983.
Copper forming	August/1983	December/1983		Discussions have not started.
Electroplating (pretreatment).	August/1979	1979 (2) [1] 1980 (1) [1]	September/1983	Court upheld regulation on September 20, 1983: Decision covered all 8 petitions that were filed.
Amendment	January/1981	1981 (4) [1]		
Denial of petition to 1979 regulations.	January/1981	1981 (1) [1]		
Inorganic chemicals (phase I).	June/1982	October/1982	NA	Petition voluntarly withdrawn February/1983.
Iron and steel manufacturing	May/1983	August/1982	February/1983	Negotiated settlement: Amendment/Reproposal/ and Interim Final were published in the Federal Register September 29, 1983.
Leather tanning and finishing.	November/1982	March/1983		Negotiations continuing.
Metal finishing	July/1983	October/1983		Discussions have not started.
Petroleum refining	September/1982	November/1983		Negotiations continuing.

Porcelain enameling	November/1982	December/1982	August/1983	Negotiated settlement: Reproposal RMP to be prepared by the Agency.
Steam-electric	November/1982	March/1983	July/1983	Case voluntarily dismissed: Agency agreed to send a memorandum to all EPA Regions—completed July/1983.
Timber	January/1981	June/1982	December/1982	Petition was dismissed after EPA amended NSPS applicability.

[1] Number of petitions filed.

NA = not applicable.

Question. "Of the regulations which have been promulgated to date, to what extent do the regulations set BAT equal to BPT."

Response. The majority of BAT regulations issued are more stringent than BPT. In most cases BAT standards are based on additional technology, reducing water flows, and process changes. A summary of the 19 industrial categories identifying the relative stringency of BAT vs BPT appears on the attached table. This table indicates that 12 of the 19 industrial categories have guidelines where BAT is more stringent than BPT.

BAT STANDARDS FOR CONSENT DECREE INDUSTRIES (PROMULGATED)

Industry	Status	BAT	Comment
Aluminum forming	Final	> =	
Coal mining	do	>	
Coil coating (phase I)	do	>	
Coil coating (phase II)	do	>	
Cooper forming	do	>	
Electroplating	do	NA	Only addresses pretreatment standards.
Electronics (phase I)	do	>	
Electronics (phase II)		NA	RPT-BAT excluded.
Inorganic chemicals (phase I)	do	>	
Iron and steel	do	>	Phase I is equal; Phase II is more stringent.
Leather tanning	do	>	
Metal finishing	do	=	
Ore mining	do	=	
Petroleum refining	do	=	Under litigation—may become more stringent.
Pharmaceuticals	do	=	
Porcelain enameling	do	>	
Pulp and paper	do	>	
Steam-electric	do	>	
Textile mills	do	=	
Timber	do	>	3 subcategories are more stringent.

NA equals not applicable.

Regarding 301(h) (next three questions):

Question. "What is the current status of waiver applications submitted under the 1977 Amendments and the Agency's June 1979 regulations?

Response. The Agency received 70 301(h) applications under the original 1979 deadline and an additional 137 new applications were filed in response to the December 1981 statutory amendments, which extended the application deadline to December 29, 1982.

Responsibility for 301(h) decisionmaking originally was retained by EPA Headquarters, with tentative decisions being signed by the Administrator. Headquarters has made 25 tentative decisions on the 30 largest applications filed under the original statutory deadline. Headquarters also will make the tentative decisions on the remaining 5 of these 30 applicants; these 5 are now undergoing review. Responsibility for 301(h) decisionmaking has now been delegated to EPA's Regional Offices, and all EPA Regions with 301(h) applicants had accepted delegation by June 1983. The

Regions have made 48 tentative decisions and 18 final decisions following delegation.

Of the 73 tentative decisions made Agency-wide, 25 were approvals and 48 were denials. Of the 18 final decisions made, 4 were approvals and 14 were denials. The table below presents a breakdown of these decisions according to whether the application was filed under the original 1979 deadline or the new 1982 deadline. The applications for which decisions have not yet been made are in various stages of the review process.

	Tentative approval	Tentative denial	Final approval	Final denial
1979 applications	22	10	4	1
1982 applications	3	[1] 38	0	[1] 13
Totals	25	48	4	14

[1] Most of these denials were based on State nonconcurrence with the application or because the discharge would be into waters exhibiting freshwater characteristics.

Question. "What has been the result to date of the changes to section 301(h) which were made by section 22 of the 1981 Municipal Wastewater Treatment Construction Grant Amendments?"

Response. The 1981 statutory amendments extended the deadline for filing 301(h) applications to December 29, 1982. As a result, 137 new applications were filed, which are in addition to the 70 applications received under the original statutory deadline.

Agency regulations responding to the 1981 statutory amendments and to the decision in *NRDC* v. *EPA*, 656 F. 2d 768 (D.C. Cir. 1981) were promulgated in June 1982 (47 FR 24918). In addition, building on the June 1982 amendments, simplified requirements, especially for small applicants, were promulgated in November 1982 (47 FR 53666) based on the Agency's experience in implementing the 301(h) program.

Question. "What approximate investment—in terms of time, personnel, and dollars—must the Agency dedicate to evaluating a typical 301(h) application and reaching a decision on whether or not to grant the requested modification?"

Response. Based on our experience with reviewing 301(h) applications, we estimate that the average processing cost per application will continue at the current average of approximately $50,000 in contract costs and to require about one person-year. The average contract costs have been reduced by about one-half from our initial costs for reviewing the first 30 largest applications as a result of streamlining regulatory requirements, increased staff experience, delegations to Regional Offices, and reduced average project size. There may be considerable variation from the average figures for a particular application depending on such things as the size of the discharge, sensitivity of the receiving waters, and complexity of the issues raised. The actual calendar time to complete review of an application depends on whether the application contains all necessary data and whether EPA's decisions are appealed.

We believe that this is an efficient system given our objective to assure effective community participation in the waiver application and review process and standard permit issuance regulatory requirements.

Question. "An April 1981 general accounting office report was highly critical of water quality monitoring techniques being used to assess the quality of our rivers and streams. How would you evaluate current water quality monitoring efforts?

(A) What are the major weaknesses of our current water quality monitoring program?

(B) What more can and should be done at current funding levels?

(C) To what extent do we currently have the necessary detection capabilities, testing protocols, analytical techniques, and quality control in connection with quality monitoring of (1) conventional pollutants, (2) the priority toxic pollutants, and (3) other toxic pollutants?"

Response. The General Accounting Office (GAO) recommended termination of three national stream quality monitoring networks. EPA, other Federal agencies, and States disagreed with this recommendation, since fixed station networks are a valuable part of State and EPA programs to assess the nation's water quality. Nevertheless, we did agree with and have implemented other recommendations in the GAO report.

As you know, most water quality monitoring under the Clean Water Act is carried out by the States, with assistance from EPA. Our ability to conduct national

assessments has been limited by the fact that data and analyses have not been consistent from State to State. Furthermore, State programs have tended to emphasize monitoring of conventional pollutants, and only recently have begun to focus on toxic pollutants and biomonitoring. In addition, we have lacked techniques for developing national estimates that are statistically sound.

Our programs at current funding levels are making improvements in three areas: national assessments of water quality, monitoring needed for program evaluation, and monitoring required in setting water quality-based limits. First, with regard to national assessments, EPA is working with the States to improve the ways States convey their knowledge of water quality to EPA. EPA has recently completed a joint project with the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) to develop uniform reporting procedures that will result in better use of existing data. In regard to statistical estimates, we have completed the Aquatic Life Survey, the first national assessment of water quality to provide statistically sound estimates of water quality. We will also be developing recommendations for longer longer-term improvements in monitoring programs as part of the Deputy Administrator's Task Force on Monitoring. As part of this effort, we will develop a program strategy for water monitoring this spring for consideration by the Agency. Also, with regard to the lack of data on toxics, we have tested an approach to collecting existing data on biological conditions and we have emphasized biological and toxics data collection for the 1984 Section 305(b) report.

With regard to program evaluation, our efforts are to quantify information instead of using existing information which is anecdotal in nature, e.g., "success stories" which do not provide an overall look at the natural effect of control programs. To strengthen our capabilities in this area, we have carried out a study of the water quality effects of a number of construction grant projects. In addition, we will be addressing these needs in the Monitoring Strategy mention above.

Our concerns in setting water-quality based limits, at least for conventional pollutants, are primarily related to a need for better technical assistance for the Regions and States. In addition, in order to help strengthen State and EPA capabilities in the toxics area:

We have issued a policy which encourages the use of biomonitoring and screening techniques as part of an integrated approach to developing water quality-based effluent limitations for toxic pollutants.

We are developing key technical guidance for those steps in the standards-to-permits process where the lack of technical tools is critical. The most important gaps today are in the biomonitoring area, as well as design conditions and toxic pollutant methodologies for wasteload allocations.

We are initiating a more active program of technical assistance not only covering the critical gaps noted above, but also seeking to bring the weaker States up to the technical levels necessary to carry out these programs.

With regard to the specific concern about analytical techniques, the States and EPA have the appropriate equipment and procedures to collect most chemical, physical, and biological data, particularly for conventional pollutants, metals and pesticides on the priority pollutant list. However, States are limited to some extent in their ability to measure some of the other organic chemicals (priority pollutants and others), and the biological effects, both acute and chronic toxicity, associated with some of these chemicals. For instance, only about half of the States can measure levels of the full range of organic chemicals contained on the Section 307(a)(1) priority pollutants list. In many cases, chemicals are toxic at levels below chemical analytical detection limits. In other cases, methods may not yet be sophisticated enough to measure sublethal toxic effects. However, we are concentrating our efforts in these areas and new procedures are being developed and tested that should help fill this void.

Question. "Mr. Ruckelshaus, We note that the Administration included amendments to Section 316(a), the Clean Water Act's thermal discharge variance provision, in its legislative proposal for last year. Section 9 of the proposals which you attached to your testimony likewise would amend the Act's current thermal discharge variance provision. Does this reflect the Agency's judgment that there is now sufficient evidence that heat is not the serious environmental concern Congress once thought it might be, and thus that thermal variances would be made more readily available for new power plants, by allowing them where thermal water quality standards are met by such plants?"

Response. The Agency still considers thermal pollution an environmental problem in certain situations. The thermal variance is intended to give new and existing power plants relief from national effluent limitation guidelines and State thermal standards, provided a balanced aquatic population is maintained. At present no na-

tional technology-based thermal BAT requirements have been promulgated and to our knowledge no technology-based best professional judgment permits have been based on established State water quality standards. Our present analysis is that it is unlikely that future permits will incorporate technology-based thermal requirements based on effluent guidelines or best professional judgment.

Question. "Mr. Ruckelshaus, the administration's proposal includes a suggestion that the word "indigenous" be dropped from the balanced indigenous population test in Section 316(a). Does this suggestion reflect the Agency's judgment that the exact type of "balanced population" of shellfish, fish and wildlife to be protected under Section 301(a) is a State resource management decision and should not be prejudged by Congress in the Act?"

Response. The purpose of the term "indigenous" is to preclude basing 316(a) decisions only on the presence of pollution-tolerant species. EPA has broadly interpreted this term and has not required unduly rigid tests. For example, EPA's draft 316(a) technical guidance manual (distributed in May, 1977) establishes the framework for determining Representative Important Species (RIS) which may include species which are benefitting from the thermal discharge, and that were not historically native to the area. In addition, the appropriate State and federal wildlife authorities are consulted on the RIS list to ensure that the species selected are representative of "indigenous" forms including those species protected by State water quality standards or the Endangered Species Act.

Question. "How does the Agency currently perform the balanced indigenous population test in Section 316(a)? How proximate to the point of discharge is the test applied? Alternatively, for what distance from the discharge point is the test considered to be relevant and applicable?"

Response. In reviewing a 316(a) demonstration the Agency relies on the Representative Important Species (RIS) rationale developed by the applicant in consultation with State and federal wildlife authorities. The RIS serves as the benchmark for assessing thermal impacts on the balanced indigenous populations of aquatic organisms. In most cases, State designated mixing zones which allow a rise in temperature above State water quality standards, determine where the test is applied. In these situations, the balanced indigenous population test applies at the edge of a mixing zone which can vary from feet to several hundred yards from the point of discharge.

Question. "Which States currently have thermal water quality standards?"

Response. All States have thermal water quality standards, which vary in specificity. Thermal standards may apply State-wide; others may use specific (e.g., warmwater or coldwater fisheries; or stream specific). All States have thermal standards for: (1) a maximum temperature not to be exceeded as a result of the impact of the thermal discharge, and (2) a maximum rise in temperature above natural conditions as a result of the impact of the thermal discharge.

Question. "A number of witnesses in our hearings have addressed the special problems faced by "integrated facilties," that is, plants which must comply with two or more sets of BAT and/or pretreatment regulations. Some have testified in support of the position that, for compliance purposes, discharging integrated facilities should have three years after promulgation of the last set of regulations applicable to the facility. Others take the position that EPA's combined wastestream formula is adequate to deal with the problem faced by integrated facilities. Would you please comment on this matter? Would you be willing to work with the Committee in an effort to attempt to appropriately resolve this problem?"

Response. The combined wastestream formula certainly has been one of the more controversial provisions of the General Pretreatment Regulations. Within the Agency, the formula has been the object of lengthy and intense scrutiny and reviews. It also was one of the regulatory provisions challenged in the pretreatment litigation and upheld by the Third Circuit. I believe the combined wastestream formula is a sound and reasonable tool for applying multiple categorical pretreatment standard to integrated industrial facilities.

Under existing law, EPA cannot extend deadlines for compliance with pretreatment standards, and the Agency believes that further delay of compliance dates by integrated facilities is unwarranted and unnecessary. Section 307(b) of the Clean Water Act requires compliance with a categorical standard no later than three years from the date of its promulgation. Therefore, existing law prohibits deferring compliance with pretreatment standards until the last one applicable to an integrated facility is promulgated. Integrated facilities should be treating only compatible wastes in a single treatment system. If that is the case only minor adjustments, if any, to the treatment system would be necessary to achieve compliance with changing standards as new standards for additional compatible wastes become applicable

to the integrated facility. Incompatible wastestreams need to be segregated and treated separately. In any event, the greatest change to a facility's wastestreams will occur when the first standard is applicable to that facility; the greatest reduction in pollutant loading will be from raw discharge down to the level in the categorical standard. As other pretreatment standards become applicable, EPA expects the new limits derived from the combined wastestream formula to be within the range already required to achieve compliance with the first applicable categorical standard.

EPA is aware of the treatment technology relied upon in previous regulations when it promulgates subsequent standards; thus we seek to avoid a significant problem because of staggered promulgation of standards. If commenters believe the Agency has not properly considered the impact of a regulation on an integrated facility, this would be an appropriate area for comment during the rulemaking process of a subsequent standard, and might provide cause for adjusting the proposed standards before their final promulgation.

I will be glad to talk to the Committee further on this issue but I do not believe that the problem warrants any major changes.

Question. "Some have suggested that a new industrial category should be established for integrated facilities. What are your thoughts concerning this proposal?"

Response. I believe that a separate industrial category estabished for integrated plants is unnecessary. As discussed in my previous answer, the combined wastestream formula is an appropriate mechanism for determining discharge limits for such facilities, as it takes into account the mix of processes which are present at a given plant site.

Additionally, it would be impossible to establish a separate category for integrated facilities. American industry is extremely diverse and does not always fit neatly into standard industrial classifications. Steel plants, for instance, perform a number of industrial operations aside from steel. Porcelain enamel manufacturers often engage in plastics manufacturing. Auto manufacturers perform a multitude of operations. Given the extreme diversity of processes performed by most industries, the concept of regulating a whole plant would be a recipe for plant-by-plant regulation. This approach, however, was rejected by Congress under the approach contemplated in the Clean Water Act.

Finally, establishing a separate category for integrated facilities would delay the ongoing implementation of the pretreatment program at a time when program momentum is building.

Question. "To what extent does the Agency have data describing number and variety of plants or facilities which are integrated facilities?"

Response. The Agency has a substantial amount of technical and economical data that describes the number and variety of plants or facilities which are integrated facilities within the specific industrial categories. During a national industry-wide data collection activity the Agency collects data through literature searches, specific plant sampling and analysis, and extensive surveys of the industry via technical questionnaires. Additionally, during the comment period for a proposed regulation the industry may voluntarily submit new data and information. Examples of industries for which the Agency has recognized the existence of plants or facilities as being integrated facilities include the following industrial categories: over 200 for Petroleum Refining; over 200 for Iron and Steel Manufacturing; over 700 for Metal Finishing; over 40 for Aluminum Forming; 25 for Nonferrous Metals; 500 for Organic Chemicals and Plastics and Synthetic Fibers; and 230 for Pulp, Paper, and <: perboard.

Question. "For purposes of Clean Water Act regulatory responsibilities and authority, what status do Indian Tribes have and what role do they play in implementing the Clean Water Act? Where a State in which an Indian Tribe is located has stricter water quality standards than might be required by U.S. EPA, which standards are the Tribe held to?"

Response. Since the Act defines Tribes as "municipalities" they are eligible to receive Section 201 construction grants if they are placed on the States' priority lists. The problem of delegation and authorities under other sections of the Clean Water Act is subject to legal debate as Tribes are not expressly mentioned.

"The respective roles of the Indian Tribes and the states to establish water quality standards for waters lying within tribal reservations is presently at issue in *Pyramid Lake Paiute Tribe* v. *EPA*, No. 82-89 (D. Nev.). There plaintiff has challenged water quality standards adopted by the State of Nevada on the grounds, among others, that the State lacked jurisdiction to set standards for the Truckee River within the Tribe's reservation.

The government's position in the litigation on this issue has not yet been formulated and will require further close consultation among the Department of Justice, EPA and other Federal agencies."

EPA is also developing an Agency policy which will address a variety of related issues regarding the administration of reservation programs. This policy is expected to call for an enhanced Tribal role in decisions and programs affecting the quality of reservation environments.

Question. "In your testimony, you mention the recent Third Circuit decision denying EPA's legal authority to issue fundamentally different factor variances. Does the Agency intend to appeal the Third Circuit's decision? What impact will the decision have on Agency programs? How broad is the reach of the decision, in your opinion? To what extent has the Agency, in the course of implementing the Act since 1972, employed fundamentally different factor variances in implementing the Clean Water Act? How many variances have been issued? For what types of pollutants and which industrial categories? (Please provide a detailed response for the record)?"

Response. The Agency believes that the fundamentally different factors (FDF) determination procedure is an appropriate mechanism to provide a safety valve for those facilities that may not be able to meet the categorical pretreatment standard limitations applicable to such facilities due to their unique factors. The mere availability of FDF determinations has been an important safety-valve which has been instrumental in defending national regulations against judicial challenges. In some instances courts have expressly relied on the FDF determination mechanism to uphold the national rule, *see*, e.g., *Kennecott Copper Corp.* v. *EPA*, 612 F.2d 1232 (10th Cir. 1979); *AISI* v. *EPA*, 526 F.2d 1027, 1061 (3rd Cir. 1975); *Weyerhaeuser Co.* v. *Costle*, 590 F.2d 1011, 1040–1041 (D.C. Cir. 1978).

The United States Court of Appeals for the Third Circuit stated that "FDF variances for toxic pollutants are forbidden by the (Clean Water) Act." *NAMF* v. *EPA*, 719 F.2d 624 (1983). Therefore, EPA cannot grant a request for an FDF determination for a toxic pollutent regulated in a categorical pretreatment standard. However, since the opinion only addressed the availability of FDF determinations for toxic pollutants, such determinations for conventional and non-conventional pollutants regulated in a categorical standard remain available for facilities subject to pretreatment limitations. EPA will amend 40 CFR § 403.13 to comply with the Court's opinion in the near future.

EPA requested that the Solicitor General seek Supreme Court review of the Third Circuit's FDF decision. The Solicitor General has agreed to seek a review of this decision. The Chemical Manufacturers Association has filed its own petition seeking Supreme Court review.

Until the Clean Water Act can be amended to confirm the Agency's authority to make FDF determinations for toxic pollutants, or the Supreme Court remands the Third Circuit decision, EPA has suggested another mechanism to address those existing indirect dischargers who would previously have been eligible to apply for FDF determinations from pretreatment standards. This mechanism has been discussed in the preamble of every effluent guideline promulgated since the date of the Court's decision. The alternative mechanism involves a rulemaking petition to the Administrator by the indirect discharger or other affected party to examine the factors and determine whether the pretreatment standard is properly applicable to the specific case or should be revised. The Agency will consider these rulemaking petitions and determine whether a rulemaking should be initiated.

At present the Agency does not have exact data available on the number of indirect dischargers that have applied for FDF determinations. Before the decision EPA had received approximately 50 applications, but this does not include those received for review by delegated States. However, we expect few applications to be submitted in the future because the Third Circuit decision limits the Agency FDF authority to non-toxic pollutants only. Few of the categorical standards for indirect dischargers contain limits for non-toxic pollutants.

Since the promulgation of effluent limitations guidelines regulations (guidelines) and the implementation of these guidelines in NPDES permits, there have been 53 FDF determination requests for direct dischargers submitted to EPA Headquarters for approval; there have been four approved, 14 denied, 16 withdrawn and 19 pending requests.

The information requested on the four FDF determination requests for direct dischargers that have been approved appears on the next page.

Facility	Date of approval	Point source category	Pollutants
Southern California Edison:			
Huntington Beach Generating Station.	February 22, 1977	Steam Electric Generating (40 CFR & 423.32(b)(6) (1974)—Boiler Blowdown.	Total Suspended Solids, Oil & Grease, Total Iron, Total Copper.
San Onofre Nuclear Generating Station.	do	Steam Electric Generating (40 CFR & 423.32(b)(6) (1974)—Boiler Blowdown.	Total Suspended Solids, Oil & Grease, Total Iron, Total Copper.
Birdsall Sand and Gravel, Oral, S. Dak.	July 10, 1978	Construction Sand and Gravel Subcategory of Mineral Mining and Processing.	Total Suspended Solids.
Freeport Chemical Co., Uncle Sam, La.	June 3, 1981	Phosphate Subcategory of Fertilizer Manufacturing.	Total Phosphorus, Fluoride, Total Suspended Solids.

Question. "The Committee has received a great deal of testimony concerning the alleged unworkability of EPA's removal credit approach. Is the question of removal credits, while logically sound, too administratively complex to be meaningfully implemented?

Response. EPA believes that the removal credit approach is fundamentally sound. Indeed, a recent court decision has upheld the Agency removal credits regulations against allegations that they are unworkable. However, EPA recognizes that some simplification of the process would be appropriate.

EPA is taking measures to simplify the process which allows POTWs to adjust categorical pretreatment standards to reflect the reduction in toxic pollutants achieved at municipal treatment facilities. The Agency published proposed changes to the removal credits provision of the General Pretreatment Regulations in September, 1982. These changes include several measures which would make it easier for POTWs to qualify for the issuance of removal credits.

First, the Agency proposed to expand the range of sampling methods and analytical protocols permitted for demonstrating pollutant removal at POTWs. Second, the Agency proposed to eliminate a complex adjustment to removal rates for combined sewer overflows and bypasses. The Agency has also proposed to allow the use of historical and other data where sufficient data is not available for calculating removal rates. As these changes show, the Agency is committed to streamlining the removal credits provision. A final rule on removal credits should be published in the Federal Register in the near future.

The Agency is committed to implementing the pretreatment program and the removal credit provision. The Agency has conducted POTW workshops and seminars which explain the pretreatment program, including removal credits, and is planning guidance materials for developing and approving removal credits. The removal credit provision will be a topic for discussion in the Pretreatment Implementation Review Task Force.

Question. "On page 4 of your statement, you mention an EPA study of construction grants issues. Would you outline in more detail the scope and purposes of the study and schedule for its completion?"

Response. Given the changes in construction grants eligibilities and the federal share that begin in FY 1985 and the termination of the current authorization for the grants program at the end of FY 1985, the Agency believes it is prudent that we begin to examine feasible alternatives for the construction, proper operation, and eventual replacement of needed municipal wastewater treatment facilities. In initiating this study, we feel that critical consideration must be given to the appropriate federal role in obtaining expeditious municipal compliance and long-term local self-sufficiency.

Along these lines, we feel that viable federal alternatives (which may include non-financial as well as financial components) must not only represent an effective and wise-use of federal resources, but must also provide a suitable environment for fostering local initiatives in providing needed services. The issue areas we expect to address include local self-sufficiency (financial, managerial, technical and institutional requirements and competing infrastructure needs), State programs (existing and planned) for assisting municipalities, and alternative federal funding, compliance and technical assistance strategies that might fill the gap for identified unmet needs and address specific problem areas.

We expect to publish a Federal Register notice in February 1984 to solicit public comment on the Agency options and the study. We will keep your staff informed of

progress made on this study and its recommendations, which we expect to complete by November 1984.

Question. "One of the recommendations of the Administration calls for a change in the conflict of interest requirements. Would you discuss the kinds of difficulties that have led to this recommendation, including examples of which you may be aware?"

Response. EPA has found that some States have been unable to meet the current statutory conflict of interest requirement in Section 304(i)(2) of the Clean Water Act, which is a prerequisite to EPA approval of a State NPDES program. State statutes sometimes require a State Board to be represented by the industries or municipalities they must regulate as board members. Historically, this has been a problem in the review of many State programs.

Although most States apparently can meet the current requirement, at least two States, Oklahoma and Texas, cannot now be approved by EPA to run the NPDES program since they cannot ensure that all board members will not have a conflict of interest. By statute, the Oklahoma Water Resources Board must consist in part of industrial and agricultural representatives. The Texas Railroad Commission is selected through State-wide elections, and often included persons who would fall within the current prohibition. In addition, compliance with the conflict of interest requirement has become a problem in already approved NPDES States.

The Administrator's Clean Water Act proposed amendment, which tracks the current Clean Air Act provision, would still prohibit a majority of Board members from having a conflict of interest. In addition, any member with a conflict must disclose that conflict. This requirement, coupled with the existing statutory safeguard authorizing EPA to object to a proposed State permit, should minimize the chance that a State Board member will give particular permit applicants favorable treatment.

Question. "On page 19, you mention a nonpoint source Report to Congress. Would you describe the scope of this report, its schedule for submission and to which committees you are submitting the report?"

Response. In the House Report on the FY 1984 Appropriations Act for the Environmental Protection Agency, EPA was requested to "analyze the extensive body of past research in nonpoint source problems to identify and rank the highest payoff problem areas and submit a report by January 1, 1984, outlining specific strategies and approaches recommended for addressing nonpoint sources in a cost-effective manner."

The report was submitted on January 23, 1984. Copies were sent to the following Committees: Senate Environment and Public Works, Senate Appropriations, House Public Works and Transportation, and House Appropriations. We will be glad to share the Report with other Committees and individuals as requested.

Question. "Some have suggested that innovative treatment technologies in the pretreatment area should be treated as they are for direct dischargers, that is, additional time for compliance where better results and more efficiency results from these methods. We even heard examples in the electroplating/metal finishing area. Would you give us your views on this proposal?"

Response. The Agency is not currently pursuing any change that would allow an innovative technology delay for indirect industrial dischargers. We are aware of only one municipality, one State and three industries which have expressed any interest in this possibility. However, it may be a subject of discussion in the Pretreatment Implementation Review Task Force, which met for the first time February 14 and 15, 1984.

Question. "You discuss a new task force on pretreatment. Their input could be helpful to the committee's work as well as to EPA as you carry out the pretreatment program. Is there a schedule for their recommendations?"

Response. The Agency has established the Pretreatment Implementation Review Task Force. The purpose of the Task Force is to identify issues and seek solutions to problems experienced by municipalities, industries and States in the implementation of the program. The Task Force has been approved by the General Services Administration.

The first meeting of the task force was held February 14 and 15, 1984. The Task Force has been established for an 11 month period. Initial recommendations are expected this Summer with additional recommendations due by the end of fiscal year 1984.

Periodic reports will be issued on the Task Force activities and we will welcome any specific comments and questions you may have on the Task Force proceedings.

Question. "The 1981 amendments contained changes in municipal compliance dates and the definition of secondary treatment, among others. The EPA has not yet

announced policy decisions in carrying out these changes. What has delayed getting the municipal compliance policy and secondary treatment regulations out? Also, what is your schedule to have these out?

Response. Municipal compliance—Final publication of the National Municipal Policy was delayed for a number of reasons: 1) the need for a thorough internal policy review by the new leadership of the Agency; 2) the desire to resolve the redefinition of secondary treatment so that municipalities would have more certainty regarding their applicable effluent limits; and 3) the importance of having implementation guidance available for use by the Regions and States. The proposed redefinition was published in the November 16, 1983 Federal Register, and the guidance is now ready for distribution. The National Municipal Policy was published in the Federal Register on January 30, 1984. Guidance for implementing the policy will be distributed during the week of February 13, 1984.

Secondary Treatment—Work had already begun on development of the regulations to redefine secondary treatment prior to the 1981 amendments to the Act. As a result of the 1981 amendments, additional issues had to be addressed in the regulations which required the undertaking of a large data collection and analysis effort. Daily monitoring data on over 300 POTWs was collected and statistically analyzed to support the conclusions in the proposed secondary treatment regulations. These proposals were published in the November 16, 1983 Federal Register. The public comment period extends to January 16, 1984, and the regulations are expected to be published in September 1984.

Question. "Testimony presented earlier in these hearings made the point that implementing Federal categorical pretreatment standards in lieu of the City of Chicago's (Metropolitan Sanitary District of Greater Chicago) existing pretreatment program "could result in a net reduction in control reuirements for industrial facilities at a substantially greater program cost for operations." If this situation is true with respect to Chicago, and other publicly owned treatment works, wouldn't the most environmentally responsible and fiscally sound public policy be to allow the stricter and more cost effective locally established program to be implemented?"

Response. The General Pretreatment Regulations clearly affirm the authority of Publicly Owned Treatment Works (POTWs) to establish local pretreatment limits more stringent than the categorical pretreatment standards where necessary. Furthermore, the regulations require POTWs to establish specific limits to control industrial discharges which jeopardize public health or safety, interfere with the operation of the POTW or cause violation of applicable environmental controls, such as NPDES permit limits or water quality standards. Categorical standards do not supersede these local limits when the local limits are more stringent, therefore, "net reductions in control requirements" will not occur. It is theroretically possible that a municipality could withdraw its local limits (which are more stringent than categorical standards) and cause a net reduction in control requirements. This situation is unlikely because local limits may still be required to protect against pass through, inteference or prevent a water quality problem. If the stringent limits set by the municipality are truly necessary, then local limits in addition to categorical standards will be needed to satisfy the 403 regulations.

The national pretreatment program is now at a critical point. More than 400 POTWs have approved local programs in place. Many more are well along in developing approval programs. Nineteen technology-based categorical guidelines containing pretreatment standards have been issued and eight more are under development. Any major shift away from the present program would raise serious questions of fair treatment and undoubtedly would delay the implementation of a national effort to control toxic industrial discharges to municipal sewerage systems by at least two years.

The Agency has, however, taken measures to increase the flexibility of the national pretreatment program. We will publish shortly final regulations which streamline the procedure by which POTW's can modify categorical pretreatment standards to reflect the removal of toxic pollutants which is achieved at the municipal treatment facility. I have formed the Pretreatment Implementation Review Task Force, which includes representatives of States, municipalities, industries, the environmental community, and EPA. I hope that this task force will resolve at least some of the concerns that we have heard about the program.

U.S. ENVIRONMENTAL PROTECTION AGENCY,
OFFICE OF EXTERNAL AFFAIRS,
Washington, D.C., February 17, 1984.

Hon. JAMES L. OBERSTAR,
House of Representatives,
Washington, D.C.

DEAR MR. OBERSTAR: Enclosed are the Environmental Protection Agency's responses to the questions you recently submitted to Administrator William D. Ruckelshaus following his testimony before the Subcommittee on Water Resources. Please be advised that we consider these to be responses to technical questions regarding H.R. 4037, and they are not to be construed as administration support for this bill.

I apologize for the delay in getting our responses to you. If I can be of further assistance, please feel free to contact me.

Sincerely yours,

STEADMAN M. OVERMAN,
Director, Office of Legislative Analysis.

Enclosure.

Question. "H.R. 4037 requires States to submit certain information, and a completed implementation plan, within 270 days of enactment. Is this timeframe adequate for most States. How should we handle those States which cannot meet that deadline? Approximately how many States, in your judgement, would be able to meet the 270 day deadline?"

Response. We believe that 270 days is more than adequate for States to submit the information required in Section 319(b)(1)(B). We believe that those States with identified NPS problems could submit a plan in 270 days.

Question. "How long does EPA need to review these plans? H.R. 4037 now provides 6 months. Is this adequate? Is it too long?"

Response. The 6 months provided by H.R. 4037 is adequate for EPA to review completed State implementation plans.

Question. "What agencies, within USDA, have been involved or would be included in, future interagency agreement? What other Federal agencies will be, or should be included in similar agreements?"

Response. The agencies within USDA which have been involved, or would be included, in future interagency agreements are: the Agricultural Research Service (ARS), the Agricultural Stabilization and Conservation Service (ASCA), the Economic Research Service (ERS), the Extension Service (ES), the Farmers Home Administration (FHA), the Forest Service (FS) and the Soil Conservation Service (SCS).

Other Federal agencies which could be considered for similar agreements are:

(a) The Department of the Interior: The Office of Surface Mining (OSM), the Bureau of Mines (BM), the Bureau of Indian Affairs (BIA), the Bureau of Reclamation (BR), the National Park Service (NPS), the Fish and Wildlife Service (FWS) and the Geological Survey.

(b) The Department of Housing and Urban Development: The Federal Housing Administration (FHA).

(c) The Department of Transportation: the Federal Highway Administration (FHA), the Federal Aviation Administration (FAA), the Federal Railroad Administration (FRA) and the Urban Mass Transit Administration (UMTA).

(d) The Department of Commerce: the National Oceanic and Atmospheric Administration (NOAA).

(e) The Tennessee Valley Authority (TVA).

(f) The Appalachian Regional Commission (ARC).

Question. "What timeframes should we consider, what measurements should we use to evaluate a nonpoint source program? Congress has so far generally given the Clean Water Act 5-year reauthorizations; but it will most probably take longer to measure improvement in water quality. What should a realistic timeframe for a nonpoint source control program (the State of Wisconsin, for instance, uses a 20-year program), and by what shorter-term (4-5 years) criteria should we evaluate the program, for administrative and legislative purposes?"

Response. In your question regarding timeframes for evaluating nonpoint source programs, you correctly note that it takes a long time to measure improvements in water quality. Yet Congress must have some way to evaluate the effectiveness of nonpoint source programs in a shorter timeframe for administrative and legislative purposes.

Experiences in the State of Wisconsin's Nonpoint Source Water Pollution Abatement Program indicate that it takes up to 9 years for a nonpoint source watershed

implementation project to be completed, with projects including the following implementation states:

	Time (in years)
a. Project selection, watershed evaluations, and development of a detailed implementation plan	1
b. Landowners enter into cost sharing agreements for implementation of best management practices	2
c. Best management practices installed	6
	9

Based on Wisconsin's experience, within 5 years of initiation of an implementation project, one should be able to obtain quantitative data on the number and type of best management practices implemented in particular projects. There should be some limited data on WQ effects within 5 years, but more significant and meaningful data on the WQ effects will probably require 7 years.

As a point of clarification, the State of Wisconsin estimates that it will take 25 years to complete implementation of best management practices in 120 watersheds in the State. As discussed above, each of these watershed projects takes about 9 years to complete.

Question. "What information will we need four years from now, that we should begin gathering in this initial program? It is critically important that we view this first four years as not only an implementation program, but also as a means to fill in the gaps in our present knowledge so that whatever program is enacted in 1988 will be fully effective."

Response. The Agency currently has mechanisms to collect information on NPS. If the proposed amendment was enacted, 4 years from now we could have the following information available:

(a) Verified, prioritized lists, by States, of waters where designated uses are impaired or threatened by NPS pollutant contributions.

(b) Specific implementation schedules, including starting and ending dates and resource estimates, for abating such NPS pollution.

(c) Hard, baseline data on water quality in selected portions of such waters before implementation of NPS controls so that the change in water quality after implementation of controls can be clearly and conclusively evaluated.

(d) The successes and limitations of different types of institutional arrangements and management approaches (e.g. technical assistance, education, Best Management Practices (BMP) demonstration, regulation, cost sharing) in achieving BMP implementation with respect to different types of NPS pollution (e.g. agriculture, silviculture, urban runoff).

(e) Clear documentation of initial water quality changes/improvements in selected instances where States or localities have had control programs in place long enough to produce such changes/improvements.

(f) Clearly and fully documented costs for the BMPs utilized in connection with the water quality changes/improvements referenced in (e) above so that we can begin to associate control costs with water quality improvements.

With regard to the draft Nonpoint Source Control Policy (next 6 ques.):

Question. "You state the Agency will use existing resources to implement this policy. Which are these? How are these resources presently committed, and what other activities, if any, will have to be curtailed in favor of nonpoint source control activities?"

Response. The existing resources are contained in the Water Quality State Programs Management budget. These resources are associated with overall State grants and water quality management oversight, planning and implementation, including nonpoint source control.

We foresee no need to curtail other activities. The Administrator allocated resources from the 1984 Congressional add-on for nonpoint source (NPS) control activities. With these resources, the Agency has prepared the NPS report requested by Congress (submitted January 1984), completed development of a proposed EPA NPS policy, is revising the interagency agreement on NPS control with the Department of Agriculture, is completing the Nationwide Urban Runoff Program final report, is overseeing NPS projects funded under § 205(j), and is providing technical assistance to States, localities, and other Federal agencies working on NPS control program development.

Question. "At the State level, what activities currently performed under Secs. 106 and 205(j) are most likely to be curtailed in order to comply with the Agency's new

Policy and Program? What will be the impact of this curtailment on ongoing State programs?"

Response. To the extent that such curtailment is necessary, the States will delay problem assessments and control program development and implementation for lower priority water bodies. Curtailment of major point source control activities, primarily permitting and enforcement, will not be necessary.

Question. "How many States have not yet submitted adequate information called for by the March 31, 1984 deadline? How many will, in your estimation, not be able to meet that deadline?"

Response. As a point of clarification, the deadline for submission of the 1984 305(b) reports has been extended from March 31, 1984 to June 1, 1984. Most States have not yet submitted the information called for by Section 305(b) of the Clean Water Act.

EPA issued guidance in September 1983 to States on information requested in the 1984 305(b) reports (EPA Office of Water Regulation and Standards, "Guidance: 1984 State Section 305(b) reports"). This guidance calls for the State's to report more information than they have in the past on nonpoint source pollution. It is likely that only a limited number of States will be able to provide a detailed list of water bodies impacted by nonpoint sources and needing implementation of additional controls. We anticipate that the remaining States will submit information of varying quality and EPA will need to continue to work with those States to improve the identification of water bodies impacted by nonpoint source pollution.

Question. "How many States will not readily be able to develop a nonpoint source Pollution Management Program? (This question obviously relates to the ability of States to comply with the requirements of proposed legislation.)"

Response. We expect that the States which have identified their NPS problems will readily develop a program if proposed legislation is enacted. Many States have identified nonpoint sources as a major priority water pollution control problem, and have already completed a substantial amount of the problem identification and planning work necessary to comply with proposed Pollution Management Program requirements. States not readily able to meet proposed requirements will, most likely, be those where nonpoint sources have not been perceived to be a priority problem compared to remaining major point source problems.

Question. "Are authorities under the existing Act adequate to assure participation in this new initiative, absent new resource incentives to States? How many States do you anticipate will participate?"

Response. Yes, authorities under Sections 106 and 205(j) are adequate. EPA has the authority to negotiate a State's proposed program to ensure that a reasonable portion of the State's 106 and 205(j) allocations are devoted to nonpoint source activities.

Question. "Can you accomplish the goals of 304(k) with existing resources?"

Response. We can negotiate or renegotiate the necessary interagency agreements over time. We can achieve that with existing resources but it might be necessary to extend the implementation period over several years.

U.S. ENVIRONMENTAL PROTECTION AGENCY,
Washington, D.C.

Hon. ROBERT W. EDGAR,
House of Representatives,
Washington, D.C.

Dear Mr. Edgar: Enclosed are the Environmental Protection Agency's responses to the questions you recently submitted to Administrator William D. Ruckelshaus following his testimony before the Subcommittee on Water Resources.

If I can be of further assistance, please feel free to contact me.

Sincerely yours,

GREGG WARD,
Director, Office of Congressional Liaison.

Enclosure.

Question. EPA's present rules contain a complex mechanism (40 CFR 403.7) which allows the Agency to grant "removal credits" to an industrial discharger to reflect that portion of treatment done by a POTW on a given industrial discharge regulated by categorical pretreatment standards. In theory, this should prevent duplicate treatment by the industry and the POTW. How many POTW's have applied for "removal credits"? How many applications have been approved? What improvements,

either administrative or legislative, could be made in the "removal credits" process to help ensure that unnecessary duplicate treatment is not required?

Response. EPA is taking measures to simplify the process which allows POTWs to relax categorical pretreatment standards to reflect the reduction in toxic pollutants achieved at municipal treatment facilities. The Agency published proposed changes to the removal credits provision of the General Pretreatment Regulations in September, 1982. These changes include several measures which would make it easier for POTWs to qualify for the issuance of removal credits.

First, the Agency has expanded the range of sampling methods and analytical protocols permitted for demonstrating pollutant removal at POTWs. Second, the Agency has eliminated a complex adjustment to removal rates for combined sewer overflows and bypasses. The Agency has also allowed the use of historical and other data where sufficient data is not available for calculating removal rates. The Agency is considering another change—extending the effective date of the removal rates. By making removal rates effective for the life of the POTW permit, the POTW and its industrial users will have the same pretreatment standards for at least five years. As these changes show, the Agency is committed to streamlining the removal credits provision.

The Agency is also committed to implementing the pretreatment program and the removal credit provision. The Agency has conducted POTW workshops and seminars which explain the pretreatment program including removal credits and is planning guidance materials for developing and approving removal credits.

In reply to your question about the number of POTWs which have applied for removal credit authority, we do not have ready access to this information, since these applications are reviewed by States which have approved pretreatment programs or by EPA Regional Offices. However, Region V in Chicago reports that they have received two removal credit applications and are aware of 38 other POTWs which are preparing applications. To the best of our knowledge, no POTW has yet received approval to grant removal credits.

It should be noted that even where removal credit approval procedures are streamlined, there are many POTWs, especially those involved in some form of sludge utilization program, which are not likely to grant removal credits for heavy metals and other pollutants which might adversely affect sludge quality and thereby restrict the POTW's sludge disposal options.

Question. The Third Circuit Court of Appeals has struck down the "fundamentally different factors" variance of 40 CFR 403.13. How does EPA plan to operate the categorical pretreatment program without some means to allow for conditions that are fundamentally different from those considered during the writing of the general regulations.

Response. The Agency believes the procedure to determine the fundamentally different factors (FDF) variance is an appropriate mechanism to provide a safety valve for those facilities that may not be able to meet the categorical pretreatment standard applicable to such facilities due to their unique factors. The U.S. Court of Appeals for the Third Circuit, however, remanded to EPA the FDF determination provision in the General Pretreatment Regulations (40 CFR § 403.13). The Court stated that "FDF variances for toxic pollutants are forbidden by the [Clean Water] Act." Therefore, EPA cannot grant a request for an FDF determination for a toxic pollutant regulated in a categorical pretreatment standard. However, since the opinion only addressed the availability of FDF determinations for toxic pollutants, such determinations for conventional and non-conventional pollutants regulated in a categorical standard remain available for facilities subject to pretreatment limitations. EPA will amend 40 CFR § 403.13 to comply with the Court's opinion in the near future.

Until the Clean Water Act can be amended to confirm the Agency's authority to make FDF determinations for toxic pollutants, EPA has another mechanism to address those existing indirect dischargers who would previously have been eligible to apply for FDF determinations from pretreatment standards. This mechanism has been discussed in the preamble of every effluent guideline promulgated since the date of the Court's decision. The alternative mechanism involves a rulemaking petition to the Administrator by the indirect discharger of other affected party to examine the factors and determine whether the pretreatment standard is properly applicable to the specific case or should be revised. The Administrator will consider these rulemaking petitions and determine whether a rulemaking should be initiated. If rulemaking is initiated, specific categorical standards could be issued for the specific facility as a separate subcategory. This mechanism involving a petition for rulemaking has always been available, but in the past EPA attempted to deal with such requests through FDF determinations.

The FDF determination regulations for direct dischargers, which are contained in 40 CFR Part 125, Subpart D were not affected by the Court's decision and still allow FDF determination requests for toxic, conventional and non-conventional pollutants. However, these provisions have been challenged, on similar grounds, in the U.S. Court of Appeals for the District of Columbia Circuit.

Question. Industry representatives have asserted to me that E.P.A.'s definition of pretreatment of pollutants which "pass through" a waste treatment plant (under Section 307 of the Clean Water Act, 40 CFR 403.3(n)) effectively guarantees that industry must duplicate a P.O.T.W.'s treatment. This is said to be the case under proposed Pesticide Effluent Guidelines (Federal Register Nov. 30, 1982, p. 54004) and proposed Plastic Industries Effluent Guidelines (Federal Register, March 21, 1983, p. 11841). Can you comment on the justification for E.P.A.'s definition of "pass through".

Response. The Third Circuit Court of Appeals, in its decision in the pretreatment litigation (*NAMF et al.* v. *EPA*, Nos. 79-2256, September 20, 1983), remanded to the Agency the regulatory definition of the term pass through (40 CFR § 403.3(n)). EPA had conceded that the challenged definition was promulgated without adequate notice and opportunity to comment. Thus, the Court remanded the definition on those procedural grounds, and declined to substantively comment on the definition. In accordance with this decision, EPA will publish a Federal Register notice announcing the suspension of the existing pass through definition. The Agency will then propose a new definition for comment, and subsequently promulgate it in final form.

Section 307(b)(1) of the Clean Water Act specifically prohibits the discharge of any pollutant that "passes through" a POTW. EPA's General Pretreatment Regulations, in implementing this statutory requirement, therefore included a general prohibition against pass through (40 CFR § 403.5(a)), and language defining what would constitute a pass through violation (40 CFR § 403.3(n)). This definition did not require industrial users discharging into POTWs to duplicate a POTW's treatment. A pass through violation would result only where an industry discharged a pollutant through a POTW into navigable waters in quantities that caused a violation of any requirement of the POTW's NPDES permit. In any event, most POTWs are not designed to remove toxic pollutants, whereas in contrast, pretreatment systems operated by industrial users of POTWs are designed to remove the toxic pollutants in that industry. Whatever removal is obtained by POTWs for toxics is only incidental to the POTW's treatment capability.

Question. The proposed pretreatment standards for the organic and plastics industries do not require pretreatment for toluene because POTWs adequately treat this material (Federal Register, March 21, 1983, p. 11853). Why then do the pretreatment standards for the pesticide industry require 99 percent pretreatment on the same chemicals?

Response. The proposed pretreatment standards for the pesticide industry and the organic chemicals plastics and synthetic fibers (OCPSF) industry were developed through independent analyses of the data from each industry. Pretreatment standards less stringent than direct discharge standards were proposed for toluene in the pesticides industry because of its use as a solvent in that industry and the resulting possibility that it could be discharged in very high concentrations. Pretreatment standards for toluene were not proposed for the OCPSF industry because our analysis indicated that POTWs could adequately control this pollutant.

The selection of pollutant parameters for pretreatment standards was based on information available at the time that these regulations were proposed. Since proposal, the Agency has been gathering additional data related to toluene as well as to other toxic pollutants for use in our analysis for final regulations. We will be reassessing the selection of pollutant parameters for both industries to ensure that we develop regulations which are consistent and reflect the pollutants of concern and the performance of treatment technology within each industry.

Question. Turning to the subject of groundwater protection, as you may know, I have introduced legislation on this subject in the form of a bill, H.R. 565, which would create a national groundwater commission. The commission bill now has been attached as an amendment H.R. 2867 the RCRA reauthorization act which recently passed the House. The 19-member commission would assemble and coordinate basic information on groundwater and make recommendations to Congress and the federal and state agencies on measures needed to adequately protect this vital resource. In testimony on May 26, 1982, E.P.A. Assistant Administrator for Solid Waste and Emergency Response Rita Lavelle testified that the groundwater commission was a "good objective but one that is already being effectively addressed." Ms. Lavelle then explained, "The Agency has determined that a groundwater policy is required,

and this policy will include a review of major regulatory activities to insure that federal regulations are properly protecting groundwater . . . ." However, the E.P.A. has been promising to produce a groundwater policy since 1981, and still has not done so.

My question is what has the E.P.A. been doing, and what is the Agency doing now, on the broad issue of groundwater protection? Also, would it not, in fact, be helpful to the agency to have the recommendations of a broad-based commission on a sound, comprehensive policy to protect groundwater? (It should be noted that it has always been my intention that the work of a groundwater commission should complement, rather than hamper or delay, the work the E.P.A. is doing to produce a policy on this seemingly intractable issue.)

Response. With respect to your proposal of a national ground-water commission, part of your motivation appears to be concern about EPA's Ground Water Protection Strategy. I can give you Mr. Ruckelshaus' personal assurance that our efforts in this area are coming to fruition in the very near future. In fact, we expect to start briefing Congressional staff shortly. In this context, I would suggest that the Congress assess our Strategy and the public reaction to it to decide whether a commission would be worthwhile—commissions can sometimes be very useful in developing a national consensus, but all too often just produce voluminous unread reports. Of course, if a ground-water commission is established, EPA will do everything possible to help it in its work.

Mr. ROE. The gentleman from Louisiana.

Mr. BREAUX. Thank you very much, Mr. Chairman.

I apologize for not being able to be here this morning.

I was particularly interested in your testimony. It is incredibly extensive—22 pages, plus about 15 pages of attachments. A great deal of work has gone into it.

However, I cannot find anything on my favorite section, section 404. Is it not high enough in importance to have made the statement?

Mr. RUCKELSHAUS. No; it is a very important section, Mr. Breaux.

Mr. BREAUX. Why wasn't it mentioned at all in the testimony?

Mr. RUCKELSHAUS. Well, we are not making any recommendations for changes in that section. I did testify on that in the Senate. I would be glad to try to respond to any questions that you or other members of the committee might have about section 404.

Mr. BREAUX. What did you say over there?

Mr. RUCKELSHAUS. The same thing I just told you. We are not making any recommendations for changes. There were a number of questions about it which I responded to.

My basic view on 404 is that we are having some problems, as I think you heard this morning from the Assistant Secretary of the Army, with some responsibilities in this area.

Mr. BREAUX. I missed that.

Mr. RUCKELSHAUS. In implementing that section. I don't believe those are problems that cannot be overcome if both agencies, in fact, all the agencies with responsibility for some administration of 404, work cooperatively together, and do the best we can to resolve whatever differences we have.

It is a difficult task to give an agency like the corps of engineers and an agency like EPA joint responsibility for the administration of a sensitive statute or section like section 404. But as I say, I do believe that whatever differences we have can be worked out and ought to be worked out between the two agencies in order to make this section of the statute function properly.

Mr. PACKARD. Would the gentleman yield, please?

I think the gentleman may not be aware that the entire presentation this morning by the Assistant Secretary Gianelli was on section 404.

Mr. BREAUX. That is a different department, right?

Mr. PACKARD. I didn't understand.

Mr. BREAUX. I appreciate the fact that the corps said something about it. But I am disappointed EPA did not say anything about it. Their role in it is quite extensive and the conflict between the two is one of the problem areas for many.

A principal area of disagreement is between EPA's role and jurisdiction and Gianelli's position with regard to the corps.

Mr. EDGAR. Would the gentleman yield?

I did sit through most of this morning's presentation. There was one question that was raised this morning that we should get some clarification on. That is they showed the whole process of procedures for 404, including EPA's right to veto a particular application. And testimony this morning indicated there was only one veto by EPA that they could remember.

Is that your understanding?

Mr. BREAUX. Is this out of my time?

Mr. RUCKELSHAUS. I think that is right, Mr. Edgar. That is my understand.

Mr. EDGAR. And if the gentleman would yield further, there was at least in the tone of the statement this morning the strong feeling, at least that I received, that most of the problems with the process of 404 were interagency problems, and administrative and regulatory problems.

They did not come armed with lots of legislative changes.

Mr. RUCKELSHAUS. I don't think the administration at this point is making any recommendations for changes in section 404.

Mr. EDGAR. I thank the gentleman for yielding.

Mr. BREAUX. I forgot what I wanted to ask now.

How much time do I have left?

OK. One of the points: although EPA has made probably only one veto in 18,000 permit applications, the fact that EPA has the right to veto an application certainly is going to affect it in its process toward a final decision. If I know somebody is going to veto it if I don't change it, the chances are I am likely going to change it according to what I think is appropriate before I submit it.

So the fact that there has only been one veto does not indicate the extensive operations that EPA has had. That is one of the things I want to focus on.

My area is probably more affected by the 404 permitting section than any other congressional district in the United States. Twenty-five percent of all the wetlands in North America are in Louisiana, my entire congressional district is a wetland under the definition.

So everything that is dredged and filled is affected by the need for a 404 permit. One of the things that I have always been concerned about in the 12 years I have been here is the fact that some have tried to make the 404 permit a wetlands management protection act.

It was never intended to do that. I think it is not designed to do it, and therefore, we have all these problems when people try and use it for that particular purpose.

One of the things I am concerned with is that EPA is really the only agency that reviews the permit applications that are submitted to the corps. Congress has given your agency, in effect, a veto right over that application.

The other agencies are required to comment if it affects their particular area of jurisdiction. But we have not given them a veto right.

Some of the areas that you are required to look at, with regard to that permit application, are areas that I am concerned EPA does not have a great deal of expertise in, by design. For instance, the Administrator is authorized to prohibit the specification, which is, in other words, the veto of a permit, whenever he determines after notice an opportunity for public hearings that the discharge of the materials in such area would have an unacceptable adverse effect on municipal water supplies, certainly something your agency has expertise in.

But shellfish beds is the another area. Then it goes on: fishing areas, which are as extensive as all the waters of the United States; wildlife areas, which, of course, are throughout the United States; recreational areas, of course, again, throughout the United States.

Is it not correct that your agency does not have a lot of expertise, by design, in wildlife areas, in fishing areas, and shellfish bed areas?

And if you feel that you do, please describe to the committee the type of people you have reviewing these permit applications in those particular areas, and what would their expertise be?

Mr. RUCKELSHAUS. Well, we have both at the headquarters and regional level people with backgrounds in the effects of pollution on wildlife, on shellfish, on fish. I think there are two kinds of questions you are asking.

One is do we have the kind of experience that we need to carry out the responsibilities assigned to us under the act. And second, should we be assigned those responsibilities.

I think there are two different questions. I do think we have people in the agency with the kind of expertise to look at those sort of issues. Recreation areas may be a somewhat different kind of——

Mr. BREAUX. If we assume, for the sake of argument, the Department of Interior is the agency responsible for wildlife management for instance, and if we assume that the National Marine and Fisheries Service is the agency presumably designed to regulate fish matters, would it not be more preferable to have those agencies looking at these particular areas as regards the potential effect of permit application than, say, EPA, which is not noted for that area?

Mr. RUCKELSHAUS. I think, in fact, they do that now. I think they comment on those.

Mr. BREAUX. The difference is they are asked to look at it. You are given authority to say, "we object to it, we are going to veto it." Your work in this area is significantly more involved and higher as far as effect than, say, National Marine Fisheries Service or, say, the Department of Interior.

Mr. RUCKELSHAUS. Well, presumably, our comments would have more effect to the extent that they might lead toward some administrative review and ultimate veto by the Agency. So to that extent, you are right.

They probably do have more——

Mr. BREAUX. I am not trying to be argumentative with you. I am just trying to point out some problems that I have long perceived with the program.

We are telling EPA that you alone of all the agencies have the right to veto a permit application if it affects shellfish beds, or if it affects a wildlife area, or if it affects fishing resources.

We don't give that right to the agency that we charge with authorization and responsibility for managing those areas. I am asking you, isn't it more preferable to give them that perspective on the problem than, say, your agency?

Mr. RUCKELSHAUS. Well——

Mr. BREAUX. And if not, why not?

Mr. RUCKELSHAUS. It may be, except we might then have four agencies with a veto power over the permit.

Mr. BREAUX. As much as I would dislike that, isn't it more appropriate to have the agency charged with having the experts in those particular areas have that all-encompassing authority of a veto over a permit?

Mr. RUCKELSHAUS. I would have to think about it. I don't really quarrel with that. I guess I would quarrel with the question of whether you want to give one agency of the Federal Government the responsibility for issuing a permit and then multiple agencies the right to veto the exercise of that responsibility.

Mr. BREAUX. That is not my argument. I see the point you make. The argument I have is that—and you recognize and I think you apparently agree with me, that your agency is not the agency assigned to be the experts in these particular areas of management and responsibility.

Mr. ROE. Would the gentleman yield?

Mr. BREAUX. I would be glad to.

Mr. ROE. In this morning's testimony, there was a very clear concise statement made by Mr. Gianelli. He made the point of view that in the 404 lead agency situation that they, the corps of engineers, were faced with, that they were responsible initially in the borning of 404.

It was based upon the point of the fill and dredging as it related to the water resources of the Nation. That was the fundamental charge of the corps. When the situation—could equal, I guess, if you have a veto—authority was given to the EPA, as EPA evolved. The point that the gentleman from Louisiana was making earlier, what generated out of that over a period of time has been instead of the filling and dredging issue involved, that the statute has been bent by court decisions and by other interpretations to be wetlands protection act.

Mr. BREAUX. And by Congress.

Mr. ROE. And by Congress, yes. The point was made, half a dozen bills have been introduced and enacted into law which further fortified the permit process we are following. But I think if the gentleman will yield further, you raised a very interesting question.

And I haven't gotten into the issue yet. But from my point of view, if the test of the entire water quality issue is based upon fishable and swimmable waters, then it would be indeed a high presumption that EPA has no expertise whatever in the fishable end of it. Would it not be then proper in that line of logic to say that no decision can be made by EPA if they don't have the expertise in fishable waters when they are not speaking to the fish—and I don't mean to be facetious.

So it seems to me what we are saying, if the underpinning of the EPA law is based upon fishable and swimmable waters, are we saying that some other agency should have a veto authority to determine what is fishable and swimmable?

Mr. RUCKELSHAUS. Mr. Chairman, I think what Mr. Breaux is alluding to was fishery and wildlife management as opposed to the impact of contaminants.

Mr. ROE. It didn't come out that way, or I would not have responded in kind.

Mr. BREAUX. Just one more point. I think what the chairman has said is totally correct. What we are looking at is a problem, at least as I perceive it, that we have tried in many areas to make 404 a wetlands management, a Wetlands Protection Act.

The law continues—when you talk about fishing areas, it also says in parenthesis, "including spawning and breeding areas." That is really a management decision. That is fish biology type of work. The point I make is perhaps we have spread EPA very, very thin in some of these areas.

The other thing I think makes absolutely no sense with dredge and fill—I found out because of an actual situation in my district—and, again, it is Congress fault—is that it is a dredge and fill permit. I had a person, a company, out of State in Louisiana, right in the middle of the wetlands area dredging the hell out of the wetlands, just picking it up by truckload and putting it in another truck and toting it off to California, and putting it in a bag and selling it as fertilizer.

They didn't need a dredge and fill permit because they were not filling; they were just dredging. Makes no sense whatsoever. They were digging a big hole and leaving a canyon in the wetlands.

But because they were not dropping anything down, they were not filling, and therefore, didn't need a 404 permit. It doesn't make any sense at all. Whereas, if one guy took a teaspoon out of the wetland and dumped it on the other side of the canal, he would need a permit. A lot of problems.

Thank you.

Mr. ROE. The gentleman from Pennsylvania.

Mr. CLINGER. Thank you very much, Mr. Chairman.

Thank you, Mr. Ruckelshaus, for some very excellent testimony.

You have given the committee a lot to ponder over and consider. One question I had.

The top of page 2 of your statement, and elsewhere in the statement, you discussed "the administration's proposals." And during the 97th Congress the administration did formally submit to this committee some proposals for the amendments to the Clean Water Act.

But this year so far we have not received any such formal transmittal. I am somewhat uncertain about the situation this year. In your testimony you indicated that you had carefully considered whether to suggest or recommend some sort of pretreatment opt-out or waiver provision and that you rejected the pretreatment opt-out idea. However, in the attachment to your statement there is such a suggestion. I guess my question is: What is the status of the material that is attached to your statement?

Is it, in fact, the administration's proposal?

Mr. RUCKELSHAUS. The administration's proposal, to the extent it is specific, is embodied in my statement. And to the extent that statement conflicts with the original administration proposal, it is the proposal as embodied in my statement.

Simply because I did not address other administration proposals does not mean that those are not still the administration's position. They just were not the ones I wanted to highlight in my statement, because the ones I highlighted seemed to be the most important, and seemed to the administration to be the most important.

They were the ones that evolved out of the discussions we had with the Senate and have already had with Members of the House as being the most important ones for this committee to address.

Mr. CLINGER. So to the extent that provisions are suggested in your statement, that does represent the administration proposal?

Mr. RUCKELSHAUS. Yes. The administration, Mr. Clinger, still is interested, as am I, in some sort of pretreatment provision, to use that as an example. And when I testified earlier in the Senate, I suggested that I had had difficulty over the then 3 or 4 weeks since coming into office, coming up with a pretreatment recommendation that really made sense.

I discussed it with the administration. I discussed it with members of the Senate committee, with my own staff.

We went back after the Senate testimony and tried over again to come up with a proposal for pretreatment that would both achieve the goal of protecting the sludge, protecting the sewage treatment system itself, and of protecting the receiving waters, while at the same time provide some more cost-effective way for indirect dischargers to meet those requirements.

It has been very difficult to do, as I suggested. It has been very frustrating to do. The problem is we do not have the water quality standards from which we can work back from the end of the pipe into the plant, into the sludge, and back to the indirect discharger, and harmonize or fine tune a system that would avoid the over- and undertreatment problem that I mentioned.

Mr. ROE. Would the gentleman yield?

Again, we worked together in 1974, so we don't have to make fidelity relationships. But one of the problems—we are now in the process of writing a piece of legislation that you are going to have to administer in due course, right.

I think what the gentleman is leading up to, what is frustrating us on this pretreatment issue, is that in candor the Agency has not developed the standards.

Now, we have had reams of testimony. We don't go into legislation lightly, as you know.

And there are people here who understand the intricacies and the vicissitudes of this legislation. And one of the issues is how can we say to a manufacturer that you have got to do—let's take the plating industry. You have got to do certain basic things in a time certain, when our regulations are not completed. I know in that area we have done some more advanced work than others.

But, if you like, in that plating industry to take General Motors, or one of the companies that multitudinous types of processes along the line, and the committee is trying to decide do we strengthen everything on pretreatment to get the heavy metals and whatever out of the sludge so the sludge can be used for other organic uses and so forth--is that too expensive? What direction do we go? Or we are concentrating the sludge with the heavy metals and everything into it because we have not perfected the pretreatment issue yet, and consequently we cannot use that material; we cannot dump it in the wetlands or into the ocean for the problems involved.

So we are at a stalemate. One of the projections that has come aboard in part of the testimony has been based upon the point of view maybe what we should do, instead of giving a date certain, 3 years down the road is to say that these standards have to be met and, that as we develop categories, the different standards, the different elements that they be implemented with the time certain, 3 years from that point, if you follow me.

The problem, however, we are faced with is that companies such as General Motors, one of the larger companies, can come back and say we have seven different processes going throughout plants. We are trying to put something into place that is going to affect it and start the process of cleaning up those wastes now, but if we are lacking the information from the Agency, can you force us to go and spend tens of millions of dollars to achieve the goal when we don't have the facts that the Agency wants.

Is that coming along the line you are thinking about?

So I think when we are trying to write a law, we have in candor, we have on this side the environmentalists—they always think I am mad at them. I am not. We are trying to solve some of their problems.

They have been the gadflies. They have been darned important in the whole process. But they are looking for purity here and over here we cannot get the answers to move it. What do we say to the American people?

Do we stop now and wait until the Agency catches up? I don't mean again to be facetious. How are we going to put a law together that is going to deal with these issues if we don't have the facts to deal with.

Mr. RUCKELSHAUS. Well, you have asked a number of questions, Mr. Chairman.

I guess my response in terms of the direct question on pretreatment effluent guidelines is that we are well along the way toward preparing these effluent guidelines. You mentioned electroplaters.

We do have effluent guidelines for electroplaters. There is a problem associated with the so-called integrated plants where they have several processes for which effluent guidelines would be appli-

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cable, where they are staggered in terms of their being finally prepared.

We will just have to work through each one of those facilities, try to avoid jerking those plants around so that they have to meet one set of standards today and another set of standards once the new guidelines come out.

But we have ongoing now under a court decree, under a court order, the preparation of sufficient effluent guidelines to meet all of the requirements of every integrated plant I know of within time.

Now, the question is, do we go forward with that program that has been in place since 1972, or do we shift to a different kind of pretreatment program which, as I suggest, under the best of circumstances would take us 2 or 3 years of additional study, primarily in the toxic substance program and the sludge program, to get in place before we get on with a pretreatment approach.

You have expressed, I think, your own concern about the time which it has taken the Agency to get to this point. I share that frustration. I think the American people have that frustration. What I am suggesting is that we go forward with this current pretreatment program that has been in place now since 1972.

We have to work through this task force that we are creating, involving all of the various people, various publics involved in the equation, and see where we can get with it.

We should not at this point change the law as it relates to pretreatment, but leave it as it is and let us try administratively to work our way through it. The alternative is to delay for a couple of years.

I think under the circumstances that is asking the Congress a lot.

Mr. ROE. The gentleman from Pennsylvania.

Mr. CLINGER. Thank you, Mr. Chairman.

Just following up on that. As I understand it, under the modified consent decree, EPA is under direction to complete all of the pretreatment standards by June 1984. Can you give us either now or for the record an indication for which industries EPA will not have final BAT regulations by that date?

And also, some indication, if there are such industries, why the deadline could not be met in those instances?

Mr. RUCKELSHAUS. Let me make sure I give you accurate information. We will have most all of them by that deadline. November of 1984, I guess, is the date we have had to stretch one or two of them out to.

We can give you a complete list of who those industries are, and where they all stand.

Mr. CLINGER. I would appreciate that, if that could be submitted for the record.

Mr. RUCKELSHAUS. We will do that.

Mr. CLINGER. Thank you.

[The following was received for the record from Mr. Ruckelshaus:]

Question. Status of the effluent guidelines, including categorical pretreatment standards:

Answer: Regulations for 20 industrial categories have been promulgated (18 of these are subject to categorical pretreatment standards); regulations for 6 other industrial categories have been proposed and remain to be promulgatged (all 6 will be subject to categorical pretreatment standards); and regulations for 3 more industrial categories remain to be both proposed and promulgated (2 of these will be subject to the categorical pretreatment standards).

The last category to be promulgated is currently scheduled for November 1984.

Mr. ROE. The gentleman from New York.

Mr. NOWAK. Thank you very much, Mr. Chairman.

Welcome, Mr. Ruckelshaus.

Let me just follow up and be clear about this pretreatment. I take it that your general viewpoint is that there should not be any legislative changes to the Clean Water Act with regard to pretreatment, at least at this time.

And you feel that the pretreatment implementation review task force, which you have mentioned here on page 8, will come forward with those suggestions in the future?

Mr. RUCKELSHAUS. Yes. What we are trying to do is handle all of these problems that have been raised, as many as we can, administratively. It could be that we will find there are simply very large inequities that we cannot handle administratively, and we would have to ask the Congress for some relief.

I don't know of any yet. I don't know of any pretreatment program that everybody is going to buy off on. We have talked to all kinds of different groups about these programs.

They all raise problems depending on the group you are with. And the one we are currently embarked on, the one that has been in place for several years, has many detractors, including me, in the ideal world.

But I think we are far enough down the line toward trying to implement it that we ought to give it a fair shot. And the best way I know how to do it is to convene this group of people representing all of the various groups interested in this, and see if we cannot work our way through it administratively.

Mr. NOWAK. You will have a representative of the municipalities that are involved in the program on that task force, right?

Mr. RUCKELSHAUS. Yes. We will.

Mr. NOWAK. Do you have a date as to when this will be organized and a deadline for any type of report?

Mr. RUCKELSHAUS. The hope is to complete our work by next spring. The group is essentially established now.

Mr. NOWAK. Will they have a formal report that this committee will be able to look at?

Mr. RUCKELSHAUS. We would be glad to share the results of that work with the committee.

Mr. NOWAK. I think it very important.

Let me ask one more question regarding this—I wonder if you could elaborate, if you found that there could be assurances that the so-called alternative local pretreatment program would provide the same level or timeliness of protection for the treatment plant operations themselves, and, of course, the receiving waters?

Mr. RUCKELSHAUS. I am not sure I understood that question.

Mr. NOWAK. There have been suggestions that so-called local standards should be established for a pretreatment program. I am

sure that would be an alternative your task force would be looking at.

Mr. RUCKELSHAUS. The pretreatment waiver provisions.

Mr. NOWAK. Right. I think many people have concerns that there would be different standards in different areas, and about what the results would be, both for the operators of the plant and, of course, the receiving waters.

Mr. RUCKELSHAUS. Well, that was the provision that was originally suggested by Senator Chafee in the Senate and that the administration brought foward. It would take a change in the law as I currently understand it.

We do not have the authority to grant pretreatment waivers under existing law. So the task force, while it may decide to make some recommendation to Congress or to the administration, and through them to the Congress, we do not have any authority to do that administratively.

Mr. NOWAK. But that would be looked at in this review, I take it?

Mr. RUCKELSHAUS. Yes. I am sure—I would hope that this group, if it came to the conclusion that this was a better approach for the country to take in dealing with the problem of pretreatment, that we would feel free to recommend it.

Mr. NOWAK. One other problem area for us, especially in the Northeast and Midwest, has been, since 1981, the elimination of combined sewer overflows as an eligible category. And another area in which there are concerns, one which you talked about later in your testimony, is nonpoint source pollution. There have been some that have suggested this is a big problem. And unless combined sewer overflows become eligible once again, we may have a real problem with taking care of those combined sewers, especially in the older sections of the country where much of it has existed for many, many years.

I was wondering about your position on whether or not that could be considered eligible again.

Mr. RUCKELSHAUS. We are not recommending it at this time, Mr. Nowak. There is the authority, even after October 1 next year. Starting with fiscal year 1985, there is authority for the Governor to use up to 20 percent of his allocated funds for combined sewer overflow problems. With the approval of the EPA Regional Administrator, they can even dip into the allocation more broadly for that purpose.

The total bill, for the combined sewer overflow problem in 1981 was some $37 billion. When the Congress and the Administration at that time looked at the priority needs in the country, while there were some areas where combined sewer overflow would be fairly high up on the priority list, by and large the completion of the sewage treatment facilities was a higher priority. It was, therefore, decided to focus the Federal moneys into the completion of those facilities starting in fiscal year 1985, rather than continue the eligibility of combined sewer overflows.

Mr. ROE. Will the gentleman yield?

Mr. NOWAK. Yes, I will yield.

Mr. ROE. You know, it is so exasperating. We have listened to a year and a half of testimony from people all over this country. And now everybody, even some of our friends, come in and says one of

the things we have to look at is that this nonpoint source situation is creating about 50 percent of the pollution we are affected with. Recognizing it would be an enormous task. Some of the testimony this morning indicated 40 percent of that came from agricultural lands.

What puzzles me, in the city of Paterson, we have combined sewers. If we don't make it mandatory that all people who are producing toxic wastes or heavy metals remove their material, those pollutant materials, at the plant source, take it out before it gets into the system, then we are just absolutely wasting the taxpayers' money, if we don't make that mandatory.

The reason being is that immediately when we have a storm, if they are putting part of that material through the combined sewer lines to go down to the Passaic Valley Sewer Plant, the minute we have a heavy rain, it scours out all of those lines and puts it right back into the Passaic River.

Today we had some testimony given from the people from St. Louis who spoke in that same direction on that issue. They said, "No, we don't think you should go ahead and take those materials out, because the four types of categories we have in St. Louis—we can remove better"—the example the gentleman gave was one plant produces about a pound of copper a day, in 170 million gallons a day—you could not even discern or test for it when it got to the influent of the plant or the effluent from the plant.

It seems to me if we are talking about cleaning up pollution, and I don't quarrel with your $32 billion, or whatever you try to do, all at once. But there ought to be some way we don't kid the American people and tell them we are cleaning it up if we are not, if we are not making those decisions.

There aren't any two places in this country identically the same. Maybe as we are trying to break into ground, we should be more flexible and say to regions of the country, why can't we analyze what this regional problem is to get to the goal we are trying to get at.

Mr. RUCKELSHAUS. Well, I certainly cannot quarrel with that, Mr. Chairman. I think that in fact there is some flexibility for the Governor to use, as I say, up to 20 percent——

Mr. ROE. I sat in on that conference. The battle we fought was extraordinary over that. You know how that came out? There was too much power on one side that came back and said, "We will provide $320 million, and we will work that out so that if those pollutants were to affect necessary tour areas, we can deal with it." But it didn't speak to the issue of when it affects a water supply system. It left that blank. They would not go with that issue.

All I am trying to say to you is from a pragmatic, factual point of view, unless we deal with the combined sewer issue on an equal basis in a system, we are taking the heart out of one area and saying that doesn't count—you cannot deal with that. And we are spending hundreds of millions of dollars, almost $1 billion, on the Passaic Valley sewer plant handling those communities in northern New Jersey, with the ostensible view of cleaning up the pollution in the rivers and the tributary streams of the Passaic River, going out to that bay, and we are not going to cure that unless we legitimately deal with those combined sewers.

All I am simply saying is that if we are willing to spend $800 million to $1 billion to service that area, isn't it only right that we consider a major pollutant being those combined sewers?

Mr. RUCKELSHAUS. Absolutely.

The question is whether we should, therefore, make the combined sewer overflow problem one that is eligible for this $2.4 or however many billions we appropriate every year of Federal money. And are there other ways of getting at the same problem?

I don't for a minute say we should pour money into a treatment plant when the big problem in the area is combined sewers or something else.

Mr. NOWAK. I think the point we are trying to make is that we want to give that flexibility so that the States can start making these kinds of decisions. And if that decision happens to be that in several large cities where they have large amounts of combined sewers, that they wish to do it, without hurting some other part or make the tough decision on the priorities, let's give them at least the way they can do it, so that they can start to accomplish this nonpoint—if they already have taken part of their other problems in building treatment plants ahead of time.

And I think that that is what many of us on the committee are looking for some relief. And I hope that in your study of pretreatment and nonpoint source pollution, you will take another look at that. Because I think it is going to become a bigger and bigger issue, and we have more and more Governors calling about this problem. And I hope that we can look at what it will take, and I think it is legislative changes, or also some commitment by EPA to make sure this problem can also be handled to get the highest quality out there we can.

Thank you very much.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you very much, Mr. Chairman.

It is a pleasure to have Mr. Ruckelshaus with us this afternoon.

Could you please give us an update and a status report on section 301(h), the ocean discharge waiver program. What is the current status of the waiver applications submitted under the 1977 amendments and the Agency's June 1979 regulations?

Mr. RUCKELSHAUS. We have—I can certainly give you the exact—we have received 207 requests. I can give you the exact numbers of those we have acted on, those we have approved, those we have disapproved, those that are still pending. There are a lot of issues involved in the ocean discharge waiver provision, some of which we have resolved, some of which we have not.

Mr. PACKARD. Perhaps you can provide for the record those figures as well as what the results to date have been on the changes to section 301(h), which were made by section 22 of the 1981 Municipal Wastewater Treatment Construction Grant Amendments, as well as the length of time, the personnel, and the dollars that it has taken to process each of these applications on an average. I think that would be helpful for the record.

Mr. RUCKELSHAUS. I would be glad to do that.

[The following was received for the record from Mr. Ruckelshaus:]

Question. What were the results of the 1981 statutory amendments to section 301(h) and what are the resources needed to review an average 301(h) application?

Answer. The 1981 statutory amendments extended the deadline for filing 301(h) applications to December 29, 1982. As a result, 137 new applications were filed, which are in addition to the 70 applications received under the original statutory deadline.

The Agency's original 301(h) regulations were promulgated in 1979 and contained, among other things, prohibitions against 301(h) waivers for 1) the discharge of effluent receiving less-than-primary treatment; 2) the discharge of sewage sludge; and 3) communities already achieving secondary treatment. The 1979 regulations were challenged in court, and the court upheld the regulations with the exception of the three prohibitions referred to above. *Natural Resources Defense Council* v. *EPA*, 656 F.2d 768 (D.C. Cir., 1981).

The 1981 statutory amendments addressed two aspects of the court's decision. First, statutory language was added to section 301(h) confirming that communities achieving secondary treatment were eligible to seek a 301(h) waiver. As a result, communities may now propose in their 301(h) applications to reduce their treatment from the levels currently being achieved. Second, Congress disagreed with the court decision as to sewage sludge by adding statutory language prohibiting waivers for the discharge of sewage sludge. The result of this change is that sewage sludge remains ineligible for a 301(h) waiver. The 1981 statutory amendments did not address the court's decision with regard to less-than-primary treated effluent. As a result, the court's decision on this issue stands, and communities may request a waiver based on a proposal for less-than-primary treatment.

In addition to the above, the 1981 statutory amendments deleted the requirement that applicants have an existing discharge into marine water. As a result, communities which presently discharge into freshwater may submit an application for a 301(h) waiver if they propose to relocate their discharge into marine waters. However, it must be emphasized that this change does not mean that 301(h) waivers apply to freshwater; the proposed discharge to which the 301(h) waiver applies must still be into marine waters. Finally, the 1981 statutory amendments to section 301(h) deleted section 301(h)(8) which dealt with the use of Title II Funds. The legislative history underlying the deletion of section 301(h)(8) indicates that this was done because section 301(h)(8) was believed to be redundant, rather than being a substantive change. See, H.R. Rept. No. 970, 97th Cong., 1st Sess., 16 (1981); 127 Cong. Rec. H9515 (daily ed. Dec. 14, 1981).

Agency regulations responding to the lawsuit results and the 1981 statutory amendments were promulgated in June 1982. In addition, further regulatory amendments simplifying the application and regulatory requirements, especially for small applicants, were promulgated in November 1982 based on the Agency's experience in implementing the 301(h) program.

Based on our past exeperience with reviewing 301(h) applications, we estimate that the average processing cost per application would be $51,000 in contract costs and would require on average about one person/years. These figures do not include post-waiver activities such as compliance monitoring. Of course, there may be considerable variation from this average figure for a particular application depending on such things as the size of the discharge, sensitivity of the receiving waters, and complexity of the issues raised. The actual calendar time to complete review of an application would depend on the resources available for application review, whether the application contains all necessary data, and whether EPA's decisions are appealed.

Question. What is the status of the 301(h) program?

Answer. In response to the December 1981 statutory amendments to section 301(h), the Agency promulgated amended 301(h) regulations in June 1982. Further regulatory amendments were promulgated in November 1982; those changes drew on Agency experience with the 301(h) program and simplified and clarified the regulations, especially for small applicants.

The Agency received 70 301(h) applications under the original 1979 deadline and an additional 137 new applications were filed in response to the December 1981 statutory amendments, which extended the applications deadline to December 29, 1982.

Responsibility for 301(h) decisionmaking originally was retained by EPA Headquarters, with tentative decisions being signed by the Administrator. Headquarters has made 25 tentative decisions on the 30 largest applications filed under the original statutory deadline. Headquarters also will make the tentative decisions on the remaining 5 of these 30 applicants; these 5 are now undergoing review. Responsibility for 301(h) decisionmaking has now been delegated to EPA's Regional Offices, and all EPA Regions with 301(h) applicants had accepted delegation by June 1983. The

Regions have made 40 tentative decisions and 16 final decisions following delegation.

Of the 65 tentative decisions made Agency-wide, 22 were approvals and 43 were denials. Of the 16 final decisions made, 4 were approvals and 12 were denials. Table 1 presents a breakdown of these decisions according to whether the application was filed under the original 1979 deadline or the new 1982 deadline. The applications for which decisions have not yet been made are in various stages of the review process.

The review process involves a careful case-by-case scrutiny to assess compliance with the 301(h) criteria. As part of the review process the Agency has utilized the services of an outside contractor specializing in water resources and the marine sciences to prepare a Technical Evaluation Report (TER) which analyzes in detail the technical and scientific issues presented by the application reviewed. The application and TER are then scrutinized by Agency experts, including highly qualified and experienced personnel from the Office of Research and Development, in order to determine if the proposed discharge meets the applicable statutory and regulatory criteria. Decisions are announced in tentative form, with the opportunity for public comment and involvement prior to final Agency action.

In determining compliance with the balanced indigenous population requirement of section 301(h)(2), EPA carefully considers the potential impacts of toxic pollutants. Section 301(h) requires waiver recipients to control toxics introduced into their treatment works by enforcing applicable pretreatment requirements and by taking steps to control nonindustrial sources of toxics. Tentative waiver approvals announced to date have required as a condition of final approval that these toxics control programs be revised as indicated in the tentative decision document to assure adequate control of toxics. In this process, EPA uses applicable water quality criteria, water quality standards, and Food and Drug Administration action levels in determining, among other things, whether the applicant's discharge will allow for a balanced indigenous population of marine life. In assessing whether water quality criteria will be excessed, we use the critical initial dilution of the proposed discharge, which is, in essence, the "worst case" dilution. In addition this analysis is done utilizing toxics detected in the current discharge and thus does not reflect the additional toxics removal which would result following the applicant's implementation of proposed improvements to the its treatment of categorical pretreatment requirements. Where this conservative analysis indicates the potential for the discharge to exceed water quality criteria, we require as a condition of final waiver approval that the applicant take steps to assure water criteria will not be exceeded. In those instances where toxics cannot be controlled to levels such that marine life would be protected, the application would be denied.

Our 301(h) regulations contain additional criteria for the protection of saline estuaries regarding benthic impacts, bio-accumulation, and migratory pathways (40 CFR 125.61(c)(4). In addition, of the 45 tentative decisions involving estuarine discharges, 36 were tentative denials. Of the nine tentative approvals for proposed estuarine discharges six were in Alaska and all represent very unique conditions.

Section 301(h) applications raise many complex and difficult state-of-the-art issues regarding the fate and effect of pollutants in the marine environment. In addition, because most applicants are proposing changes from their current treatment levels, the review process necessarily requires the use of predictive analyses in determining compliance with the 301(h) criteria. The 301(h) applications present voluminous and complex data on the discharges' potential impacts which must be carefully scrutinized as a whole in order to determine compliance with the 301(h) criteria. For example, because of the wide variety of natural variability associated with each biological parameter, those measurements which can be expected to produce the most sensitive assessment of possible discharge-related impacts may be heavily relied on by the applicant, while others, because of their low sensitivity to impact and/or high natural variability, may not be as important to the overall assessment. Similarly, collection of field data by applicants necessarily relies on sampling of the biological populations selected for study, with the samples being used to represent the condition of the population as a whole. The validity of such sampling will depend on such factors as sampling frequency. location, and collection techniques, and the results obtained may be reported or analyzed in a variety of possible ways. Given the complexity of the real world and the large number of variables involved, there simply is no such thing as absolutely conclusive data. However, by considering all of the data in the application as a whole and by using other available scientific information, it is possible through the application of expert analysis to reach technically sound decisions as to the potential effects of the discharge.

TABLE 1.—NUMBER OF 301(h) DECISIONS TO DATE

	Tentative approval	Tentative denial	Final approval	Final denial
1979 applications	21	10	4	1
1982 applications	1	[1] 33	0	[1] 11
Total	22	43	4	12

[1] Most of these denials were based on State nonconcurrence with the application or because the discharge would be into waters exhibiting freshwater characteristics.

Mr. PACKARD. Also, we note that the administration proposes amendments to section 361(a) of the Clean Water Act's thermal discharge variance provisions. I have several—I have two major powerplants in my district, and they discharge into the ocean, or into waters that ultimately discharge into the ocean. I would be interested in knowing what your attitude is on these variances, whether you feel that thermal discharge is a significant form of pollution and what your recommendations are in terms of dealing with it.

Mr. RUCKELSHAUS. The administration, as you know, suggested deletion of the word "indigenous" from the aquatic populations to be protected. Frankly, the Agency doesn't see—I have discussed it with the staff—that that is that big a problem. The Agency has tried to interpret indigenous in such a way that it would encompass a fairly large population of aquatic life so as to be able to give relief where warranted.

I guess the major problem is with new sources, and whether it is necessary to build cooling towers in the construction of the new sources. But if the Agency issued new source performance standards, that probably would be necessary anyway. I don't know that dropping the term "indigenous," so that you simply have to protect a balanced fish population—which might permit heated water discharges, would give the relief anyway under the new source performance standards.

Mr. PACKARD. Is it your judgment that there are sometimes some pluses and improvements for the fish and wildlife over and above what the original was by thermal discharge?

Mr. RUCKELSHAUS. I suppose that depends on your definition of improvement. If by improvement you mean warmer water fish might be happier near warmer water discharges, yes. On the other hand, if we are trying to preserve the biota of the stream as we find it, then we may change it by changing the temperature of the water that is discharged.

Mr. PACKARD. In regard to EPA's removal credit approach, what is your opinion or your judgment of that whole approach?

Mr. RUCKELSHAUS. Well, I think it is a good approach. And I think that is one of the things that the pretreatment task force really ought to look at—how can we improve that, make that more attractive to people, work better. The idea is to give some sort of credit to the indirect discharger for whatever is removed by the publicly owned treatment work itself.

One of the problems the chairman brought up is what happens in storm periods, if you have storm water sanitary sewer combinations, where if you don't remove the toxics from the indirect dis-

charger, the storm water comes along and you bypass the treatment plant. Even though the treatment plant itself may remove a high percentage of the toxic material through secondary treatment, we still may lose some through the problems of combined sewer overflows.

On the other hand, if, as we have found, well operated secondary treatment plants do remove a high percentage of some kinds of toxics, and if we can translate that back into a removal credit system that gives some credit to the indirect dischargers so they don't have to do more than is necessary to protect the three things we are trying to protect—the sludge, the treatment plant and the receiving water—then we ought to make the removal credit system work. So far it hasn't been very attractive to them.

Mr. PACKARD. Do you see the administrative heartaches inherent within that process as being one of the major stumbling blocks?

Mr. RUCKELSHAUS. It is a problem, yes. I don't know—there are a lot of administrative problems in this whole pretreatment area.

Mr. PACKARD. One last question, Mr. Chairman.

You addressed the nonpoint pollution problem. And that is a major problem we are struggling with.

I think you indicated in your testimony that you have a report that will be prepared and be ready for presentation. Would you give us an update on the scope of that report, when it is scheduled to be released and to whom it will be released?

Mr. RUCKELSHAUS. We would be glad to share with this committee information that we have as a result of work we do on nonpoint source pollution, or for that matter any other problem.

We are well along the way toward developing guidance on nonpoint source problems for the States. We would try to include in our fiscal year 1985 section 106 grants to the State agencies some nonpoint source requirements, so that some of those funds are directed toward nonpoint source problems. That again would be consistent with the guidance that we are about to release this year. We will then be able to work with the States under that guidance to try to have an integrated Federal-State program.

As the results of those studies and efforts are completed, we certainly would share them with the committee or with anyone else.

Mr. PACKARD. Do you sense one of your major problems with that whole process of Federal guidelines is the preservation of local control?

Mr. RUCKELSHAUS. It could be. One of the things that concerns me about a large Federal nonpoint source program is its potential infringement on land use kinds of controls that are traditionally local in nature.

Another thing that concerns me is if we get into a major grant program, the problem of people starting to queue up, line up, waiting for Federal money to become available before they do anything. We have put a fairly large bill on the total nonpoint source program of the country. We could continue the discussion, in my third term as EPA Administrator 12 years from now, of where we are going to get the money to fund solutions to all the nonpoint source problems. We are right where we were in the sewage treatment plant funding issue. The chairman and I had this discussion. 12

years ago on sewage treatment plant funding and here we are again.

Now, we have had some States that moved ahead and are doing some good things on nonpoint source controls. I think we ought to encourage them to continue to do that, to try to get other States to do the same thing, and, to the extent possible, keep the Federal role to a technical advisory kind of position.

Mr. PACKARD. I have no other questions, Mr. Chairman.

Mr. MOODY. Mr. Chairman, I have some questions, but there is a vote on.

Mr. ROE. Do you have time for us to run a vote and come back?

Mr. RUCKELSHAUS. I would be glad to wait.

Mr. ROE. Suppose we recess for 10 minutes while we go and vote. We will come right back.

[Recess to vote.]

Mr. ROE. The committee will reconvene.

We were about to hear from Mr. Moody of Wisconsin.

Mr. MOODY. Thank you, Mr. Chairman.

Mr. Ruckelshaus, during the break, we discussed briefly the subject of CSO's but for the record, I would like to ask you again. If we all agree that we want to maximize the impact of scarce pollution control dollars, and we agree that the effective use of dollars may differ from place to place, why would we want to put any artificial—I will use artificial to editorialize—limits on how a State or local agency spends those dollars? If CSO cleanup yields more bang for the buck than using the money somewhere else then why not free up the local governments, to use the money as it sees fit? This should be particularly the administration that came in on the thesis that local government often knows best.

Mr. RUCKELSHAUS. Let me make two points, Mr. Moody. No. 1, I think the origin of the removal from eligibility of combined sewer overflow funding back in 1981 was the whole issue of how much money is going to be available. When I was first at EPA, combined sewers were not eligible for funding. It was put in as an eligible element for funding during the middle seventies, and then was taken out again in 1981. I think that is the origin of it.

Now, I think your question is a perfectly valid one. Let me tell you the way the program currently works. Each State is allocated a certain amount of money on the basis of a nationwide formula and may use any or all of that money for combined sewer overflows. Beginning in 1985, the Governor, acting usually through his State pollution control agency, can use up to 20 percent of the funds allocated to his State for projects like combined sewer overflow. He is not restricted from using all of that money for combined sewer overflow. In addition, he can go to the EPA regional administrator—usually that is who they would go to—or his State could, and say, "A project for combined sewer overflow is far and away a more cost-effective way of reducing pollution in my State than is allocating this money for sewage treatment plants or whatever," and if the EPA regional administrator agrees with him, he can use additional money over and above the 20 percent.

So there isn't a total restriction now on the use of those allocated funds for combined sewer overflow projects. And whether you would want to make them just as eligible as everything else is the

kind of issue that was addressed by the committee in 1981. It will be the kind of issue we will address in the study we are going to undertake in the next year, leading up to the reauthorization of the sewage treatment plant grant program. And it may be that we would decide there is a better way to get at it.

But on your central premise, which is should we be spending money where we get the most bang for the buck, I can't disagree with that.

Mr. MOODY. All right. So they are not totally restricted, but they are under some handicap at the present time, you would agree.

Mr. RUCKELSHAUS. That is right.

Mr. MOODY. After 1985, the study group you are talking about is addressing the issue of what we do beyond 1982.

Mr. RUCKELSHAUS. That is right, after the current program runs out.

Mr. MOODY. So we have a chance, if people can agree, of widening that window for CSO?

Mr. RUCKELSHAUS. Yes.

Mr. MOODY. My next question has to do with the issue of common lawsuits versus the permit process. We, in Milwaukee, went to the Supreme Court to argue that Clean Water Act was so thorough that it preempted common lawsuits. You are probably familiar with our situation.

Mr. RUCKELSHAUS. Yes.

Mr. MOODY. That decision meant we could get on with a much more rational process of cleaning up our water. Since we were under a previous court order to clean up our water we didn't quarrel with goal. However, we did quarrel with Judge Grady of Illinois' particular interpretation of how we should reach that goal and under what kind of fast track. We felt the common law suit would have imposed a ruinously fast timetable. Now I understand the Senate has attached an amendment to open up this matter again. If passed, people who don't like the permit process could always take their neighbor from an upstream State to court and try to settle it on a common law nuisance basis.

Do you have a position? Although we are very biased on this subject, it seems to me the Senate amendment throws into a cocked hat all the procedural safeguards which the whole clean water permit process is designed to handle.

Mr. RUCKELSHAUS. I can put back on again, Mr. Moody, my Justice Department hat. When I was first in the Government, I was Assistant Attorney General at the Justice Department. It seemed to me as a lawyer that once the country decided that the way it was going to handle water pollution was through the Clean Water Act, for it to then provide another whole set of remedies which invited an individual, municipalities or whoever to get the courts into deciding similar questions along parallel paths using an entirely different set of criteria that have grown up through the common law of the country simply didn't make sense. The Supreme Court correctly interpreted the existing law that the Clean Water Act preempts the field in this area. And that is the way it ought to remain.

We do have a very comprehensive national program for dealing with problems involving pollution and clean water, and that ought

to be the law of the land. We ought not to have a separate, in effect, set of laws or remedies that move up through the courts, often in parallel, sometimes in conflict with that Federal law.

Mr. MOODY. I am very glad to hear you say that. Does the administration have a position similar to what you have just enunciated?

Mr. RUCKELSHAUS. The administration's position is the same as the one I have just announced. It was announced by the assistant attorney general—I don't know whether it was in this House or the Senate—in testimony that was the same as what I said, maybe not quite as eloquent. [Laughter.]

Mr. MOODY. All right. I am glad to hear that. I am hoping, Mr. Chairman, that we will not put that kind of amendment on here because it opens up such a Pandora's box.

The third question, Mr. Ruckelshaus, has to do with the BAT versus BPT issue, which is very much on our minds. We have been hearing a lot of very high-quality testimony on both sides. Both sides can sit where you are sitting and make quite a compelling case. On the one hand, the chemical companies and some others have explained that, in some instances to achieve BAT standards, will be expending inordinate amounts of money.

If I may for the record just read an excerpt from Miller Brewing Company that is in my district, it says "Each Miller waste treatment plant is equivalent to one required for a city of 535,000 people." This is one plant. "The design efficiency to remove solids based on BCT is 97.5 percent and is achieved at a capital cost of $370 per pound of solid removed. The cost under BAT to achieve only 1 percent more, raising it to 98.6 percent solid removal, would cost $3,900 per pound removed."

The punch line is obvious. Thus, the incremental cost to remove additional pollutants has dramatically increased while the pollution removal itself has only marginally increased.

This is just one of, I suppose, many examples. Now, on the other hand, the environmentalists correctly point out that when we are talking about toxics, cost benefit calculations like that may not be applicable. We don't know what downstream costs of some toxics are, particularly when they get into the food chain and the environment. It seems to me this is largely an issue of science.

On the one hand, the chemical companies in some letters and testimony I have seen, say we have the scientific capacity to measure these toxics and remove them. And the environmentalists are basically saying it is still not scientifically that sound. Your testimony indicates in a parallel way that delays might be inordinate if we move to a scientifically case-by-case approach with cost-benefit-type calculations. Can you elaborate your stand on that?

Mr. RUCKELSHAUS. Well, the specific example you mentioned is the kind of example that is often used to argue against moving from BCT-BPT up to a higher level of technology-based treatment. In that particular case I guess I don't know whether we have a BAT standard, or effluent guideline for breweries. It is my understanding we don't. There may be some special circumstance there I am not familiar with.

At any rate, it is possible that moving from one level of treatment to a high level of treatment for toxics can cause very large expenditures for minimal removal. We have attempted to adjust to

those kinds of problems. In many cases, BAT and BPT are the same for toxic removals. Where we get 90 percent out for x dollars, and for 10 times x dollars you get an extra 3 percent out, we really do try to avoid that in adopting BAT standards.

It could be there are some distortions that continue to occur in the development of these technology-based standards as they relate to toxics. And I think the Agency has an obligation to work very hard to avoid those kinds of circumstances. There is the argument for certain kinds of substances—they are sufficiently toxic—that while the actual dollars per pound removed can be relatively high, where we are concerned enough about those particular substances, it may well warrant that kind of expenditure in order to avoid the problem.

But you put your finger on the dilemma--where we really get into these very high expenditures for relatively small removal, and where we can't avoid them under the existing law. I don't know how widespread that problem is, but where that does happen, and the extra removal is hard to justify on the basis of water quality or health-related standards, then it creates difficulties.

Mr. MOODY. Are you suggesting a waiver process there?

Mr. RUCKELSHAUS. The problem with the waiver process is it is very complicated administratively, very resource-intensive. It may be there is some way of addressing it in the law so as to avoid that case-by-case analogy. We do have a fundamentally different factors provision which we have requested in which we can get at some of the really gross distortions that exist within a particular industry classification. We have asked this committee to, and the Senate committee as well, to look and see if we can't get that level of flexibility in dealing with some of the distortions that might occur.

Mr. MOODY. How do we get the balance and flexibility that we all would like in some sense to conserve scarce resources? You don't want to have inflexible standards, where in some cases you spend much more than you are getting back. At the same time, balance that flexibility with this notion of economic achievability. How do you define economic achievability in the BAT?

Mr. RUCKELSHAUS. Very hard to do. Occasionally we define it as an affordability test. I don't frankly like that test.

Mr. MOODY. Would you call in the accountants and ask if the company can afford it?

Mr. RUCKELSHAUS. In the first place, let's assume we can establish who can afford it and who can't. To a certain extent, we are in the economic competitive race, rewarding the losers, the people who don't make it. The people who have taken what they have earned over the years, reinvested in plant and equipment and done everything we want them to do, are then penalized because they can afford to remove something.

So I don't think that is a test I feel particularly comfortable with. On the other hand, certainly a cost-effectiveness test often gets at the problem you mentioned. Namely, if we can get 95 percent out for x dollars, and then the curve breaks, and it costs you 10 times x to get another 2 or 3 percent out, that is a good way of looking at a way of balancing costs against the benefits received from the expenditures made. Benefits start to diminish, get very

slight, in comparison with the cost then. That is one way of striking that balance.

Mr. MOODY. It seems to me that predictability and an agreed upon framework for analysis is awfully important. How are you going to set up that analysis so we know what economically achievable is going to mean?

Mr. RUCKELSHAUS. The Congress, of course, can define it any way it wants and then oversee the Agency's exercise of the power granted to it to insure we are doing what you intended.

A cost-effectiveness test is one we do use in the Agency in a variety of circumstances. We are specifically given the authority to use that test under some statutes. And we do break the requirement for additional technology where we find costs going straight up and the amount of incremental pollution removed being relatively slight.

So we have had experience with using that kind of approach. And the Congress has from time to time reviewed it, and renewed our authority to do that.

Mr. MOODY. Would you recommend that that scope be given to the agency to apply that kind of test for the BAT-BPT.

Mr. RUCKELSHAUS. To a certain extent in adopting BAT standards, we do that now. We also as I say, have attempted in the past where it gets very complicated to subcategorize a particular industrial facility within an industrial class, to use this fundamentally different factors approach, which takes costs into account in determining whether a given national standard should apply to a specific facility.

Mr. MOODY. Is there a method for letting the chemical, or the allegedly polluting industry, get in on the cost of testing and arriving at the necessary information base to do this? The testimony we have had indicates they feel so strongly about it, and feel it is such a waste of resources to not have some flexibility that they would be willing to pay for the tests and participate in developing the data base and analytic base to do this on a case-by-case basis.

Do you have any response to that?

Mr. RUCKELSHAUS. I mean I think we ought to be perfectly open to share information, share methodologies with any industrial group. I don't know that them paying for it is so much the problem. But anybody who is willing to share some of the burden that the Agency has to do work, why, we ought to be amenable to letting them do that. I understand their concern. I guess what we need to do is to get specific about a concern and see how we could address that.

The generality I agree with you on. That if there were a way of avoiding this, where we really get a distortion, if the current law is such that the Agency feels it has to act in such a way that, as to a specific facility, specific plant, we are causing very large costs to be expended for minimal benefits, we ought to try to avoid that. There ought to be sufficient flexibility in the Agency's powers to avoid that kind of distortion.

Mr. MOODY. Will you be suggesting some language we could look at in that regard?

Mr. RUCKELSHAUS. Let me discuss with the staff, and again with you and your staff, and with the committee, where those distor-

tions may be occurring so we can make sure that we understand that we are talking about the same thing, and see if it is possible to address that.

[The following was received for the record from Mr. Ruckelshaus:]

Questions. How does the Agency consider economics in developing effluent guidelines? Can you provide the costs of these BAT and pretreatment guidelines to industry?

Answer. In developing Best Available Treatment Economically Achievable (BATEA) guidelines EPA determines, in accordance with Section 304(b)(2)(B) ". . . the cost of achieving such effluent reduction . . ." Regulations are not normally written on the basis of industrial categories, e.g. iron and steel, plastics molding, but subcategories of those industries. By subcategorizing, for example by size, the Agency can target which technology is "best" from an engineering standpoint and "cost achievable" from an economic standpoint to a much smaller set of facilities than would be covered under a more general requirement. This can, and does, lead to instances where facilities in a more adversely affected condition, e.g. small business, are subjected to less expensive requirements than facilities in other subcategories in the same industry. Our "cost achievability" tests are often undertaken using net present value (NPV) models incorporating such factors as impacts on employment, price effects, the cost of capital, inflation, and foreign competition. Similar studies are undertaken in developing pretreatment requirements.

Projected investment and annual costs of BAT and pretreatment standards for existing sources (PSES) are provided in the attached tables.

CONSENT DECREE INDUSTRIES—BAT INCREMENTAL INVESTMENT AND ANNUAL COSTS

[1982 millions of dollars]

Industry	Status	Investment	Annual
Adhesive and sealants	Preproposal	N/A	N/A
Aluminum forming	Final	48.2	25.1
Battery manufacturing	Proposed	2.8	0.8
Coil coating (except cans)	Final	9.9	4.0
Can making	Proposed	0.8	.5
Coal mining	Final	0	0
Copper forming	do	6.5	6.3
Electronics—1	do	4.2	2.7
Electronics—2	Proposed	0	0
Foundries	do	53.6	10.7
Inorganic chemicals	Final—1974	(1)	(1)
Inorganic chemicals—1	Final—1982	9.5	8.7
Inorganic chemicals—2	Proposed	4.2	2.1
Iron and Steel	Final—1982	93.1	21.0
Leather tanning	Final	0	0
Metal finishing	do	0	0
Nonferrous metals Smelting	Final—1974	0	0
Nonferrous metals Smelting—1	Proposed	60.3	34.4
Nonferrous metals Smelting—2	Preproposal	N/A	N/A
Miscellaneous forming	do	N/A	N/A
Organic chemicals and plastics	Proposed	519.8	243.1
Pesticides	do	30.1	23.5
Petroleum refining	Final	0	0
Pharmaceuticals	do	0	0
Plastics molding and forming	Preproposal	N/A	N/A
Porcelain enameling	Final	.4	.1
Pulp and paper	Final—1982	0	0
Pulp and paper (PCB's)	Proposed	29.4	9.7
Steam electric	Final	21.6	8.6
Textile mills	Final—1982	0	0
Timber	Final	0	0
Total		894.4	401.3

[1] Industry costs not expressed in the Federal Register.

N/A—Estimates not available because regulation is in preproposal stage.

CONSENT DECREE INDUSTRIES—PSES INCREMENTAL INVESTMENT AND ANNUAL COSTS

[1982 millions of dollars]

Industry	Status	Investment	Annual
Adheseives and sealants	Preproposal	N/A	N/A
Aluminum forming	Final	$26.1	$16.7
Battery manufacturing	Proposed	25.0	6.2
Coil coating (except cans)	Final	14.3	5.0
Can making	Proposed	27.6	16.7
Coal mining	Final	0	0
Copper forming	do	9.2	7.7
Electronics—1	do	0.9	0.6
Electronics—2	Proposed	9.9	2.7
Foundries	do	48.1	11.5
Inorganic chemicals	Final—1977	1.2	1.4
Inorganic chemicals—1	Final—1982	9.8	7.5
Inorganic chemicals—2	Proposed	1.2	.5
Iron and steel	Final—1982	30.3	5.6
Leather tanning	Final	159.0	45.0
Metal finishing	do	351.0	118.0
Nonferrous metals smelting	Final—1974	(1)	(1)
Nonferrous metals smelting—1	Proposed	13.1	8.9
Nonferrous metals smelting—2	Preproposal	N/A	N/A
Miscellaneous forming	do	N/A	N/A
Organic chemicals and plastics	Proposed	880.2	403.5
Pesticides	do	15.8	10.8
Petroleum refining	Final	0	0
Pharmaceuticals	do	.4	.3
Plastics molding and forming	Preproposal	N/A	N/A
Porcelain enameling	Final	18.7	9.9
Pulp and paper	Final—1982	0	0
Steam electric	Final	0	0
Textile mills	Excluded ¶8	0	0
Timber	Final	0	0
Total		1,641.8	678.7

[1] Industry costs not expressed in Federal Register
NA—Estimates not available because regulation is in preproposal stage

Mr. MOODY. I have one last question on nonpoint source pollution. Your testimony, if I can interpret it correctly, says the States should have the predominant role in the nonpoint. Is that a retreat, in essence? I was hoping that you would come out pretty strongly for an aggressive nonpoint source program. The problem it seems to me with letting the States do it is if different States dump into a common receiving body of water, there is going to be a very strong and systematic incentive for a State to do less than its full share.

Mr. RUCKELSHAUS. Well, I don't believe our program on nonpoint sources has been very aggressive in the past. And I think it is time for us to get aggressive. I think what I outlined was an aggressive nonpoint source program. If the only way we can be aggressive is to have some kind of Federal cost-sharing program, then what I am concerned about is that it look aggressive, but it wouldn't be, because we wouldn't have enough money in the program to meet the total national need, and what we will force is everybody lining up and not doing anything until the Federal money is available.

We have projected a very large expenditure for doing this nationwide, just as in the sewage treatment plant grant program. And

then you start adding in a whole lot of other eligible kinds of funding mechanisms. The next thing you know we have a multibillion dollar need out there with everybody waiting until the Federal money is available. We have some examples now in States like Wisconsin, your own State, which have been very aggressive in having their own cost-sharing program. They have made remarkable progress at getting individual farmers to adopt best management practices and addressing them at given watersheds. They have moved that program ahead.

One of the concerns that I have, frankly, about the bill that has been introduced in this committee is that it says in order for any cost-sharing program of the Federal Government to take place, you, the State of Wisconsin, have got to agree to keep it at the same level. Your levels have been much higher than other States around the country. Since you have addressed it and done good work, you have got to stay there in order to be eligible for any Federal funds. Other States wouldn't. That doesn't make any sense to me. If anything, you ought to be rewarded for the work that you have done.

If Wisconsin's experience can be transferred to other States, and they can pick up their share and start moving ahead on a best management practices nonpoint source program, I think we could really get moving. I think we now have the power through the water quality standards to move against nonpoint source problems. Water quality management approach that we adopt with the States. If we put in their specific responsibilities for moving against nonpoint source, and help them adopt either a cost-sharing or some kind of regulatory program, we may really be able to make some progress.

Mr. MOODY. We have to go vote.

Mr. ROE. Two questions. The gentleman from Kentucky, Mr. Snyder.

Mr. SNYDER. Thank you, Mr. Chairman.

I apologize for not being here during your dissertation, which I am sure was delivered with eloquence, but I was interested in a matter on the House floor. I appreciate you being here. I have total confidence not only in your eloquence but in your ability to handle the situation.

Mr. SNYDER. Thank you.

Mr. ROE. The gentleman from Arizona.

Mr. MCNULTY. Mr. Chairman, may I ask two quick questions?

Mr. Ruckelshaus, the Navaho Nation claims that three parts of the Nation fall into three regional EPA offices. Can that be addressed in some fashion so there is only one?

Mr. RUCKELSHAUS. Well, it, I don't see why it can't. I have not addressed this problem. Maybe we could make the assignment of one of those regions to have the responsibility for dealing with the Navaho Nation. I would be glad to request that.

Mr. MCNULTY. Thank you. Second question. The city of Tucson woke up just very recently to find an enormous plume of trichloroethylene in the municipal water system which has required the city to drill 15 wells. Your agency has already drilled 11 wells. Some 20 more are likely to be drilled, many of them perhaps by your agency, which has moved very swiftly on an enormous prob-

lem. Residue of cleaning solvent from the Defense Department activities during and right after World War II. There are a couple million dollars invested in this thing already. All that is to do is to determine the size of the problem, not changing it.

Estimates now run as high as $20 million. Given that and what you told us last week about the Superfund from which much of this money has come, the waste sites, the 1985 deadline, is there enough money in the Superfund to meet these problems nationally?

Mr. RUCKELSHAUS. The example you cite would not, if it were a Defense Department oriented contamination, would not come from the Superfund. That would come from a separate appropriation from the Defense Department itself.

Mr. MCNULTY. The Defense Department has shown a notable reluctance to concede the truth of that, although thus far there is no other rational reason for finding that.

Mr. RUCKELSHAUS. I don't know of that specific instance. But if it were traced back to the Defense Department, it would have to come from their appropriation. If it has presently come out of the Superfund, they would have to reimburse it under existing law. My response to your general question is, we are going to need to address next year the question of reauthorization of the Superfund. There is not enough money in the Superfund to deal with all of the problems associated with these abandoned hazardous waste sites and the Congress and administration is going to have to face them.

Mr. MCNULTY. Perfect finish, Mr. Ruckelshaus. Thank you.

Mr. ROE. Mr. Administrator, we want to thank you and your colleagues for a very splendid presentation.

Mr. RUCKELSHAUS. Thank you, Mr. Chairman.

Mr. ROE. We will recess for 10 minutes and vote. When we resume our witness will be Mr. Frank R. Kiolbassa, professional engineer, director, Department of Public Works, city of San Antonio.

[Recess.]

Mr. ROE. The subcommittee will reconvene.

We have now with us Mr. Frank R. Kiolbassa, director, Department of Public Works, city of San Antonio, on the legislation before us.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT BY MR. FRANK KIOLBASSA, DIRECTOR, DEPARTMENT OF PUBLIC WORKS, CITY OF SAN ANTONIO ON AMENDMENTS TO THE CLEAN WATER ACT BEFORE THE SUBCOMMITTEE ON WATER RESOURCES, COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

INTRODUCTION

Mr. Chairman and members of the committee: I am Frank Kiolbassa, Director, Department of Public Works, City of San Antonio. It is indeed a pleasure to appear before you today to present the City of San Antonio's recommendations for amending the Clean Water Act.

The Nation's cities have supported Federal clean water legislation for more than 12 years. In the last five years we have witnessed a disturbing trend towards shifting more of the burden to comply with national goals and requirements to the local cities, counties and other governments. We are concerned that the result of this

shift will be a further weakening of the national resolve to achieve public health and environmental goals.

We therefore strongly recommend two steps to reverse this trend: (1) significantly increasing the authorization for the Wastewater Construction Grants Program; and (2) focusing a portion of that increase on areas with critical water quality problems.

MEETING WATER QUALITY GOALS IS A NATIONAL COMMITMENT

The Federal Water Pollution Control Act of 1972, established a clear and unequivocal "covenant" among the federal, state and local governments. The purpose of that covenant was to reclaim America's rivers, lakes and streams and to improve their quality both for public health, agriculture, recreation, protection of fish and wildlife and enhancement of the natural and manmade environment. The act contained two basic elements to achieve these objectives:

(1) The Federal Government mandated that Publicly Owned Treatment Works must achieve secondary treatment and meet water quality standards issued by the states. For San Antonio, this mandate will require installation of advanced secondary treatment to meet water quality standards established by the Texas Department of Water Resources.

(2) In consideration for meeting mandated requirements, the Federal Government pledged to assist local governments by enacting the Wastewater Construction Grants Program providing up to 75 percent of the cost of construction in federal financial assistance.

In 1981, the Congress reduced the program's authorization, the number of grant eligible items under the federal Wastewater Construction Grants Program, and the federal matching share from 75 to 55 percent beginning with fiscal year 1985.

The national requirements enacted in 1972 imposed new costs on sewer rate payers. Without the federal construction grants program, the entire burden would fall on local rate payers except in a selected number of states. Businesses, recreation areas, farmers and other interests benefit from water clean-up and would never pay for those benefits but for the existence of the federal taxing and spending power.

In recent years, however, the Administration and the Congress have not adequately supported the 1972 "covenant" with respect to financial assistance. Unless the Congress commencing with fiscal year 1984 expands its commitment to the construction of wastewater treatment facilities, the demand for reducing or terminating the federal mandate to achieve public health and environmental objectives will grow ever stronger as we approach the 1988 deadline.

Expanded funding beginning with 1984 is critical because at least 3 years is needed to complete construction on a wastewater facility improvement program such as San Antonio's. While we have initiated our program, San Antonio and other communities have a long way to go in 4 short years. The window of opportunity is open, but we must act now if public health and clean water objectives are to be achieved.

The Congress made major changes in 1981 to reduce the federal participation in the Wastewater Construction Grants Program. Even with those changes, the Federal exposure is far greater than an annual authorization of $2.4 billion would provide in 5 fiscal years.

The administration's own 1982 National Needs Survey reported a total federal "exposure" taking account of the 1981 amendments of $37.5 billion. EPA reports that the federal share of backlog needs for compliance with Federal law and abatement of existing pollution, to be $30.2 billion.

In all probability local governments are less able to meet the costs compliance now than in 1972. Allocating the cost of meeting federal mandates to all beneficiaries is important if cities are to remain strongly supportive of national water quality goals.

Expanded financial assistance is a necessary prerequisite to enactment of anti-backsliding provisions contained in H.R. 3282. This provision would freeze stream use designatioins to those existing on January 1, 1983, except in a few specified instances as provided in H.R. 3282. To comply with current use designations and existing water quality standards, San Antonio must spend an additional $150 million. Without expanded financial assistance, this provision would impose a significant economic burden on our city and we would strongly oppose its enactment.

To meet the federal exposure of $37.5 billion the Congress would need to return the construction program authorization to its historic level of between $6 and $7 billion. At a minimum the Federal Government should provide $5 billion per year for the next 5 years in order to meet the 1988 federally mandated deadline for secondary treatment and achievement of State water quality standards. This recommenda-

tion closely parallels that contained in H.R. 3282 proposed by Chairman Howard. Continuing the wastewater construction program at $2.4 billion per year will not achieve this objective and will further shift the burden to local governments and away from nonrate payer beneficiaries.

Sufficient projects now exist in almost every State to fully obligate appropriated funds. Since this is the last year in which the 75 percent Federal matching share is available to all grantees, it is likely that the unobligated balance will be depleted before the end of fiscal year 1984. With cooperation among local, state and federal agencies, an additional $1.6 billion could be obligated during the next 12 months.

In addition, to further encourage timely obligation of appropriated funds in the out years, we recommend that the Congress authorize an additional 5 percent to the Federal matching share for those states which are able to obligate their previous years allocation within 12 months.

FOCUS ON CRITICAL WATER QUALITY AREAS

In recent years both the administration and the Congress have shown interest in focusing financial assistance on those rivers, lakes and streams where pollution is the greatest and government expenditures can achieve the greatest clean-up. The Environmental Protection Agency's fiscal year 1984 guidance for the office of water provides that "the construction grants program will be closely coordinated with the water quality management and NPDES permit programs and will be directed toward improving water quality and public health in critical water bodies". While EPA's 1982 Needs Survey has not reported the costs associated with meeting requirements in critically polluted areas, most States have identified these areas.

Most critical water quality bodies are in and near major population centers. The San Antonio River for instance has its headquarters near the center of our city and most of its flow immediately south of San Antonio is composed of the discharge from our wastewater treatment facilities.

We have signed a compliance agreement with the Texas Department of Water Resources which requires the city to achieve advanced secondary treatment by 1988. Our program's total cost is $450 million, approximately $350 million of which is federally grant eligible. Since 1980, San Antonio has received $2 million in construction grant funds and expects to receive $25 million in fiscal year 1984. These grants total less than 10 percent of the federally grant eligible portion of our total program. While we may receive more grants in the future, the likelihood that we will ever receive 75 percent or even 55 percent is low under presently authorized levels and the Texas Project Priority List System.

In 1981, Congress in section 216 of the act, declared national policy to provide assistance which in the judgment of the states would achieve "optimum water quality management consistent with public health and water quality goals and requirements of the Act". Presumably this would at least permit States to focus funds on the most polluted areas.

Section 216 also established a state discretionary fund of up to 25 percent of a State's allotment, to finance collector and interceptor sewers, major sewer system rehabilitation and combined sewer overflow. This fund tends to dilute the Congress intention to focus financial assistance on the most critical pollution problem areas.

We recommend that, first, the subcommittee review the states' record in directing funds to the most polluted areas including those in and near metropolitan areas; and second, consider what further direction the Congress should provide to assure that limited resources achieve optimum water quality in the Nation's most polluted river and stream segments.

In this era of tight budgets at all governmental levels, Congress should give serious consideration to further directing assistance to major metropolitan areas where water pollution and public health problems are at their most critical levels.

We recommend, therefore, that Congress consider two approaches:

(1) Establish a separate tract of assistance directed to large metropolitan area projects serving critical water bodies. Funds would be made available based on approved implementation plans for certified major metropolitan area projects. The separate tract should be supported by a separate authorization and appropriation based upon funds needed to fulfill construction schedules for each fiscal year.

This approach would obligate funds more efficiently by reducing the lengthy reviews by State and Federal officials; would produce a dependable schedule for obligating federal appropriations; and would achieve greater results by focusing on those areas with the highest levels of pollution.

This approach has been recommended by the Association of Metropolitan Sewage Agencies and we strongly urge its enactment.

(2) Alternatively, the Congress could require the states to allocate the major portion of their federal funds perhaps no less than 75 percent to metropolitan areas where the greatest amount of clean-up can be achieved. This approach would maintain the current administrative process for reviewing plans and specifications and awarding grants but would require states to target a greater percentage of Federal assistance to major pollution sources.

San Antonio, and I am sure other local governments, would pledge to work with the subcommittee and other interests to develop an approach which would accelerate obligations while concentrating federal dollars on the most polluted streams. We urge your favorable consideration of an approach which would meet these objectives.

PRETREATMENT

We support the control of industrial waste discharges to publically owned treatment works. Many cities, including my own, have approved or nearly approved industrial pretreatment programs under sections 307 and 402 of the act.

The objectives of industrial pretreatment are to: Protect wastewater and sludge quality from industrial toxic wastes; protect the operation of wastewater treatment facilities; and prevent pass-through of industrial pollutants to water bodies.

To these objectives, we would recommend that the Congress add a fourth: enable the adoption of pretreatment programs which would permit local governments to deal more effectively with site specific problems through site specific solutions.

Accordingly we support amending the act to permit local governments to adopt their own pretreatment programs meeting these objectives as an alternative to a single national program. What we are requesting is the flexibility which would enable local governments to develop and implement effective programs to meet local conditions in the most cost effective and environmentally sound manner.

Local plant operators would remain accountable to the State and EPA for meeting their NPDES permit conditions. Those local governments not wishing to devise their own programs would comply with the national program.

CONCLUSION

In closing, Mr. Chairman, further progress toward achieving national water quality goals depends on revitalizing the local, state and federal partnership established in 1972. Clean water is a matter of public health as well as environmental protection. Expanded financial support for the Construction Grants Program must be among the Congress highest priorities.

This concludes my statement. Thank you for the opportunity to present our views and recommendations.

Mr. ROE. Please proceed.

TESTIMONY OF FRANK R. KIOLBASSA, DIRECTOR, DEPARTMENT OF PUBLIC WORKS, CITY OF SAN ANTONIO, ACCOMPANIED BY ROBERT WEAVER, CONSULTING COUNSEL

Mr. KIOLBASSA. Yes. Mr. Robert Weaver, consulting counsel to the city of San Antonio on these matters.

Mr. ROE. Proceed.

Mr. KIOLBASSA. Yes. Thank you very much.

This is my first time to address a committee of Congress like this. I commend you for your deliberations. I learned a great deal here today.

I hope that San Antonio's version will give you some insights into our perspective of the legislation before you, some of our concerns and hopefully it will have a bearing on your decision before you.

I bring the greetings of all the 900,000 people that live in the San Antonio metropolitan area, and 200,000-plus customers.

We are located in south-central Texas, about 150 miles from the Gulf of Mexico. We are probably the 10th largest city in the Nation, and the 36th largest metropolitan area. Unfortunately, we

do not share the same economic fortunes as our population credentials do bear out.

I also want to thank your understanding and attentiveness to Congressman Kazen's remarks that you heard September 20. He represents part of our area. We are most supportive of him, and thank you for your kindness to him.

The Nation's cities have supported Federal clean water legislation for more than 12 years. In the last 5 years we have witnessed a disturbing trend toward shifting more of the burden to comply with national goals and requirements to the local cities, counties, and other governments. We are concerned that the result of this shift will be a further weakening of the national resolve to achieve public health and environmental goals.

It has definitely disturbed all of us in San Antonio, especially when you look at the rise in our sewer rates, fivefold over the next few years, and the majority of those resulting from what we feel are the result of the 1981 amendments and the reduction in funding authorizations.

We, therefore, strongly recommend two steps to reverse this trend: One, significantly increasing the authorization for the waste water construction grants program; and two, focusing a portion of that increase on areas with critical water quality problems.

At this point, of course, we have an extensive statement, Mr. Chairman. I am going to highlight this with another five pages in mind. We would like to enter the entire statement.

Mr. ROE. No objection.

Mr. KIOLBASSA. Meeting water quality goals is a national commitment. The Federal Water Pollution Control Act of 1972, established a clear and unequivocal covenant among Federal, State, and local governments. The purpose of that covenant was to reclaim America's rivers, lakes, and streams and to improve their quality both for public health, agriculture, recreation, protection of fish and wildlife, and enhancement of the natural and manmade environment. Our city leadership did not even challenge the influent designations or the effluent designations the State proposed to us.

We were the first there to say let us go. We knew it would help us and benefit, and particularly the people down the 150 miles of the San Antonio River south of San Antonio, to the Gulf of Mexico. We felt especially confident because of the Federal partnership proposed in the act.

The act contained two basic elements to achieve these objectives. One, the Federal Government mandated that publically owned treatment works must achieve secondary treatment and meet water quality standards issued by the States.

By the way, in San Antonio we had secondary treatment. We were the first in Texas. In 1930 we went to that as our commitment to water quality.

For San Antonio, this mandate will require installation of advanced secondary treatment to meet water quality standards established by the Texas Department of Water Resources. This program was arrived at after following the spirit and intent of the law. Quoting Representative Kazen, San Antonio played by the rules and conducted five major planning steps from regional planning to

an extensive citizen participation program, and has done all it has been asked to do by the Government.

Two, in consideration for meeting mandated requirements, the Federal Government pledged to assist local governments by enacting the waste water construction grants program providing up to 75 percent of the cost of construction in Federal financial assistance.

All our city councils since 1974 supported this financial partnership and it passed four rate increases since 1978 to financially support our waste water part of the program.

The Congress in 1981 reduced the program's authorization, the number of grant eligible items under the Federal waste water construction grants program, and the Federal matching share from 75 percent to 55 percent, beginning with fiscal year 1985.

The national requirements enacted in 1972 imposed new costs on sewer ratepayers. Without the Federal construction grants program, the entire burden would fall on local ratepayers except in a selected number of States. Businesses, recreation areas, farmers, and other interests benefit from water cleanup and would never pay for those benefits but for the existence of the Federal taxing and spending power.

In San Antonio, there are users of the 150-mile stretch of the San Antonio River south to the Gulf of Mexico. The Federal tax dollars collected and paid will be repaid in many-fold by the benefits they will receive from a cleaner San Antonio River south of San Antonio.

Since 1981, the Federal Government has not adequately supported this covenant, we feel. Unless Congress commencing with fiscal year 1984 expands its commitments to the construction of wastewater treatment facilities, the demand for reducing or terminating the Federal mandate to achieve public health and environmental objectives will grow ever stronger as we approach the 1988 deadline.

I think San Antonio is a microscopic case of the national picture.

Expanded funding beginning with 1984 is critical because at least 3 years is needed to complete construction on a waste water facility improvement program such as San Antonio's. While we have initiated our program, San Antonio and other communities have a long way to go in 4 short years. The window of opportunity is open, but we must act now if public health and clean water objectives are to be achieved.

The Congress made major changes in 1981 to reduce the Federal participation in the waste water construction grants program. Even those changes, the Federal exposure is far greater than an annual authorization of $2.4 billion would provide in 5 fiscal years.

The administration's own 1982 National Needs Survey reported a total Federal exposure taking account of the 1981 amendments of $37.5 billion. EPA reports that the Federal share of backlog needs for compliance with Federal law and abatement of existing pollution, to be $30.2 billion.

In all probability, local governments are less able to meet the costs of compliance now than in 1972. I know San Antonio surely is.

Allocating the cost of meeting Federal mandates to all beneficiaries is important if cities are to remain strongly supportive of national water quality goals.

Expanded financial assistance is a necessary prerequisite to enactment of antibacksliding provisions contained in H.R. 3282. This provision would freeze stream use designations to those existing on January 1, 1983, except in a few specified instances as provided in H.R. 3282 and S. 431.

This provision would free stream use designations as those existing on January 1, 1983, except in a few specified instances, as provided in H.R. 3282.

To comply with the current use designation, San Antonio must spend an additional $150 million. Without expanded financial assistance, this provision would impose a significant burden on our city, and we strongly oppose its enactment.

In our humble view, to meet the Federal exposure of $37.5 billion, the Congress would need to return the construction program authorization to its historic level of between $6 and $7 billion. At a minimum, the Federal Government should provide $5 billion per year for the next 5 years in order to meet the 1988 federally mandated deadline for secondary treatment and achievement of State water quality standards.

This recommendation closely parallels that contained in H.R. 3282 proposed by Chairman Howard. Continuing the waste water construction program at $2.4 billion per year will not achieve this objective and will further shift the burden to local governments and away from non-ratepayer beneficiaries.

Sufficient projects now exist in almost every State to fully obligate appropriated funds. Since this is the last year in which the 75 percent Federal matching share is available to all grantees, it is likely that the unobligated balance will be depleted before the end of fiscal year 1984.

With cooperation among local, State, and Federal agencies, an additional $1.6 billion could be obligated during the next 12 months.

In addition, to further encourage timely obligation of appropriated funds in the outyears, we recommend that the Congress authorize an additional 5 percent to the Federal matching share for those States which are able to obligate their previous year's allocation within 12 months.

I would like to focus on critical water quality areas. In recent years, both the administration and the Congress have shown interest in focusing financial assistance on those rivers, lakes, and streams where pollution is the greatest and Government expenditures can achieve the greatest cleanup.

The Environmental Protection Agency's fiscal year 1984 Guidance for the Office of Water provides that "the construction grants program will be closely coordinated with the water quality management and NPDES permit programs and will be directed toward improving water quality and public health in critical water bodies."

While EPA's 1982 Needs Survey has not reported the costs associated with meeting requirements in critically polluted areas, most States have identified these areas.

Most critical water quality bodies are in and near major population centers. The San Antonio River, for instance, has its headquarters near the center of our city and most of its flow immediately south of San Antonio is composed of the discharge from our waste water treatment facilities.

We have signed a compliance agreement with the Texas Department of Water Resources which requires the city to achieve advanced secondary treatment by 1988. Our program's total cost is $450 million, approximately $350 million of which is federally grant eligible.

Since 1980, San Antonio has received $2 million in construction grant funds and expects to receive $25 million in fiscal year 1984. These grants total less than 10 percent of the federally grant eligible portion of our total program.

While we may receive more grants in the future, the likelihood that we will ever receive 75 percent or even 55 percent is low under presently authorized levels and the Texas project priority list system.

In 1981, Congress in section 216 of the act, declared national policy to provide assistance which in the judgment of the States would achieve "optimum water quality management consistent with public health and water quality goals and requirements of the Act." Presumably, this would at least permit States to focus funds on the most polluted areas.

Section 216 also established a State discretionary fund of up to 25 percent of a State's allotment, to finance collector and interceptor sewers, major sewer system rehabilitation, and combined sewer overflow. This fund tends to dilute the Congress intention to focus financial assistance on the most critical pollution problem areas.

We recommend that, first, the subcommittee review the States' record in directing funds to the most polluted areas including those in and near metropolitan areas; and second, consider what further direction the Congress should provide to assure that limited resources achieve optimum water quality in the Nation's most polluted river and stream segments.

In this era of tight budgets at all governmental levels, Congress should give serious consideration to further directing assistance to major metropolitan areas where water pollution and public health problems are at their most critical levels.

We recommend, therefore, that Congress consider two approaches. One, establish a separate tract of assistance directed to large metropolitan area projects serving critical water bodies. Funds would be made available based on approved implementation plans for certified major metropolitan areas projects. The separate tract should be supported by a separate authorization and appropriation based upon funds needed to fulfill construction schedules for each fiscal year.

This approach would obligate funds more efficiently by reducing the lengthy reviews by State and Federal officials; would produce a dependable schedule for obligating Federal appropriations; and would achieve greater results by focusing on those areas with the highest levels of pollution.

This approach has been recommended by the Association of Metropolitan Sewage Agencies and we strongly urge its enactment.

Two, alternatively, the Congress could require the States to allocate the major portion of their Federal funds perhaps no less than 75 percent to metroplitan areas where the greatest amount of cleanup can be achieved.

This approach would maintain the current administrative process for reviewing plans and specifications and awarding grants but would require States to target a greater percentage of Federal assistance to major pollution sources.

San Antonio, and I am sure other local governments, would pledge to work with the subcommittee and other interests to develop an approach which would accelerate obligations while concentrating Federal dollars on the most polluted streams. We urge your favorable consideration of an approach which would meet these objectives.

I think our comments on pretreatment pretty well follow that of AMSA. We, of course, have spent over $1 million in formulating a pretreatment program on the category standards and are now beginning the business of administering this, and we keep our fingers crossed and hope the fears we discussed do not occur in San Antonio.

In conclusion, I personally attend many meetings with citizens of San Antonio and spend many of my evenings discussing issues and problems in the area of public works. One such meeting recently was with a number of senior citizens who for once in their life were seeing some results of government taking actions. They showed me all their sewer bills and tax receipts. One gentleman, about 78 years old, looked at me with tears in his eyes and said, when were we going to get our turn?

It seems like we are also almost there, but never there. I could tell his strong support for government, his conservative views. But really it hurt him. When I tell him we discuss what we are going to do, it really hit me home that the confidence in government without sort of the support of government working together and seeing what happens to San Antonio's funding, he just couldn't believe it.

And that type of reaction I have gotten in San Antonio from many of these groups has really hurt their image of the mandate. The partnership started out in the Clean Water Act of 1972. And just coming up here yesterday evening, I met someone on the plane from San Antonio, and I explained basically in the 20 minutes—did not harass me, but he basically interrogated me thoroughly on this very issue. He could not understand where this partnership, this covenant, as I call it, broke down.

I think this committee is going to consider these appropriations renewing this, particularly with the local governments who day by day have to clean up the waters, who Mr. Ruckelshaus depends on us, who regulates us and the people from the States. We are the ones that deliver it every day.

And I think that your consideration of these things I have told you about today is most important. The people out there who are your constituents, the people I work for on a day-to-day basis are depending on the work you are about here. It is a very serious business with us. It is not just a matter of dollars and cents and clean water. It is a matter of confidence in the government, the Federal and local governments to work together and deliver what they

promise. This has urged me and others in San Antonio to come up here—this motivated me the first time to come up here to express that to you, because it is a very sincere concern, a very sincere need.

I encourage you. I was very pleased by the testimony today. I think we have real strong midcourse corrections. We have had some difficulties in the country. I urge you go about this country's business, the business of clean water, and the additional moneys you can make available will go a long way to saying yes, we were there in 1972, we have some midcourse corrections in 1981, we are back there behind the cities with additional fundings in 1985. And we are not going to let our end of the bargain down.

There is a lot at stake. I want to let you know that. I hear it every day. I think you need to know that. I think you have a great opportunity to set the record straight, or set the Federal Government straight in providing additional funding. To me, it is a great deal of work you have. I encourage you in it. I am behind you. And I stand before you to assist you in whatever way I can, all of us in San Antonio.

I am sure the other cities you will hear from tomorrow and in the days to come will echo my feelings.

That concludes my remarks. I thank you for the privilege of being here with you today.

Mr. ROE. Very well done. We really appreciate your testimony. Do you have any questions, Mr. Moody?

Mr. MOODY. No questions.

Mr. ROE. Mr. Packard?

Mr. PACKARD. Thank you.

I appreciate your coming up from San Antonio and giving us the benefit of your experience and your testimony.

Does the State of Texas have funding programs to supplement Federal and local funding resources for projects, like several other States do?

Mr. KIOLBASSA. No, sir, we have not locally been able to encourage the State. We do not. They are strictly an administrative body that passes on the Federal grants.

Mr. PACKARD. Do you feel that there should be a partnership arrangement? This committee is moving more and more, and I think the administration is moving more and more toward a partnership between or a cost/sharing partnership at the local, State and Federal levels. Do you feel that that is a good approach to the funding process?

Mr. KIOLBASSA. Yes, sir.

Mr. PACKARD. In your testimony you mentioned that the greatest need is where the dollars ought to be pinpointed and targeted.

Do you feel that this would have a penalizing effect upon those areas that have worked hard and devoted a considerable amount of local and other resources toward solving their problems and, therefore, do not have so major a crisis on water quality? Might not this be penalizing them for doing a good job in an effort to try to help those that have not really paid adequate attention to their water quality?

Mr. KIOLBASSA. I think, again, it probably will not. But it is a balance. And I think what we are sharing here is that the funds we

do have available, for the immediate future, that we do concentrate on the major polluters.

And what we need to do on the other side is look at, it is a serious problem, and we may need to look at extending the deadlines or doing other things which would not require, you might say, major funding. If it is a small city, it can be a major polluter, a small area can make a significant contribution to the pollution. It is not saying just because San Antonio, Tex., or other large cities, are not a major problem, we are saying the major polluters can be small, large or in between.

Mr. PACKARD. Along that line, small cities, middle-sized cities, and rural communities have to meet the same requirements and standards that do the larger metropolitan areas. Do you believe that the metropolitan areas ought to be given preferential treatment over some of the smaller cities that are struggling perhaps at a different magnitude, but still struggling?

Mr. KIOLBASSA. I think public health and the environment are the guidelines. The majority of your major metropolitan areas will have the problems. But the smaller communities may have a significant problem, as a major public polluter. Yes, they would be in that high priority category. I do not necessarily say just big cities, though that is more than likely where you will find it. But I am looking at public health and environmental protection as being the guideline, and not necessarily a priority list devised by some magic formula.

In San Antonio's case, sometimes you are a winner, sometimes a loser, depending on the luck of the draw. And that is my concern, and my difficulty.

Mr. PACKARD. I have to assume that San Antonio is not presently meeting the water quality standards.

Mr. KIOLBASSA. Not based upon the stream designations or the effluent guidelines. We do not have advanced secondary treatment now.

Mr. PACKARD. Do you think San Antonio has a possibility of meeting the standards by 1988?

Mr. KIOLBASSA. We voluntarily signed a compliance agreement to arrive at that in a methodical way. We are committed to doing it. We have our construction program on line such that we would be on line producing advanced secondary treatment by July 1, 1988. We are on that goal.

Mr. PACKARD. Assuming there are justifiable reasons—like unavailable funding, unavoidable construction delays, and the like—What would you think would be the alternatives—extending the deadlines? And, if so, how long?

Mr. KIOLBASSA. I would believe basically we would look at extending the deadlines or a combination of raising fundings and extending the deadline. It is a mix. You can say we go 1992, leave the funding as it is, or up the funding level and bring it back to 1988. It is a combination in this case.

On the program, we will be in line with it. I don't know where the political and all the legal processes are going to take us. We are looking at real big jumps in the rates.

Mr. PACKARD. In attempting to improve the water quality of the San Antonio River, do you think that nonpoint sources or upstream sources are creating a problem for San Antonio?

Mr. KIOLBASSA. No, sir. The San Antonio River begins in San Antonio. The water discharge treatment plant, particularly in the summertime, is the San Antonio River.

Mr. PACKARD. I read that in your statement. But I did not understand exactly what you meant.

So your downstream cities probably are blessing San Antonio rather than cursing them for the quality of the San Antonio River.

Mr. KIOLBASSA. We hope they will be. Right now they are not exactly happy.

Mr. PACKARD. Are you saying there would not be a San Antonio River if it was not for the city of San Antonio?

Mr. KIOLBASSA. Yes, sir, basically right. At least it would not be the magnitude it is.

Mr. PACKARD. Where does the water come from?

Mr. KIOLBASSA. Our main source of water supply is an underground aquifer. So we pump all our water through springs. We receive all our fresh water supply and drinking water supply from the Edwards aquifer, which is a several hundred miles long and many miles wide underground limestone aquifer.

Mr. PACKARD. Do you have a replenishment program?

Mr. KIOLBASSA. We do have a recharge program for that. It is not adequate. One of the greatest things we have to face in Texas is our long-term water needs.

Mr. PACKARD. Is the water quality of your aquifer deteriorating?

Mr. KIOLBASSA. We have not noticed any deterioration in the aquifer.

Mr. PACKARD. Thank you, Mr. Chairman.

Mr. ROE. I want to thank you very much for your patience and your indulgence. Your testimony will be a big help for us. We will certainly give every consideration to your recommendations.

Thank you very much.

The subcommittee will now recess until tomorrow at 9:30.

[Whereupon, at 4:25 p.m., the subcommittee recessed until 9:30 a.m., Wednesday, November 16, 1983.]

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

WEDNESDAY, NOVEMBER 16, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to notice, in room 2167, Rayburn House Office Building, at 9:40 a.m., Hon. Robert A. Roe (chairman of the subcommittee) presiding.

Mr. ROE. The Committee on Water Resources will reconvene its hearings on the clean water bill.

We have with us this morning the Honorable Bill Coyne from Pennsylvania, who has been a very strong supporter of this legislation.

So, as our distinguished colleague, we want to welcome you here this morning to reeopen this hearing.

The full text of your prepared statement will appear in the recored at this point.

[Statement referred to follows:]

STATEMENT OF REPRESENTATIVE WILLIAM J. COYNE OF PENNSYLVANIA

Mr. Chairman: I appear before this subcommittee today to seek assistance in solving a problem which exists in the city of Pittsburgh, but whose cause lies, for the most part, outside of the city.

Saw Mill Run is a stream which runs through an area south of the city of Pittsburgh and into the city itself. The Saw Mill Run watershed includes portions of 11 other communities: (Baldwin Borough, Baldwin Township, Brentwood, Castle Shannon, Crafton, Dormont, Green Tree, Ingram, Mount Lebanon, Mount Oliver, and Scott Township.) This Drainage Basin (watershed) is an area of approximately 19.5 square miles situated south of the central business district. It is about 7 miles in length and from 2 to 4 miles in width.

This watershed empties into the stream and this, together with the combined storm and sanitary sewer residue, runs into the sewer systems of the city of Pittsburgh. As a sanitary sewer the present system is unable to handle the overload. The original system was designed as a sanitary sewer to serve a population of 186,000; today it serves over 250,000.

Today, over 50 years since the construction of the Saw Mill Run interceptor, the Saw Mill Run Basin is plagued with serious problems involving sewage, pollution, and flooding.

The sewer does not work because of the massive amounts of storm and ground water that enter the pipes. The system was designed to function as a sanitary sewer. The massive amounts of inflow and infiltration have caused the interceptor to function as a combined sewer even though it lacks such capacity.

A study performed by an engineering company in Pittsburgh in 1974, established the allowable infiltration rate (based on a State Department of Environmental Resources design criteria of 500 gallons per day per inch pipe diameter per mile) is 1.3 million gallons per day. Measured infiltration rates were 13.3 million gallons per day—over 10 times the allowable rate.

Since 1925, the city of Pittsburgh and approximately nine townships and boroughs have been involved in efforts to construct an interceptor sewer. The costs were to be apportioned among the several municipalities based on their respective populations, land areas, and taxable valuations. Since that time, areas served by the interceptor have experienced dramatic growth.

Fifty years after the original agreement, the interceptor is now plagued with a host of problems, the most important being the excessive and dangerous amount of storm water that enters the sewer primarily from suburban communities. The Saw Mill Run interceptor was designed as a sanitary sewer not a combined storm and sanitary sewer. Additionally, analysis indicates that fourteen suburban municipalities have neglected the necessary maintenance of their portions of the sewer, while the city has maintained the improved portions of their sewer to the sum of $5 million of city funds.

The result of these failures is that the interceptor which was originally designed to spur development of this area now serves to slow it. At the same time, raw sewage is discharged into Saw Mill Run when the interceptors diversion chambers overflow, and many residents live with constant basement flooding during wet weather.

To solve what is a multi-municipal problem, the city is forced to seek Federal assistance. The Pennsylvania Department of Environmental Resources has continued to cite the city because of the exfiltration from the discharge sewer. This will continue to occur because the city will never be fiscally able to spend the $25 million to rebuild this system.

The city has initiated corrective measures on its own, but these efforts will not succeed unless further action is taken soon. The 55 year-old trunk line cannot handle the traffic.

The consequences of this situation are:

1. The developmental potential of the area is severely restricted by the lack of sewer capacity.
2. Raw sewage is discharged into Saw Mill Run as a result of the failure of the diversion chamber to function because of the excess load; and,
3. City residents are subjected to the unsafe and unhealthy experience of living with raw sewage and storm water in their homes.

The city has tried to seek solutions at its own expense. It has spent $5 million of its own funds to construct a 42-inch parallel sewer, but this is not the long-term answer. The answer is a completely new sewer line to handle the extra run-off from the suburban communities.

The city cannot raise the funds to complete the job—that will cost $25 million.

CONCLUSION

The question then becomes whose responsibility is it to solve this problem and build a new system. The city has done its share. They have spent over $5 million in the last few years. They have also gone to the State of Pennsylvania's Department of Environmental Resources for the last 11 years—each year receiving a low priority rating for this project.

Mr. Chairman, the city is confronted with a problem whose cause lies outside of its jurisdiction. The city, to solve the problem, needs federal assistance. I ask that the subcommittee when marking up the legislation pending before the subcommittee consider language, either statutory or in the committee report, which directly authorizes the expenditure of Environmental Protection Agency funds to solve the problem which I have outlined.

Mr. ROE. Please proceed.

TESTIMONY OF HON. WILLIAM J. COYNE, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

Mr. COYNE. Thank you, Mr. Chairman. It is a pleasure for me to be here this morning for the people I represent. I appear before this subcommittee today to seek assistance in solving a problem which exists in the city of Pittsburgh, but whose cause lies, for the most part, outside the city.

Saw Mill Run is a stream which runs through an area south of the city of Pittsburgh and into the city itself. The Saw Mill Run watershed includes portions of 11 other communities: Baldwin bor-

ough, Baldwin township, Brentwood, Castle Shannon, Crafton, Dormont, Green Tree, Ingram, Mt. Lebanon, Mt. Oliver, and Scott township.

This drainage basis, watershed, is an area of approximately 19.5 square miles situated south of the central business district. It is about 7 miles in length and from 2 to 4 miles in width.

This watershed empties into the stream and this, together with the combined storm and sanitary sewer residue, runs into the sewer systems of the city of Pittsburgh. As a sanitary sewer, the present system is unable to handle the overload.

The original system was designed as a sanitary sewer to serve a population of 186,000 people. Today it serves over 250,000. Today, over 50 years since the construction of the Sawmill Run interceptor, the Sawmill Run basis is plagued with serious problems involving sewage, pollution, and flooding.

The sewer does not work because of the massive amounts of storm and groundwater that enters the pipes. The system was designed to function as a sanitary sewer. The massive amounts of inflow and infiltration have caused the interceptor to function as a combined sewer, even though it lacks such capacity.

A study performed by an engineering company in Pittsburgh in 1974 established the allowable infiltration rate is 1.3 million gallons a day. Measured infiltration rates were 13.3 million gallons per day, over 10 times the allowable rate.

Since 1925 the city of Pittsburgh and approximately nine townships and borroughs have been involved in efforts to construct an interceptor sewer. The costs were to be apportioned among the several municipalities based on their respective populations, land areas, and taxable valuations.

Since that time areas served by the interceptor have experienced dramatic growth. Fifty years after the original agreement, the interceptor is now plagued with a host of problems, the most important being the excessive and dangerous amount of storm water that enters the sewer, primarily from suburban communities. The Sawmill Run interceptor was designed as a sanitary sewer and not a combined storm sewer and sanitary sewer.

Additionally, analysis indicates that 14 suburban municipalities have neglected the necessary maintenance of their portions of the sewer, while the city has maintained the improved portions of their sewer to the sum of $5 million of city funds.

The result of these failures is that the interceptor which was originally designed to spur development of this area now serves to slow development. At the same time, raw sewage is discharged into the Sawmill Run when the interceptor's diversion chamber overflows, and many residents live with a constant basement flooding during wet weather.

To solve what is a multimunicipal problem, the city is forced to seek Federal assistance. The Pennsylvania Department of Environmental Resources has continued to cite the city because of the exfiltration from the discharge sewer.

This will continue to occur because the city will never be fiscally able to spend the $25 million to rebuild the system. The city has initiated corrective measures on its own, but these efforts will not succeed unless further action is taken soon. The 55-year-old trunk-

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line cannot handle the traffic and the consequences of this situation are the following: No. 1, the developmental potential of the area is severely restricted by the lack of sewer capacity.

No. 2, raw sewage is discharged into Sawmill run as a result of the failure of the diversion chamber to function because of the excess load.

And, No. 3, city residents are subjected to the unsafe and unhealthy experience of living with raw sewage and storm water in their homes.

The city has tried to seek solutions at its own expense. It has spent $5 million of its own funds to construct a 42-inch parallel sewer. But this is not the long-term answer. The answer is a completely new sewer line to handle the extra runoff from the suburban communities. The city cannot raise the funds to complete that job, and that will cost $25 million.

The question then becomes: Whose responsibility is it to solve the problem and build a new system. The city, indeed, has done its share. They have spent over $5 million in the last few years. They have also gone to the State department of environmental resources in Pennsylvania for the last 11 years, each year receiving a low priority rating for this particular project.

Mr. Chairman, the city is confronted with a problem whose cause lies outside of its jurisdiction. The city, to solve the problem, needs federal assistance. I ask that the subcommittee, when marking up the legislation pending before the subcommittee, consider language, either statutory or in the committee report which directly authorizes the expenditure of Environmental Protection Agency funds to solve the problem which I have outlined.

I thank the chairman and the committee for the opportunity to be here today and I would be happy to try and respond to any questions that some of the enlightened members of the committee might have.

Mr. ROE. They are all enlightened members of the committee. The enlightened ones are here.

Mr. COYNE. I see we have one present, Mr. Chairman.

Mr. ROE. Let me ask you this: You refer to a combined sewage situation, which the committee of course is knowledgeable on. And the second thing you are talking about is an interceptor sewer, as I understand it, in the Sawmill Run basis.

Is that correct?

Mr. COYNE. That's correct.

Mr. ROE. Do the communities that contribute the sewage to the interceptor line, have combined sewers within their community, or is it the interceptor line that is the combined sewer line? Do you know offhand?

Mr. COYNE. I am not sure, Mr. Chairman.

Mr. ROE. All right. Well, let me suggest the following: As I recall in our water resources development bill we also had a flood control project for the Sawmill area. Is that not correct?

Mr. COYNE. That is correct.

Mr. ROE. That is right. I would suggest that you might want to arrange to have us meet with the staff and your city engineer to take a look at the interrelationship between the flood control pro-

gram and that combined sewer. That interceptor, has a relationship and you may not be technically aware of that.

But I would suggest that let us do that to see where that lies. I think what you are speaking to is that in the flood control program, the combined sewer, the interceptor combined sewer is contributing to that flood control issue as it relates to the backflooding into the cellars, et cetera. Is that not part of the problem?

Mr. COYNE. That is correct.

Mr. ROE. Well, why do we not get together because we need more detailed facts to see where this would lie. In other words, Pennsylvania has the right to set its own priorities, as you know. I do not know whether Pittsburgh and the surrounding communities have a request in the priority schedule as far as clean water funds. EPA funds are concerned to correct that. I don't know where that lies. So we ought to get that background information to determine. Do you understand what I'm trying to say now?

Mr. COYNE. I do.

Mr. ROE. And I would think that for the committee's point of view, if you let us know that, we will lock that back into the water resources development issue on flood control and see how we can relate that. Because I think there is a relationship between them, which might prove to be very, very helpful to you.

Mr. COYNE. Very good.

Mr. ROE. Are there any other questions for the distinguished gentleman from Pennsylvania?

Mr. EDGAR. Mr. Chairman, I would just like to say that I discussed this at length with the gentleman from Pennsylvania, and I apologize for not being here for your testimony this morning, but I did look through it, and it follows our conversation that we had. And I believe that there are some unique concerns here, particularly with the suburban versus urban relationship of this particular problem and getting all of these jurisdictions to work together on a common solution is very difficult.

So, I support the gentleman's effort and I think the chairman's suggestion about sitting down and working out a strategy where both the interceptor issue the other water related issues be considered is an appropriate direction.

And I want to commend the gentleman for raising this with our committee.

While this focuses primarily on a problem in the greater Pittsburgh area, there are a number of older cities throughout the northeast and midwest regions of the country that were put in place many years ago with boundary lines that are a bit artificial. And they have some unique problems when we start putting definitions together and authority to spend money by certain boundary lines.

And I think what we do in this situation may have some impact on some other areas.

I thank the gentleman for bringing it to our attention.

Mr. ROE. Thank you. The gentleman from Massachusetts.

Mr. DONNELLY. Thank you, Mr. Chairman. Let me echo the words of my friend from Pennsylvania. I think that you have personally lobbied every member of the subcommittee on this issue.

We have similar situations as this in Massachusetts, and as Bob Edgar said, there are old cities like Boston where they have those artificial limits and enormous growth in the suburban communities.

My question is: Is there an adversarial relationship between the city of Pittsburgh and the surrounding townships or are they willing to work together and put up their fair share of the cost of producing the end result in this effort?

Mr. COYNE. Well, for the most part, it is a very good working relationship. Allegheny County in which the city of Pittsburgh is located—Allegheny County itself has 129 separate municipalities, separate governments, of which Pittsburgh is only one.

And so the history has been that it's been a good working relationship except when it comes for putting money in the budgets of the municipalities outside. As I said, Pittsburgh has contributed in the last 5 years at least $5 million to this problem.

Mr. DONNELLY. You have to get 100——

Mr. COYNE. But with the dwindling revenue sharing funds that we have experienced in these communities outside the city, including the city, and with dwindling community development funds, it makes it very difficult for these people to free up money to be able to contribute to this effort.

Mr. DONNELLY. Would every town in Allegheny County have to contribute into the cost-sharing factor here?

Mr. COYNE. No. It would be about 13 municipalities.

Mr. DONNELLY. Thirteen including Pittsburgh?

Mr. COYNE. Pittsburgh would be 14; 13 outside the city.

Mr. DONNELLY. What role has the EPA played in this process up to this point?

Mr. COYNE. The State EPA has given this project a very low priority, and that is why one of my suggestions here today was to possibly, either by statutory language or other language, report language, to make this a priority within the State if that was possible.

But I understand the chairman has a different plan and we would be willing to accede to that.

Mr. DONNELLY. I thank the gentleman for appearing and I thank the chairman for the time.

Mr. ROE. For the benefit of the members, today's testimony in large measure, will be devoted to nonpoint source pollution. And it seems to me that with the battle we have been fighting with the other body on the eligibility of combined sewers being considered as part of the sewer system in respective communities, we cannot seem to break that logjam.

And part of the issue that we are developing on the committee now has to do with the point of view of the combined sewers contributing to the overflow and continuing pollution aspect. And it seems to me that as we take a look further into the Boston situation, the Patterson situation, and other areas, as Bob Edgar knows, we have been discussing for weeks now, the relationship between that overflow as it relates to the flood control issue we may want to think about some new language in the water resources development bill that speaks to this issue. Then we may be able to find a solution to the combined sewer situation as it relates to nonpoint source pollution through that other mechanism. That is what we

have to take a look at. That is why we will have to review with your engineers to see if there is a relationship that we could lock in in either bill. In the other bill we would have a better chance, I think, of mandating it as a possibility as part of that system, if you understand what I am trying to get at.

Are there any further questions for the distinguished gentleman from Pennsylvania?

[No response.]

If not, we want to thank you very much, Bill, for being with us and for your valuable testimony.

Mr. COYNE. Thank you, Mr. Chairman.

Mr. ROE. Our next witness this morning will be Mr. Richard Siegel, Deputy Assistant Secretary of Agriculture for Natural Resources and Environment, representing the Department of Agriculture.

We want to welcome you, Mr. Siegel, to our committee and we are most anxious to hear your testimony this morning because I know you are interested in the same area of resolution to this problem as we are.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF RICHARD D. SIEGEL, DEPUTY ASSISTANT SECRETARY FOR NATURAL RESOURCES AND ENVIRONMENT, U.S. DEPARTMENT OF AGRICULTURE

Mr. Chairman and members of the subcommittee, I am Richard D. Siegel, Deputy Assistant Secretary for Natural Resources and Environment, U.S. Department of Agriculture [USDA]. On behalf of USDA and Secretary Block, I would like to express our appreciation for the opportunity to appear before your subcommittee to discuss the important issue of nonpoint source pollution.

NONPOINT SOURCE POLLUTION FROM AGRICULTURE, SILVICULTURE

Agriculture and silviculture can cause nonpoint source pollution. Surface runoff from farmland, when it reaches surface waters or subsurface aquifers, can deposit soil sediment, as well as fertilizer, pesticides, and animal wastes. Irrigation return flows can be a source of stream pollution and so can runoff from timber activities.

The appraisal of resource conditions and trends carried out under the Soil and Water Resources Conservation Act of 1977 (Public Law 95-192) showed:

That combined soil erosion (sheet, rill, and wind) on nonfederal lands as of 1977 reached 5.3 billion tons per year;

That 15 percent of the fertilizer applied to croplands washes into surface water;

That 25 percent of the livestock operations, such as dairy farms, cattle ranches, and feed lots, have the potential to degrade water quality;

That nearly 100 million tons of salt enters surface waters each year primarily through surface and subsurface return flow of irrigation water; and

That less than 5 percent of all pesticides applied reach surface waters, (but in some locations, sometimes the concentration of a pesticide entering surface waters in the runoff from fields can be of concern).

USDA'S BACKGROUND IN NONPOINT SOURCE POLLUTION

Through programs such as the Agricultural Conservation Program [ACP] and the technical assistance and incentive programs of the Soil Conservation Service, agricultural nonpoint source pollution problems have been identified and treatment developed. The Forest Service manages the National Forest System of 155 forests and 19 grasslands in 41 States covering 191 million acres. Among its management responsibilities are protection of watersheds on National Forests and water quality protection in general on National Forest land. In addition, the Forest Service has provided national leadership for silvicultural nonpoint source pollution control in cooperation with forestry programs of the States and with private forest landowners.

USDA began working cooperatively with EPA in the mid-1970's when Agricultural and Silvicultural Water Quality Management Plans were being developed by States in response to Section 208 of Public Law 92-500 (The Clean Water Act). The 208 process, carried out in many states in cooperation with conservation districts, led to a series of federally funded projects aimed at demonstrating that farm and forest conservation and management could reduce nonpoint source pollution.

In 1978, seven Model Implementation Program [MIP] projects were funded by USDA and EPA using existing program authorities to address the nonpoint source problem. These projects utilized EPA funds from both Section 208, Water Quality Management, and Section 314, the Clean Lakes Program. In addition, there were USDA Agricultural Conservation Program [ACP] incentive payments, technical assistance by the Soil Conservation, research funds from both EPA and the Agricultural Research Service, and funds from a variety of other State and local sources.

The success of this initial effort led USDA to earmark $20 million of the ACP program in 1979 for water quality projects. Congress then responded in 1980 and 1981 with $70 million for the Experimental Rural Clean Water Program which will continue through 1991.

In 1980, USDA identified agricultural nonpoint source pollution as one of eight resource problems to be considered in formulating the national program for soil and water conservation called for in the Soil and Water Resources Conservation Act of 1977 (RCA). However, in the program which the Department of Agriculture completed and President Reagan sent to Congress in December 1982, emphasis was placed on soil erosion control, upstream flood damage reduction, and water conservation in water-short areas with the greatest emphasis going to soil erosion control. Since control of soil erosion has secondary benefits to water quality off the site, we expect improvement in water quality to occur from these intensified erosion control activities, even though their objective is to preserve soil productivity.

As in the past, USDA will still provide assistance in the water quality field through its ongoing program.

GENERAL COMMENTS ON NONPOINT SOURCE POLLUTION

First, water quality problems from nonpoint sources result from the cumulative effect of the pollutants that originate from land in a given drainage area. The pollutants moving off one owner's land are seldom sufficient in themselves to be the sole cause of the problem. It can be difficult, if not impossible, to determine the extent of an individual farmer's responsibility for a water quality problem, especially when the problem will be experienced downstream and off-site from where the pollution originates. Therefore, it would be neither practical nor equitable to force individual agricultural landowners to alter their land management practices under a regulatory program.

USDA's existing conservation programs and some at the State and Federal level make cost-sharing payments available as an incentive for landowners to act voluntarily to prevent nonpoint source pollution from their lands. The experience of both USDA and EPA has demonstrated that this is a cost-effective means of addressing nonpoint source pollution in watersheds where water quality improvement is a high public priority.

While there can be onsite benefits from nonpoint source pollution control measures, such as measures to prevent topsoil erosion, many of the benefits go to society at large in the form of cleaner streams and an improved environment. Estimates of these benefits and the total investments needed to obtain them are still relatively crude.

Second, not all nonpoint source pollution from agricultural or silvicultural land is due to land management practices. Some of the pollution occurs naturally. The Department believes it is necessary to distinguish between natural and human-induced pollution. Nonpoint source control efforts should be focused on the latter. Pollution resulting from human activity may be effectively controlled, while treatment of pollution from natural nonpoint sources may not be economically feasible or even desirable.

For these reasons, we believe that the control strategy for nonpoint sources must necessarily be different that that for point sources. Point source control is focused directly on the discharger, and regulation is based upon effluent limitations that are achieved through treatment and controlled release of effluents. Nonpoint source problems, however, do not allow this measure of control. Nonpoint source pollutants cannot always be captured and treated, nor can they be stopped by closing a valve. An attack on nonpoint source pollution needs to be based on specific Best Management Practices [BMP's] tailored to the physical environment and land use.

We have found that many people still view nonpoint source pollution problems from a point source control perspective. In a revision of the Clean Water Act, we would like to see a distinction between the approach necessary for control of nonpoint source pollution and the approach appropriate for point source control. BMP's should be the central component of a preventive nonpoint source pollution control program, and not categorical standards.

The philosophy of prevention promotes the concept of "Best Management Practices." These are defined in Section 130.2(q) of EPA's original water quality management regulations published on November 28, 1975. The States have based their water quality plans on this definition, which provides for water quality protection while allowing for a consideration of the technical, economic, and practical feasibility of a Best Management Practice. This is a workable definition for BMP's and should be retained.

Finally, in land management, we have found there is no single set of Best Management Practices suitable for the wide range of natural conditions which may be encountered. The individual, often unique characteristics of a site will determine the practice that is best for that site. A site specific evaluation of conditions, such as topography, soils, climate and proposed management activities, is what will lead to the selection of BMP's necessary to meet water quality objectives. Rather than attempt to frame a single list of practices to fit all situations, USDA and EPA shall devote their efforts to delineating the process for choosing Best Management Practices according to the specific conditions of a given site.

CONCERNS WITH POSSIBLE AMENDMENTS

Any amendments to the Federal Water Pollution Control Act that would allow no degradation of high-quality waters would constrain land management activities. To enforce strict nondegradation or "no change" could preclude management activities even when the changes in water quality would be low level, of short duration and of minimal impact. Timber harvesting on public and private lands could be precluded despite the fact that a site may be harvested only two or three times in a given century. We believe the nondegradation objective should be reached by considering long-term effects on a full watershed basis rather than dwelling on nonrecurrent changes to individual stream segments. This concept is of great importance to all land managers, both of public and private lands.

Any proposed amendment that would require States to identify any Federal program or activity which, if carried out, would be inconsistent with implementation of their nonpoint source pollution control plan. We would oppose such an amendment. It could result in serious delay to planned activities of USDA. Agencies such as the Soil Conservation Service and Forest Service have existing regulations that allow adequate public involvement, provide for environmental assessments and impact statements and ensure consultation and cooperation with State and local authorities. Only after State and local concerns with respect to activities proposed or anticipated are resolved are such plans finalized and implemented. We believe that Executive Order 12372, which replaced the A-95 process, is sufficient to ensure consistency between State and Federal projects and program activities.

CONCLUSION

Mr. Chairman, in closing, our Department has experience in addressing nonpoint source water pollution problems resulting from agricultural and forestry activities. Our activities on the National Forests speak for themselves. Our programs in the Soil Conservation Service and Agricultural Stabilization and Conservation Service have provided technical assistance and financial assistance to encourage landowners in proven areas of nonpoint source water pollution hazards to adopt preventive soil conservation measures. In the main, we have seen our programs aid in controlling nonpoint source water pollution. We welcome the opportunity to work with your subcommittee and with EPA in exploring these new legislative concepts, on an issue where we have had so much experience and have so much to contribute due to our expertise on agricultural producers, their methods and their resources.

Mr. ROE. Please proceed.

TESTIMONY OF RICHARD SIEGEL, DEPUTY ASSISTANT SECRETARY OF AGRICULTURE FOR NATURAL RESOURCES AND THE ENVIRONMENT; ACCOMPANIED BY WARREN HARPER, HYDROLOGIST, FOREST SERVICE; AND, PETER MYERS, CHIEF, SOIL CONSERVATION SERVICE

Mr. SIEGEL. I will try to summarize in the interest of time.

I am Richard D. Siegel, Deputy Assistant Secretary for Natural Resources and Environment of the U.S. Department of Agriculture.

In the office of our Assistant Secretary, Mr. John B. Crowell, we supervise policy for the Soil Conservation Service and the Forest Service. My testimony will deal with the interests of both those agencies in the subject at hand, nonpoint source pollution.

With me in the committee room today are Peter Myers, the Chief of the Soil Conservation Service, a number of his associates from that agency, and Mr. Warren Harper and John Currier from the Forest Service.

Mr. ROE. Mr. Siegel, might it not be a good idea to have both those gentlemen join you at the table in case we have a question for them?

Mr. SIEGEL. Well, Chief Myers can join me and so will Mr. Warren Harper of the Forest Service.

Mr. ROE. Mr. Myers, Mr. Harper, OK.

Mr. SIEGEL. Now, as the committee is well aware, agriculture and silviculture are causes of nonpoint source pollution. Surface runoff from farmland when it reaches surface waters or subsurface aquifers can deposit soil sediment as well as fertilizer, pesticides and animal wastes.

Irrigation return flows can be a source of stream pollution and so can runoff from timber activities. Every 5 years the Department of Agriculture conducts a natural resources inventory. The original natural resources inventory was conducted in 1977. A further one was done in 1982, but the data for that is not fully available at the present time. Based on our 1977 data, we have gross amounts of soil erosion from sheet, rill, and wind erosion on non-Federal farmland, reaching 5.3 billion tons a year, a considerable amount of that reaching streams.

Mr. ROE. Will the gentleman yield for a moment?

Mr. SIEGEL. Yes.

Mr. ROE. Could you explain to the committee, because I think it is important, what do you mean by rill?

Mr. SIEGEL. Sheet erosion is a shallow sheet of water crossing the soil. Rills are tiny——

Mr. ROE. Rivulets?

Mr. SIEGEL. Tiny depressions which are formed and then rills, if allowed to continue, become gullies.

Mr. ROE. OK.

Mr. SIEGEL. So a rill is the beginning of a gully situation in topsoil erosion.

We know that considerable amounts of fertilizer are applied in agriculture; 15 percent of the fertilizer that is applied washes into surface waters.

We know that livestock operations are a considerable part of our agricultural scene today, everything from dairy farms to cattle

ranches and feedlots, and 25 percent of those livestock operations have been deemed to be a potential hazard for water quality.

In the western part of the United States where the soils are extremely salty and the dry conditions accentuate the salt problem, we have nearly 100 million tons of salt entering surface waters each year.

A great deal of that is the result of irrigation water returning.

And, finally, a certain amount, 5 percent of all pesticides which are applied to crops, reach surface waters. Now, 5 percent may not seem like a dramatic figure, but we are concerned whenever concentrations of these pesticides in certain specific situations reach serious levels.

Now, the Department of Agriculture has considerable background in addressing nonpoint source pollution. The Agricultural Conservation Program [ACP] is a cost-sharing program administered by the Agricultural Stabilization and Conservation Service.

The Soil Conservation Service affords technical assistance that goes along with this financial assistance, and there are other programs in the Soil Conservation Service, which afford financial help.

All these voluntary programs are available to landowners, and nonpoint source pollution has been one of the objectives of this technical assistance and financial assistance that the Department of Agriculture has been affording to private landowners as part of its overall conservation effort, which began in 1935.

Turning to our public land responsibility, we have the U.S. Forest Service, which manages the national forest system, 155 forests and 19 grasslands in 41 States covering 191 million acres, a considerable part of our public land domain.

Watershed protection; since the founding of the National Forest System, has been one of its principal objectives, and the Forest Service, through its work with State forestry programs and private landowners, has brought the objectives of nonpoint source pollution control to its program in private and State forestry.

Beginning with section 208 of the Clean Water Act in the mid-1970's, USDA began to work actively with the Environmental Protection Agency. States were given the job of planning for nonpoint source pollution control. And in many cases this planning function involved the soil and water conservation districts in various counties throughout the United States and this was where the Department of Agriculture and EPA began to look together at the problem of nonpoint source pollution control and to bring to bear their various individual program resources.

In 1978 we had the initiation of seven model implementation projects, and these used existing authorities, which I have detailed in my statement.

Then in 1979 the ACP program, which I mentioned earlier, earmarked $20 million of its total appropriations for water quality projects.

And in 1980 and again in 1981 there was money funded to the extent of $70 million for the experimental rural clean water program, 21 projects in 22 States. And this today is the principal way that the Department of Agriculture is testing and exploring the potential for nonpoint source pollution control under its various programs.

Now, in 1980, the USDA was completing its appraisal and its program for the national conservation program under the specific legislation called the Soil and Water Resources Conservation Act of 1977, RCA. The RCA is the blueprint which Congress required the Department of Agriculture to prepare for the conduct of its various conservation programs over the next 5 years.

And in this blueprint, water quality was one of the eight resource problems that was identified. The thrust of our program, which President Reagan sent to Congress in 1982, however, was that the top priorities of soil and water conservation were to be sharpened into three main areas. The first area was soil erosion control. The second area was upstream flood damage reduction, and the third area was water conservation measures and water short areas.

Soil erosion control was to get the lion's share of the new priorities. Now, water quality, per se, was not identified in the top three priorities. However, anything we do in an intensive way to combat excess topsoil erosion is going to have an automatic beneficial effect on water quality.

So we feel that while water quality, per se, was not named as one of our three major priorities in our program, the increased emphasis on soil erosion control that we are bringing to bear in the sweep of our various soil conservation programs in the department is going to have an extremely direct and beneficial effect on water quality.

Mr. ROE. Can the gentleman suspend at that point. We will go vote and come right back.

Mr. SIEGEL. I will hold my breath.

Mr. ROE. I do not want to break the continuity.

[Brief recess.]

Mr. ROE. The committee will reconvene. The gentleman will proceed, please.

Mr. SIEGEL. Mr. Chairman, we did break my testimony at a convenient point because I had opened by describing the nature of the nonpoint source pollution problem and a description of the history that the Department of Agriculture has had in carrying nonpoint source pollution along as one of its activities in the soil conservation and in the public land management field.

So I would now like to speak to some of our comments that we would have on nonpoint source pollution as the subcommittee ponders its next legislative steps. The first point that we would like to make is that in the nonpoint source pollution field, the problems of water quality have cumulative causes. The pollution in the stream arises from many different and separate owners' lands, and there are other problems besides agricultural pollution that might result in the situation which actually breaches water quality standards.

It is difficult, if not impossible, to determine the extent of one individual farmer's responsibility in such a case. The effects are noted downstream well off the site, well away from where the pollution originates. Chesapeake Bay is an example of this that I might cite. And we feel, speaking for the Department of Agriculture, that to force an individual landowner to alter a particular land management practice he is carrying on under a regulatory approach is neither practical nor equitable in this type of situation.

The principal tool that the USDA has used, in addition to technical assistance, has been cost sharing payments. In particular, the rural clean water program is one which makes cost sharing payments to landowners to take part voluntarily in efforts to prevent nonpoint source pollution from their lands.

The experience that both USDA and EPA have had has demonstrated that this is cost effective where there is a watershed where a problem of water quality of high public priority has been identified.

The onsite benefits from this type of land treatment are present, but the principal benefits go to society at large in the form of cleaner streams and improved environment. There are estimates of these benefits and costs that can be made, but they are still relatively crude, and so we have not cited any figures in our statement.

Now, another thing is that many of the conditions which appear to be a deviation from water quality in streams from nonpoint source pollution are not all due to the human activity on the land. Some of the levels of sedimentation in a stream arise from purely natural causes. There's nothing that can trace responsibility to human activity. So we feel this has to be borne in mind.

All of these factors, then, I have noted make the control strategy for nonpoint source pollution decidedly different than for point sources. In point source control you focus directly on the discharger and you base your regulation on effluent limitations that can be achieved through treatment and controlled release.

Nonpoint source pollution does not have this measure of control. You cannot always capture the nonpoint source pollutant or treat it, and needless to say, you don't control nonpoint source pollution by shutting off a valve. What we require in nonpoint source pollution are management practices that are extremely site specific. They must be tailored to the physical environment and the land use. Again, they cannot be standardized in a cookie cutter fashion as you could with an industrial point source pollution situation.

We would like to dispel the notion that nonpoint and point source are essentially alike. We would like to see nonpoint source looked at for its differences and a different approach adopted, and this means the "best management practice," the prevention philosophy. This is the philosophy that has governed the efforts of nonpoint source pollution control thus far, and we would like to see the "best management practice" refined and continued.

There is also no single set of best management practices because, as I have noted, the site specific nature of nonpoint source pollution is the most critical factor. There is specific topography, specific soils characteristics, specific climate, and specific kinds of agricultural operations or timber operations that have to be borne in mind.

So it is the task, we feel, of our Department and EPA not to frame a single ideal list of best management practices, but to arrive at a policy and a process for choosing best management practices according to the specific conditions of a given site.

Finally, we have some concerns with amendments that have been talked about for nondegradation and for coordination of Federal activities by the States. We are very concerned with the proposals that there be no degradation of high quality waters. The

Forest Service is very proud of the high quality watersheds that are on the national forests, but to enforce a strict, no threshhold nondegradation or no change could preclude some normal and necessary land management activities, even when the changes in water quality would be at an extremely low level and of short duration and of minimal impact.

It is possible, reading the proposed amendments, to say that timber harvesting could be precluded for its effect on water quality, even if a timber harvest in a particular spot affecting a particular watershed would only happen two or three times in 100 years.

Long term effects should be looked at on a full watershed basis, rather than looking at individual change to a particular segment of the stream that would not recur.

And this is of great importance to owners of private forest land as well as to the U.S. Forest Service.

Now, our second point is that we would oppose any amendment that would require States to identify Federal programs and activities which, if carried out, would be inconsistent with implementation of the State nonpoint source pollution control plan. This is the so-called cross compliance aspect of the legislation from the Senate.

Now, granted, the States would be just identifying the Federal programs and activities rather than moving against the recipients of the Federal program and activity. They would simply be identifying the Federal programs and activities which would be inconsistent with the nonpoint source pollution program of the individual State.

But even in that form we feel that this would lead to serious delay. This would raise questions about many Federal activities. The Soil Conservation Service and the Forest Service, both of which would be affected, do provide in their programs, in their regulations for adequate public involvement. They do perform environmental assessments and environmental impact statements. And Federal, State and local authorities are in full consultation already.

There is an existing process for consultation between Federal programs and State water quality aims, and we feel that an additional layer of control, an additional layer of supervision would not be needed at this time. We feel the problem is a significant one, but we feel it is addressed satisfactorily by the mechanisms we have now.

So, in conclusion, we want to say that we have an active dialog at the moment with the Environmental Protection Agency, and Administrator Ruckelshaus has alluded to that in his statement before this committee yesterday.

We feel we have, whether it is the public land experience of the Forest Service or the private land experience of our soil conservation programs, a great deal to offer on the grounds in our line agencies to the solution of nonpoint source pollution problems. And we are ready to work with EPA and we are ready to work with this subcommittee as we go forward.

Thank you.

Mr. ROE. I think your testimony has been excellent in the sense that it has been very concise and adroit. In fact, it is the best testimony we have had so far on the nonpoint source issue because I think you brought many of the matters of our concern into clear

focus. Early in the morning that is the nicest thing I could say to any witness. But it is good.

Mr. SIEGEL. I want to say that these things are never done by just one person. They are a team effort, and I want to share the credit for your remarks with the many people that have come up with me today.

Mr. ROE. It is very good testimony.

Let me ask you a couple of questions. On page 2 you stated that you have been doing some research work and some studies throughout the years. And you had a report, I think, in 1977. And I assume that these figures are coming out of that report when we talk about the 15 percent of the fertilizer applied lands, we talk about 100 million tons of soil. Is that coming out of the latest report?

Mr. SIEGEL. No, these come out of the 1977 report. Now, our 1982 data is not released yet in this precise form.

Mr. ROE. When do you think that will be available?

Mr. SIEGEL. January or February.

Mr. ROE. January or February.

Mr. SIEGEL. That is right.

Mr. ROE. May I suggest that you give us a copy for our records of your 1977 report and then as soon as the 1982 report is ready, we would like to get a copy of that because we will be writing this legislation, as you know, within the next couple of months.

And it would be very, very helpful because what comes to my mind is a part of the dialog that we have been hearing from different witnesses—and I am looking for the sources of their statements, not the veracity. But where is the research, where are the sources? Is that roughly 50 percent of the pollution that we are faced with in the Nation comes from nonpoint sources?

That has been the general tone of the testimony, and there has not been too much corroborative evidence to that effect. In fact, it seems to come out of the air someplace, if you will pardon the euphemism.

So if you would be kind enough to give us the 1977 report, because that, I assume, fortifies the testimony that you have given here on these elements involved.

Mr. SIEGEL. The data we have is on the non-Federal lands and streams of the United States.

Mr. ROE. Non-Federal.

Mr. SIEGEL. Non-Federal.

[The following was received from Mr. Siegel:]

The relevant information from the 1977 NRI that pertains to nonpoint source pollution is contained in the RCA appraisal, parts I and II. That appraisal is enclosed. (U.S. Department of Agriculture, Soil and Water Resources Conservation Act, 1980 Appraisal: Part I: Soil, Water, and Related Resources in the United States: Status, Condition, and Trends, Issued March 1981. Part II: Soil, Water, and Related Resources in the United States: Analysis of Resource Trends, Issued August 1981, retained in subcommittee files.)

Mr. ROE. Now, let me ask you the next question: I think what sticks out here pretty firmly is the 100 million tons of soil that enters surface waters each year primarily through surface and subsurface return flow of irrigation.

Can you elucidate further on that?

Mr. SIEGEL. Yes; there is a Federal program called the Colorado River salinity control program.

Mr. ROE. That is what gives rise to my question.

Mr. SIEGEL. Right. I do not believe that is handled in this subcommittee.

Mr. ROE. Yes, it is.

Mr. SIEGEL. In the jurisdiction of your subcommittee?

Mr. ROE. Well, no. Interior has that, but we have—there are a number of projects that we are dealing with that do have soil relationships. That is why I am interested in the issue. I assume what you are saying is, if the gentleman would yield, that the soil that goes back into the receiving streams after irrigation—that is what this speaks to——

Mr. SIEGEL. Yes.

Mr. ROE [contining]. Is natural salting that takes place it would have to be, I guess.

Mr. SIEGEL. Like nonpoint source pollution, in the case of salinity the sum total of all the salt that is of concern in the Colorado River does not come exclusively from agricultural activities.

About 37 percent of the excess salinity in the Colorado River is coming from agricultural origins, from irrigation.

The principal culprit is overirrigation.

Mr. ROE. OK.

Mr. SIEGEL. Too much water is used in too many fields by irrigators.

Mr. ROE. But they are natural chlorides.

Mr. SIEGEL. The water seeps down below the root zone of the crops. It percolates down into the subsurface layers of soil, which are below the root zone. The excess water goes below the topsoil, below the root zone into the most saline types of soil layers.

Then it seeps out into streams. So if irrigation can be lessened, if less water is put on the fields, the plants will take what they need from the root zone and there will not be an excess to percolate down into the salty layers.

Mr. ROE. I think your department has been doing some work, as I recall——

Mr. SIEGEL. That is right.

Mr. ROE [continuing]. Reports, on trickling irrigation and much lesser quantities.

Mr. SIEGEL. That is right. We install pipelines and we line irrigation ditches so that there is no seepage and we instruct farmers in the correct amount of irrigation water that they need, neither too much nor too little.

Mr. ROE. What type of chlorides? Are they sodium chlorides or chlorine? What are they? All types of chlorides? Do you know offhand. Is there some—has any analysis been made or do you just put it all in one category?

Mr. SIEGEL. We call it salt.

Mr. ROE. Well, not necessarily.

Mr. SIEGEL. But we can furnish an answer to that question.

Mr. ROE. See if you have done any work on that and the types of chlorides, because you speak in your testimony later on, of the cumulative effects, which I think is a very important point you made there. We have been aware of that, too.

So I would like to know if you have done any work on it, any research work, what type of chlorides, if that has a bearing in combination with other materials that are released.

Mr. SIEGEL. I am sure we have the answer. We will be happy to look into that for you.

[The following was received from Mr. Siegel.]

Committee request: Identify the principal salts present in the irrigation water in the Colorado River Basin.

Response: The principal salts in surface and subsurface irrigation return flows in the Colorado River Basin are calcium, magnesium and sodium chlorides, sulfates, and bicarbonates. The salts exist naturally in the geologic formations including the topsoil. They are readily dissolved and carried by rainfall and irrigation water into the stream system.

Salinity is generally expressed in terms of total dissolved solids [TDS] in tons for salt concentration in terms of milligram per liter (mg/1) or parts per million (ppm).

The Environmental Protection Agency [EPA] has established 500 mg/1 as a safe drinking water standard. When the salinity level reacnes 700-800 mg/1 it begins to adversely effect plant growth and crop yields.

Mr. ROE. And we are requesting you to give us a copy as soon as available of your 1982 re-review of that whole situation.

Mr. SIEGEL. Fine.

Mr. ROE. It will give us a comparative relationship at that point.

Let me ask you this question: You speak of only 5 percent of all pesticides applied reach surface waters. Have you determined that by testing or what? Where does that come from?

That is considerably less than has been reported. That's what I am trying to get at.

Mr. SIEGEL. In preparing the document which we call the RCA appraisal, part 2, EPA studies were relied on for that conclusion.

Mr. ROE. EPA studies?

Mr. SIEGEL. EPA studies.

Mr. ROE. Do you have copies? Could you identify for us in supplement information where the source of that information comes from in EPA?

Mr. SIEGEL. Certainly, yes.

Mr. ROE. We would like to have that added to the record at this point. I think it is a very important figure. It is considerably lesser than other people have spoken to in testimony.

[The following was received from Mr. Siegel:]

Committee Request. Provide the basis for your statement "less than 5 percent of all pesticides applied to the land reach surface waters".

Response. Many investigations of the losses of various agriculture pesticides in runoff from treated land have been reported. Though amounts of pesticides loss in runoff may vary among specific treatments, it is almost always true that the gross loss over the course of the year following application will represent a small percent of the amount of the chemical applied. Results of watershed and field plot experiments reported in the literature (see table 7 of the enclosed document "Control of Water Pollution from Cropland Volume II—An Overview") show the wide applicability of this relationship. In general, total amounts of pesticide lost in runoff water and sediment were less than 5 percent of the amount applied.

(The document referred to: "Control of Water Pollution from cropland", Volume II—An Overview, June 1976 was retained in the subcommittee files.)

Table 7, referred to follows:

TABLE 7.—PERCENTAGES OF APPLIED PESTICIDES LOST IN RUNOFF[1] IN FIELD EXPERIMENTS

Pesticide	Incorporated depth (inches)	Soil texture	Slope (percent)	Pesticide in runoff (percent of application)	Citation
Attazine	0	Silty clay loam	14	4.8–5.0	Hall (80).
Atrazine	0	do	14	2.6	Hall, Pawlus and Higgins (81).
Atrazine	0	Silt loam	10–15	2.5–15.9	Ritter et al (134).
Carbaryl	2	do	10	0.1	Caro, Freeman, and Truner (36).
Carbofuran	3	do	9	.9	Caro et al (35).
Carbofuran	2	do	10	1.9	Caro et al (35).
DDT	0	Loamy sand	2–4	1.0–2.8	Bradley, Sheets, and Jackson (27).
DDT	0	Gravelly loam	8	.7	Epstein and Grant (63).
Dieldrin	3	Silt loam	14	2.3	Caro et al (34).
Dieldrin	3	do	10	.02	Caro et al (34).
Endosulfan	0	Gravelly loam	8	.25–0.35	Epstein and Grant (63).
Endrin	0	do	8	.01–1.0	Epstein and Grant (63).
Endrin	0	Silty clay loam	0.2	.1	Willis and Hamilton (169).
Fluometuron	0	Various	1–4	<3.0	Wiese (167).
Methyl parathion	0	Loamy sand	4	.01–0.02	Sheets, Bradley, and Jackson (142).
Methyl parathion	0	Sandy loam	2	.13–0.25	Sheets, Bradley and Jackson (142).
Propachlor	0	Silt loam	10–15	3.1	Ritter et al (134).
Toxaphene	0	Loamy sand	2–4	.4–0.6	Bradley, Sheets and Jackson (27).
Trifluralin	6	do	4	.3–0.5	Sheets, Bradley, and Jackson (142).
Trifluralin	6	sandy loam	2	.5–0.8	Sheets, Bradley and Jackson (142).

[1] Both water and sediment.

Mr. SIEGEL. But as I hasten to point out, 5 percent still means that in certain cases there could be a concentration.

Mr. ROE. I know. We are aware of that, hot spots.

Mr. SIEGEL. That is right.

Mr. ROE. All of the people who have testified, including the environmentalists and others, have come back and said they have recognized that nonpoint source pollution is a major factor we have to deal with.

But then again when we listened to Mr. Ruckelshaus testimony yesterday, to what degree? And you are tempering your observations, as I observe it, in your statement. That let us not throw away—if you will pardon the euphemism—the baby with the bathwater. Let us not get all kinds of regulations involved when we have certain things going that are effective.

And that is something that we have to fortify in our determination process so we do not go off half-cocked or others do not go off half-cocked with amendments, et cetera, if you understand the point I am trying to get at.

So it seems to me that we would like to identify for the record if you use the source of EPA on that 5 percent on pesticides. I think that is an extraordinarily important issue. I mean, we know we have hot spots, and you may have more—you are talking on an average basis. We understand that. But then again we come back and say, well, if it is 38 percent in a particular area, for some

reason we ought to know why or what, if anything, we should be doing there in view of what your study is beginning to point out.

Now, when you spoke in your USDA's background on nonpoint source pollution, you spoke to the issue of the agricultural conservation program—ACP. And you also spoke to the issue as an incentive program, technical assistance as an incentive program.

And what kind of matching funds are involved there?

Mr. SIEGEL. The ACP program is a program administered by the Agricultural Stabilization and Conservation Service—ASCS.

It is a program that is administered in almost 3,000 counties, and the funds are made available on a county basis through county committee for cost-sharing for various conservation practices.

Mr. ROE. All right. Then there is a Federal appropriation through Agriculture for that use?

Mr. SIEGEL. Yes; the ACP is the basic cost sharing program in the Department of Agriculture for farm conservation measures.

The RCWP then was an add-on to the ACP. It was a program called "Experimental Rural Clean Water." It was a separate account.

Mr. ROE. OK. Could you give us a summary on that for the record? What you are doing in that account? In other words, what we want to do is to be able to demonstrate that this is not a new field that somebody has just suddenly discovered. That there is work going on. You said you have affected some 3,000 counties. I would think you would give us some information in that what States primarily are involved in that issue, et cetera, et cetera, et cetera.

It does not have to be lengthy, but pithy and to the point, as your statement was.

Mr. SIEGEL. Fine. We can do that.

Mr. ROE. That would be very helpful to us.

Does that also relate to the ACP on the incentive payments? Is that a separate item?

Mr. SIEGEL. Well, the ACP is, as I said, the basic program, and the ACP administers an additional fund called the rural clean water program.

Mr. ROE. OK. Is the rural clean water program by legislation or is it by executive pronouncement under Agriculture?

Mr. SIEGEL. It was, I believe——

Mr. ROE. You are talking about coming out of section 208?

Mr. SIEGEL. Well, section 208 was the legislative section that set up the planning process, the water quality nonpoint source planning process in the 50 States.

Mr. ROE. OK.

Mr. SIEGEL. The rural clean water program was an action taken by the appropriations committees——

Mr. ROE. OK.

Mr. SIEGEL [continuing]. After the need was noted for some special emphasis and some earmarked funds in the Department of Agriculture to focus on—and there are 21 sites in 22 States that have the experimental rural clean water program.

Mr. ROE. Can you give us a copy of that report?

Mr. SIEGEL. Certainly.

[The following was received from Mr. Siegel:]

Committee request. Provide a summary of nonpoint source pollution control under ACP and RCWP.

Response. The enclosed tables lists the USDA obligation for "special" projects and programs directed toward nonpoint source pollution control. These are over-and-about the water quality contribution of our ongoing efforts to protect the soil resource base for sustained agricultural productivity.

It is important to distinguish between those nonpoint source pollution control projects under the Agricultural Conservation Program (ACP) listed as the first table and the Rural Clean Water Program [RCWP] listed as the second table.

ACP is authorized by the provisions of Sections 7 to 16(a), inclusive, and Section 17 of the Soil Conservation and Domestic Allotment Act (Pub. L. 74-46). Funded through USDA, ACP involved cost-sharing with landowners who establish soil and water conservation practices and other environmental enhancements on their property.

The Rural Clean Water Program [RCWP] is authorized by the Clean Water Act (Pub. L. 95-217). RCWP authorizes the Secretary of Agriculture with the concurrence of the Environmental Protection Agency Administrator to establish a nonpoint source pollution control program.

TABLE 1.—WATER QUALITY PROJECTS

State	Funding	Project status
MIPS—1978-81:		
Indiana	$1,112,722	Completed.
Nebraska	758,104	
New York	915,000	
Oklahoma	507,580	
South Carolina	622,835	
South Dakota	148,000	
Washington	745,555	
Total	4,809,796	
WQ projects—1979-81:		
Alabama	870,000	Completed.
Arkansas	271,130	
Connecticut	54,495	
Delaware	70,000	
Illinois	285,945	
Indiana	406,135	
Kansas	449,909	
Kentucky	636,527	
Maine	900,000	
Maryland	90,913	
Michigan	975,000	
Mississippi	500,000	
Missouri	550,000	
Nebraska	700,000	
New Hampshire	50,000	
New Mexico	694,711	
Ohio	195,000	
Oregon	143,679	
Puerto Rico	100,000	
South Carolina	650,000	
Tennessee	1,278,104	
Texas	85,615	
Total	9,957,163	

TABLE 2—RCWP PROGRESS REPORT SUMMARY BY STATE/PROJECT

State/project	Total project cost [1]	BMP funds approved for project	BMP funds under contract	Percent	Critical acres	Critical acres under contract	Percent
Alabama: Lake Tholocco	$1,841,048	$1,332,655	$1,114,059	84	9,270	7,061	76
Delaware: Appoquinimink	1,074,048	866,425	836,499	97	13,000	11,166	86
Florida: Taylor Creek-Nubbin Slough	1,911,048	1,104,250	373,713	34	93,500	26,629	28
Idaho: Rock Creek	5,676,048	1,954,591	1,174,699	60	34,800	12,375	36
Illinois: Highland Silver Lake	4,272,048	1,039,125	549,221	53	10,500	6,938	66
Iowa: Prairie Rose Lake	869,048	446,200	336,841	75	3,920	2,929	75
Kansas: Upper Wakarusa	3,921,048	2,231,560	1,373,095	62	43,252	18,620	43
Louisiana: Bayou Bonne Idee	6,880,048	3,930,000	2,823,696	72	117,000	41,075	35
Maryland: Double Pipe Creek	5,156,048	2,892,480	1,761,268	61	18,180	10,768	59
Massachusetts: Westport River	1,041,048	603,452	314,023	52	2,715	458	17
Michigan: Saline Valley	3,411,048	1,888,106	1,085,049	57	97,700	11,087	11
Minnesota: Garvin Brook	2,520,048	1,455,000	210,718	14	12,500	2,170	17
Nebraska: Long Pine	2,612,048	1,355,875	285,447	21	58,310	20,906	36
Oregon: Tillamook Bay	2,860,048	2,534,942	2,494,660	98	7,040	5,204	74
Pennsylvania: Conestoga	3,631,048	1,448,000	501,256	35	16,000	3,176	20
South Dakota: Oakwood Lakes-Lake Poinsett	2,512,048	742,387	582,065	78	83,371	32,182	39
Tennessee/Kentucky: Reelfoot Lake	6,431,048	3,527,784	1,323,889	38	78,406	22,548	29
Utah: Snake Creek	517,048	223,753	153,868	69	489	456	93
Vermont: St. Albans Bay	4,861,048	1,581,668	1,311,468	83	15,355	9,405	61
Virginia: Nansemond-Chuckatuck	2,689,040	1,476,000	644,207	44	18,749	7,392	39
Wisconsin: Lower Manitowoc	2,436,048	1,345,545	1,125,306	84	32,967	11,952	36
Total	67,122,000						
General reserve	2,878,000						
Grand total	70,000,000	33,979,798	20,375,047	60	767,024	264,497	34

[1] Includes OTS, OME and a modest contingency reserve.

Mr. ROE. The gentleman from Pennsylvania.

Mr. EDGAR. I would like to ask unanimous consent to address the committee for 1 minute on an unrelated subject.

Mr. ROE. No objection. So ordered.

Mr. EDGAR. Thank you, Mr. Chairman.

Mr. Chairman, I just stumbled onto the House floor a few moments ago to discover Jamie Whitten asking that the continuing resolution—excuse me—the supplemental appropriation be considered perhaps in an hour. He made note of where that was in the Congressional Record and I took a look at it and I find it very disturbing, and I checked with staff, that there are whole sections on water projects, many of which are probably very good, but which will be considered in an hour on the House floor.

And I think they take off the pressure from our committee's efforts to have an omnibus water bill. I would like staff to take a look at it. It is on page H-98-76 and 77 and 78 of the Congressional Record, that includes projects in Black Rock Canal, N.Y.; Aliceville Lake, Chesapeake Bay model, Md; Marine branch and Callaway branch, Hurst, Tex.; Hugo Lake, Okla.; Dredge Kennedy, Coles Point, Sardis Lake, Miss.; Yazoo Basin Reservoir. And it goes on and on for a whole shopping list.

There are some authorizations for the corps in this. It is not just a strict appropriation of existing projects. I ask the chairman whether or not there were any new projects in here or off the floor and he could not identify any new ones. But I know that some of

them appear in our omnibus bill. And as a Member who is trying to keep a very delicate coalition together, I would just like to voice my strong concern that the appropriations committee has not fully and adequately communicated with us on this measure, and I for one am a bit disturbed at finding so many of these projects in the supplemental appropriation with such short notice.

Mr. ROE. You have not had a chance to review these yet, Bob? Are they the same ones that were taken up before?

Mr. EDGAR. They are not the same ones.

Mr. ROE. These are additional ones?

Mr. EDGAR. These are different in scope and tenor, probably a little cheaper if I added up some of the numbers. A lot of them are studies of this, and that, and the other thing. But I think it really takes away from the jurisdiction of our committee.

And it, in my opinion, although I am just saying this with only 5 minutes of information, violates the commitment that we had, I think, with the appropriations committee, at least in terms of full communication.

I hope I am wrong, and I am going to spend the next 45 minutes at least looking at some of these issues, but I find it very disturbing that in every continuing resolution or supplemental appropriation, we nickel and dime four or five more projects in. It really takes away from our ability to set a national water policy based on the merit selection and the cost sharing and the other issues that we have determined.

And there is very little opportunity for us to know whether or not these projects fit within the cost sharing provisions of our bill.

Mr. ROE. Well, you are going to look into that now. When is that coming on the floor? In an hour?

Mr. EDGAR. Well, Jamie Whitten suggested that it would be within an hour. They have to wait 1 hour before it is brought up. About half of these projects are in our omnibus bill. And these are different projects than were——

Mr. ROE. Was it discussed the last time on the floor?

Mr. EDGAR. Discussed in terms of the appropriations committee. These have evidently been put in on the Senate side. I just find that, you know——

Mr. ROE. Are you going to review them?

Mr. EDGAR. We are going to review them.

Mr. ROE. OK. All right.

Mr. EDGAR. I apologize to the committee for the interruption.

Mr. ROE. No, no, that is all right. Review them and then we will get back together in about a half hour.

All right. You spoke in your testimony to the cumulative effect, which the committee understands. Has there been any work done in your 1977 report or the report you are doing now in reference to cumulative effect?

Have you anything ongoing that is actually getting into a review, or a study, or anything of that nature of cumulative effects?

Mr. SIEGEL. I am not aware that we have delineated this or quantified it. I think that everything that is generally known between our agency and EPA tells us that it is cumulative.

Mr. ROE. Well, all I am trying to get at here is I am wondering if we should be pursuing in our thought process what you speak to in

part of your testimony, which is on page 4 under general comments on nonpoint-source pollution. And I quote:

> It can be difficult if not impossible to determine the extent of an individual farmer's responsibility for a water quality problem, especially when the problem will be experienced downstream and offsite from where the pollution originates.

And then you go on to say:

> Therefore, it would be neither practicable nor equitable to force individual agriculture landowners to alter their land management practices under a regulatory program.

I think it is a very important statement. So we are coming back and saying, however, that if we get into a point of cumulative effects, we should not be setting up some regulatory function that would make the farmers, who were contiguous to where cumulative effects go into other special types of work if we are not going to make everybody do it.

Is that a fair commentary?

Mr. SIEGEL. That is right.

Mr. ROE. You see, that is very similar to the PCB problem we have in the Hudson River. That is the point I am trying to get in the record.

So you are saying that from your observations, studies, and the work you are doing and your management programs, it would be difficult to pinpoint any particular farm operation or agricultural operation to be the culprit. That is because you are dealing with cumulative effects. Any regulatory or any work that would go on ought to be evenhanded and uniform so that one person is not penalized because they are in a particular section of outfall from their properties into the rivers where you would have heavy accumulations of pesticides or whatever. Call them hotspots. It would be impossible to, would you say, to pinpoint that responsibility.

Mr. SIEGEL. That is right.

Mr. ROE. The nature of the beast, so as to speak. Is that a fair commentary?

Mr. SIEGEL. That is right. You do not find out about this water-quality problem until many, many years of sedimentation have occurred from many, many different sources.

So we get back to the approach of prevention by suitable management practices on the land, which happen to be good practices from other standpoints as well. They preserve topsoil and keep it from washing away.

Mr. ROE. You mentioned in your testimony on page 5 that some of the pollution occurs naturally. For the record, I am aware of some of that, but would you just want to get into the record what we would be talking about in that direction?

Mr. SIEGEL. Here are some examples: natural erosion of streambanks, which has nothing to do with the human activity along the stream; soil sedimentation of a natural level that will always go into the stream no matter what the human activity is; natural salts that dissolve the oxygen demand. These are things which occur naturally without any causes from human behavior.

Mr. ROE. Well, then, what I am trying to get at is our definition of pollution that man has made does not necessarily stand as something newly discovered. You have heavy sedimentation or a lot of

siltation and things of that nature, that has been going on since time began, so as to speak.

Mr. SIEGEL. Sure.

Mr. ROE. And, therefore, it is something that creates—that develops itself in the natural cycles.

Mr. SIEGEL. That is right.

Mr. ROE. So that has to be dealt with in the nonpoint source relationship, too.

Mr. SIEGEL. That has to be——

Mr. ROE. What I am getting to, we had testimony from San Antonio yesterday, which has experienced wide growth and the whole bit. They have their sewage-disposal system going and they have intermittent flow in streams there. And consequently they are the source of the major sustained flow—I have forgotten the name of the river, so as to speak, which would not have occurred naturally anyway.

So that there is an interrelationship of what happens in the natural cycles before man got on to the area and how that relates.

That is all part of the nonsource relationship.

Mr. SIEGEL. But when you are deciding who is going to pay for a particular condition——

Mr. ROE. You make a very important point there. And that was a very important point made yesterday, that the idea that we speak of people being charged a fee, in their home sewage treatment is only part of the story. Because if we are putting up 75-, or 65-, or 55-percent Federal matching funds that still is coming from the whole pot. So there is a relationship not only of the user of the facility needs a sewer plant as the relationship that both the benefits—it also applies back to the general public. Do you understand what I am trying to get at?

Mr. SIEGEL. Yes.

Mr. ROE. OK. We want to just make that point.

And I think you followed further again in your testimony on page 5, and I quote from that:

> Pollution resulting from human activity may be effectively controlled, while treatment of pollution from natural nonpoint sources may not be economically feasible or even desireable.

I think that was an important point. I have more questions, but let me defer to the gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman.

I, too, want to commend you, Mr. Siegel, and the Department on an excellent piece of testimony. I think you outline in just plain commonsense terms what many of us—and I happen to be a farmer—really know for a fact, but lots of people do not completely understand. And it has to be explained in these kinds of terms.

What year was the Soil Conservation Service first authorized by law?

Mr. SIEGEL. 1935.

Mr. STANGELAND. 1935. And how many millions or billions has SCS expended to attempt to get farmers to adopt good management practices? Do you have any idea? Submit it for the record.

What I am leading up to is that we have had SCS since 1935, and I believe it was in the "Futures of Agriculture," the booklet put out

by USDA about 3 years ago, after 2 years of study by then Secretary Bergland, that showed there was more water and wind erosion of soils today than there was in the Dust Bowl days of the thirties when soil conservation was first started.

And that is fairly obvious because farming practices have changed from everyone having some cattle, and grass, and a pasture, and hay land to current intensive farming practices involving a great increase in the use of fertilizers, herbicides, pesticides.

It seems like the faster we run the behinder we get in this problem of erosion and pollution of streams.

[The following was received from Mr. Siegel:]

Committee request. Provide information as to the total amount of technical assistance expenditures since 1935.

Response. See enclosed table.

Soil Conservation Service

[Conservation technical assistance obligations]

Fiscai Year:	
1936	$790,974
1937	2,628,424
1938	4,076,902
1939	7,377,783
1940	13,083,529
1941	14,648,148
1942	18,973,899
1943	21,394,311
1944	21,880,272
1945	27,913,546
1946	32,952,629
1947	43,070,274
1948	37,769,128
1949	46,584,787
1950	51,426,026
1951	51,556,288
1952	53,842,054
1953	57,504,630
1954	56,344,862
1955	58,204,132
1956	62,237,407
1957	66,247,877
1958	74,726,155
1959	79,980,282
1960	81,323,566
1961	88,013,104
1962	88,906,267
1963	93,396,849
1964	96,527,266
1965	103,164,725
1966	107,062,183
1967	111,264,748
1968	113,973,973
1969	98,061,860
1970	108,296,802
1971	113,632,932
1972	126,492,925
1973	128,150,047
1974	137,570,525
1975	153,829,696
1976	158,585,983
Transition quarter	44,228,290
1977	167,850,027
1978	189,165,641
1979	194,006,462

1980	204,239,457
1981	232,720,435
1982	240,943,631
1983	251,183,427

Mr. STANGELAND. What strategies does SCS have for the future to encourage and induce farmers to adopt better practices to prevent this kind of erosion? If we cannot do it by regulation, we have got to do it by enticements. And what new--are there any new strategies being developed?

And along that line, the chairman asked for a description of the ACP program. I would like to have you include in that description what farming practices are eligible for ACP payments.

But did you have some new, innovative strategies that are going to encourage farmers to husband their soils more carefully and as a result help in the problem of nonpoint soil pollution?

Mr. SIEGEL. I will submit additional information on that matter.

[The following was received from Mr. Siegel:]

Committee request. Provide a listing of practices eligible for an cost sharing under ACP and RCWP.

Response: Enclosed is a listing and description of ACP conservation practices and RCWP best management practices (BMP's).

(U.S. Department of Agriculture, Agriculture Stabilization and Conservation Service: ASCS Handbook, "Agricultural Conservation Program Development and General Provisions", for State and County Offices, August 29, 1980. ASCS Handbook, "Rural Clean Water Program" for all Offices, March 19, 1980, retained in subcommittee files.

Mr. SIEGEL. Well, I can open the subject briefly and then turn to someone who is a real authority, a practicing farmer like you, Peter Myers, chief of the Soil Conservation Service who is sitting here at my right.

The figures on soil erosion, it is true, are quite serious, give us great concern. Intensive, year-in-and-year-out continuous cropping of row crops is giving us this problem. We are working our good land harder and we are working a lot of additional marginal lands that should not really be in crops. It should be used for pastureland.

The statistics are serious, but along with the statistics we have a tremendous awareness on the part of today's farmer that he is seeing his soil wash away, and blow away, and that this is a precious resource that he cannot permit to have dissipated.

Fortunately, just as there is a tremendous increase in the amount of erosion, there has been a tremendous increase in the awareness by farmers of a new technique called conservation tillage. At a minimum, conservation tillage involves the use of implements and plows that do not disturb the soil as much as the traditional moldboard plow. The most comprehensive type of conservation tillage is "no-till," which is a system of not plowing up the residue from a harvested crop, leaving the residue on the soil all winter, leaving it there through the spring, and then planting the new crop down through the residue.

The benefits are that the presence of the crop residue holds the soil, prevents the soil from washing or blowing away and preserves moisture in the soil. This was a great help to many farmers during this drought. And this also saves the labor and the energy needed

to fuel the tractors that would go over the field and make many trips just to plow up the residue in the past.

Now, whether it is conservation tillage or no till, the different forms of conservation tillage are now being used on about one quarter of America's crop land. And this has been a tremendous increase just in the last decade. And at this point I do not want to say any more, because I have a practitioner of no till sitting right beside me.

Mr. MYERS. He has given you all the answers, Mr. Stangeland, but I feel very strongly that the farmers themselves are going to innovate these changes. We are concentrating along with the Extension at State universities on showing the farmers the economic benefits of these tillage practices because we feel very strongly, and you being a farmer would know, that you—it is hard to get everyone to adopt something on an ethical basis.

So we are trying to show, in dollars and cents, the soil loss, how many dollars you are losing when you lose x amount of topsoil. And we are also educating and working with Extension to show the farmers what they can save when they use the different types of conservation tillage.

And you alluded earlier to, you know, what have we been doing in these years, why is the soil loss so great. The real problem that I see traveling the country is we are farming land probably since the middle seventies that we should not be farming. It should be in grass and trees, but this is a free country and we can do this. And we have put a lot of highly erodible land into production since the price of cattle went down and the price of beans and wheat went up in the middle seventies, which you well know.

But we are working very actively with the farmers, with the Extension to promote these tillage practices along with many other things.

There is cost sharing from ACP on some of these tillage practices to directly help a farmer buy, say, a no-till planter. So there is a real massive—I think there is a revolution going on in the farm country, and the farmers themselves are going to carry the brunt of it, I really feel. Secretary Block does, too.

Mr. STANGELAND. Well, I see the revolution myself as far as no till or minimum tillage. I think it is a phenomenon that has happened within the last 5 years. But no till and minimum tillage have been around for a long time, and it has taken a long time for farmers to accept it.

I guess what my question is is how do we stimulate things like this, not only minimum tillage but strip cropping, contour farming, and terracing in some areas that need it very badly?

I do not see that severe kind of erosion in my district because it is a reasonably flat land which does not erode from waters. There is some wind erosion.

But I know Ed Jones of Tennessee, the chairman of the Agriculture Committee's Subcommittee on Conservation, Credit, and Rural Development, is very concerned about erosion in Tennessee. And I have seen slides that he has compiled of the terrible gullies that are cut in, I think it is western Tennessee, an intensely farmed area there.

I think SCS has to make some recommendation to use methods of enticing and stimulating new and better practices. A lot of farmers just do not see those dollar-and-cents figures, do not relate to them. They have the old notion that you have to plow the stuff down in order to get a crop the next year.

And some land does have to be plowed. Some land is not conducive to minimum tillage, but most land is, and I just think SCS has to really scratch its head for some new ideas. And maybe there are some incentive payments that are needed to get the job done.

Mr. Siegel, yesterday Mr. Ruckelshaus indicated USDA and EPA have agreed that USDA will support EPA's efforts to address, on a priority basis, nonpoint-source controls in each State as a part of your ongoing national conservation program.

Would you describe to the committee how you intend to implement and carry out that agreement?

Mr. SIEGEL. In each conservation district, you have an office of the Soil Conservation Service, and our employees will be encouraged to take a new look at nonpoint-source pollution especially in those areas that have been designated by EPA for particular action. The nature of nonpoint-source pollution is that it is very site specific. In some areas you have a problem that needs to be addressed and should become a great concern, in other areas, not so much. We are waiting for EPA to get us the data to show us where we need to put our resources.

Mr. MYERS. Could I address that, too?

Mr. STANGELAND. Sure.

Mr. MYERS. Congressman, we are right now in the process and just about ready to go to the field with a new training program on water quality. We are going to train all of our technicians and DC's in the field on up-to-date methods of looking at problems and solutions for water quality to go along with their sediment work.

Mr. STANGELAND. Under section 208, the Department of Agriculture has significant responsibilities with respect to the rural clean water program.

Would you summarize for the committee the agency's experience with the RCWP and what recommendations do you have for improving the program?

Mr. SIEGEL. Why don't you go ahead.

Mr. MYERS. Well, in most cases in my experience with these projects, they have done excellent work as far as controlling water quality. We have closely monitored all of these, especially within the last 6 to 10 months, part of our staff, ASCS, has reviewed each one, made some recommendations for changes in some, recommended in a few cases that we drastically change some.

Most of these rural clean-water projects have been very effective in controlling water quality. They have all done a good job of sedimentation control.

Mr. STANGELAND. Do you have any recommendations for improving the program?

Mr. MYERS. I could submit them for the record. Offhand I do not.

Mr. STANGELAND. I would appreciate it if you could do that. I have no more questions.

[The following was received from Mr. Siegel:]

Committee request: Provide recommendation for improving the RCWP.

Response: It is important to distinguish between the Rural Clean Water Program (RCWP) authorized by Section 208(j) of the Clean Water Act and the experimental Rural Clean Water Program funded by the Agricultural Appropriation Acts of 1980 and 1981.

Section 208(j), Public Law 95-217 authorized the Secretary of Agriculture with the concurrence of the Administrator to EPA to establish and carry out a nonpoint source pollution control program. Regulations were promulgated under 7CFR635 and $75 million were requested in the President's 1980 budget.

The Congress appropriated $50 million in FY80 and $20 million in FY81 to carry out an "experimental" program as a part of the Agricultural Stabilization and Conservation Service (ASCS) budget. The experimental program is being carried out in 21 projects identified in response to the above Committee Request #4 under 7CFR700 regulations.

The following suggestions are offered in the event the Congress determines to enact a nonpoint source pollution control program. They do not imply that the Administration would favor such legislation.

A nonpoint source pollution control program should serve as the implementation vehicle for water quality management plans developed in the States i.e. the program should not redo what was done under Section 208 or other water quality planning efforts.

Implementation should include the development of project specific plans prior to initiation of work.

The program should be highly focused or targeted. It should not be spread unformly across the country.

The program should miximize the use of existing USDA program authorities and interagency arrangements.

Mr. ROE. Are there any further questions? The gentleman from Georgia.

Mr. ROWLAND. Thank you, Mr. Chairman. Many States I know of enacted soil erosion and sedimentation legislation. We have in my own State of Georgia. Could you give me some idea of about how effective this is nationwide in addressing the problem we are talking about?

Mr. SIEGEL. Congressman, are you referring to regulatory programs?

Mr. ROWLAND. Right. Enacted by State legislatures.

Mr. SIEGEL. I think they are going to have a much greater effect as time goes on. A lot of them have been newly enacted. The original form of many of these State laws was to regulate urban runoff but exclude agriculture. More and more of them have addressed agriculture runoff, and we have, perhaps, 15 States around the country that have begun to take the regulatory approach. But much of it begins at the local level with soil and water conservation districts, and these soil and water conservation districts are given the power to bring complaints against particular farmers who are causing a nuisance to their neighbors.

We believe such programs should be emphasized at the local level so that farmers are being addressed by their peers. I think there is a great amount of the iceberg that we do not see because a lot of these problems are cleared up by local conciliation with the threat of regulation being the effective thing that brings parties together.

We think in the Department of Agriculture that this is one of the State and local responsibilities that should come to the fore. The job of curing soil erosion is not exclusively a Federal function. The State and the local governments should not wait for Washington to come and take care of the entire problem.

We offer voluntary programs. We offer programs of voluntary technical assistance, voluntary financial assistance.

Our programs are admittedly not going to reach every single farmer. We offer incentives, but many farmers are not willing to take our incentives. If some of these farmers are creating a problem, a site-specific problem with their lack of good management of their land, then it is a local regulatory matter. We are glad to see States and localities coming forth.

As for an overall effect, I think it is too early to tell and I think some of the effect we will never see because the existence of the sanction at the local level or at the State level is frequently enough to bring along a farmer who has a land-use problem.

Mr. ROWLAND. In your experience, do you think farmers are less concerned now with soil erosion than they may have been at one time. I ask this question because I can recall in years gone by that I would see fields that had terraces on them and I hardly ever see a field now that has a terrace in it.

And could you shed any light on whether or not you think—maybe because farmers are having a lot of trouble now, they are more concerned with getting their crops in and harvesting and they are less concerned about what is taking place with their topsoil now.

Mr. SIEGEL. The farmer has been in a tremendous squeeze with his rising costs and his declining prices for his farm products. Also, with the advent of a lot of the new equipment; some of the old terraces are not wide enough. They were built for older equipment. The new, wider equipment cannot work on a terrace. So unfortunately we have seen terraces removed from fields so that the new equipment could be used.

We have seen windbreaks cut down because the trees were getting in the way of the big equipment. Terraces have become a very expensive soil conservation technique, more expensive than in the past because of the labor and energy required to finance a terrace.

So it is unfortunate that many of the older terraces have been taken out and have not yet been replaced by newer terraces that are more amenable to new equipment.

However, conservation tillage is a management practice that does not involve constructing a terrace. It involves some special farm equipment. It involves additional attention to spraying and careful management by the farmer, but it is less expensive in terms of an extra capital outlay.

In conservation tillage, there are expenditures for spray and expenditures for certain kinds of equipment which the farmer might be replacing anyway. But nothing needs to be done structurally to the land as with a terrace.

So I think that maybe you will see fewer terraces around, but there are more opportunities for farmers to manage and handle their cropping through conservation tillage than you had in the past.

The terrace used to be our prime tool for controlling soil erosion. Now we have conservation tillage as well.

Mr. ROWLAND. And that is just, as if not more, effective than the terracing system.

Mr. SIEGEL. Well, I do not want to make a general statement. There are some fields which have such a sharp slope that conservation tillage cannot provide the sole answer. There are some areas where you need a combination of terracing and conservation tillage, but there are many kinds of farm fields where conservation tillage can do today what a terrace did yesterday.

Mr. ROWLAND. One other question I wanted to ask and you may have already addressed this question. We have talked about nonpoint sources of pollution and agricultural versus others, nonagricultural, some things that are controllable and some things that are not controllable.

Those things that are controllable, could you give me some idea about what percentage in general that is from the standpoint of agriculture?

Mr. SIEGEL. We will have to supply that for the record, the breakout between the uncontrollable and the controllable sources of stream sedimentation.

Mr. ROWLAND. Thank you very much, Mr. Siegel. Thank you, Mr. Chairman.

[The following was received from Mr. Siegel:]

Committee request: Provide an estimate of the percentage of nonpoint source pollution that is controllable.

Response: We do not have definitive information on a National scale concerning the percentage of nonpoint source pollution that is controllable. The degree to which NPS pollution can be controlled is site specific and is a function of the type of pollutant (pesticide, sediment, salt, etc.) and watershed characteristics. It is for these reasons that USDA believes that careful planning is a prerequisite of BMP implementation.

Several research activities in EPA, USFS, ARS, and elsewhere are providing indicators of the degree of controllability. Projects being carried out under the experimental Rural Clean Water Program and other USDA program authorities are providing answers relative to both the technical and institutional controllability of NPS pollution.

Existing technology indicates that it is possible to control man induced nonpoint source pollutants. Careful planning prior to BMP implementation can determine the most cost-effective level of control relative to the specific water use impairment and the watershed characteristics.

Mr. ROE. The gentleman from Minnesota.

Mr. OBERSTAR. Thank you, Mr. Chairman.

Mr. Siegel, I am very much impressed with your statement. You provided us with a wealth of factual data and more importantly, a positive attitude on the control of nonpoint-source runoff. I think that is a very, very commendable approach to the issue.

I know that EPA has been having discussions with the Department on closer coordination of ASCS and the Forest Service. What is the status of those discussions?

Have you reached any agreements, tentative agreements?

Mr. SIEGEL. Chief Myers has been taking part in those discussions and will reply.

Mr. MYERS. We are at the stage where we are drafting a memorandum of understanding at this point between the agencies. But it is still in the draft stage. We have been working very intensely on this and we have been getting great cooperation from EPA, and I think we are well on the road.

Mr. OBERSTAR. Very good. Do you feel that you have the adequate financial and staff resources to include water quality as a high priority in land management against nonpoint-source runoff?

Mr. SIEGEL. We feel that we can satisfactorily address nonpoint-source pollution with our existing manpower by judicious use of our resources. Our national conservation program will be targeting 25 percent of our funds for financial and technical assistance to areas of certified as the highest resource need.

We are taking our program away from a first-come-first-served approach around the country and we are focusing and sharpening our priorities. Our big priority in the national conservation program is prevention of soil erosion. And that is going to get the lion's share of the targeted money that we are spending.

Mr. OBERSTAR. If you are targeting your financial and human resources, you will be able to do that?

Mr. SIEGEL. We are targeting to put our resources where the need is greatest. We are not seeking any great additional increase in funds for the soil conservation program because we are confident that what our program needs more than additional funds on the top is better management, targeting, and focusing of the funds we are spending presently.

Mr. OBERSTAR. If funds were available through EPA under the 304 program where EPA can enter into agreements with other departments and agencies—there is authority in the law. There is $100 million authority. It has not been appropriated, but if it were available, would that be helpful?

Mr. SIEGEL. If there were an additional source of funds that we could train on water-quality problems, I think we could use those funds effectively.

Mr. OBERSTAR. So long as you did not have to put it in your budget; is that right?

Mr. SIEGEL. This is not a budget hearing and I am not going to give you a budget answer at this time.

Mr. OBERSTAR. All right. Now, the Department has had long-term experience with cost sharing. You have had a history of very successful experience with it.

Has it led to lack of action where funds have not been available, where funds have been theoretically available but no appropriations or no grants provided?

Have you had experience with that kind of thing? Has it delayed action on the part of farmers in conservation practices?

Mr. SIEGEL. I do not think there is a general answer. For example, in Pennsylvania, I visited a rural clean-water project in Lancaster County, Pa., a very heavy dairy-producing area. A complete manure-storage system was installed on a dairy farm with the help of rural clean water programs cost-sharing funds.

I think there was a $45,000 payment made to this farmer to put in the last word in a complete, modern, dairy-storage system. It was a very impressive thing, a big, blue metal tank.

Now, this is very helpful to the farmer. It means he can store the manure. He does not have to cart it out every day. It is a benefit to his balance sheet and his cost of operation to have this.

However, he could not have installed such a fine system with his capital resources unless there were a Federal payment available.

Now, that is the type of situation where I think without a cost-sharing program we would not have gotten that farmer into the state-of-the-art practice which takes his farm off the list of farms that were feeding pollutants into that little stream flowing next to his cow pasture.

On the other hand, some of the nonpoint-source pollution problem is indistinguishable from the general problem of controlling soil erosion. And the most effective thing and the most promising way to combat soil erosion is to convince farmers that it is in their short term as well as their long term interest in dollars and cents to practice soil conservation by means of conservation tillage.

Mr. OBERSTAR. I think that is key. I think one of the most telling points of your testimony is your observation on which page I cannot recall, that you have to demonstrate to the farmers that there is a direct benefit to them because most of the benefits are to downstream occupants of the land or riparian downstream owners who see cleaner water. But you do not see that immediate benefit to the individual farmer.

Mr. SIEGEL. If a farmer is growing corn or soybeans, if he practices conservation tillage, this may not require any cost-sharing payment to him. There are cost-sharing payments available, but most farmers are doing this without a cost-sharing payment.

They are doing it with technical assistance from the Soil Conservation Service, or possibly the Extension Service in their county, or possibly by talking to their equipment dealers and their pesticide dealers. And this is happening because it is in the culture. This is very well ingrained in the farm culture today and we want to stimulate it.

Mr. OBERSTAR. I am quite aware of that. Do you have or could you provide for the committee a compilation of the success stories such as you described a moment ago about the appearance of the farmer who was able to keep his manure stored in a shed without having to haul it out. I mean, you must have a number of success experiences of that kind that would be helpful for the committee.

Mr. SIEGEL. That would be in our monitor in for the rural clean water program and we will include that information for you.

Mr. OBERSTAR. I think if we had a list of such success stories, it would be very helpful to us.

Thank you very much for splendid and candid testimony.

Mr. ROE. Are there any other questions from the members?

[No response.]

Mr. Siegel, Mr. Myers, and Mr. Harper, we want to thank you very much for your testimony. You have been extremely helpful in setting the foundation for our review of the nonpoint source issue. We appreciate looking for the other documentation as part of our record at your earliest convenience.

So, thank you very much for being with us this morning.

[The following were received from Mr. Siegel:]

Committee request. Provide examples of nonpoint source pollution control success stories.

Response. See enclosed reports and articles.

(Note.—Reports and articles referred to were retained in subcommittee files.)

U.S. Department of Agriculture:

The Model Implementation Program—A Cooperative Effort by USDA and EPA for Water Quality Management: An Overview (ESCS Staff Report NRED 80-13) September 1980.

Article from Jan 1983 issue of Soil, Water People, published by the Delaware County New York Soil and Water Conservation District.

Article from the Daily Journal, Franklin-Greenwood, Indiana, Nov. 11, 20, 1980.

Article from the Conservation Advisor, Maple Creek Model Implementation Project, Clarkson, Nebr., April 1981.

Progress and Status of the ACP Hall County Water Quality Special Project, prepared by the Conservation Section of the Nebraska State ASCS Office 1979 Fiscal Year.

Pamphlet on the Blue Creek Watershed Project, Ilinois EPA, Dec. 1981.

The Model Implementation Program—Leasons Learned from Agricultural Water Quality Projects, February 28, 1983.

Broadway Lake Watershed Model Implementation Project, Anderson County, South Carolina, 1982 Final Report.

Maple Creek Nebraska Model Implementation Project, Final Report, December 30, 1982.

Insights into Water Quality, Indiana Heartland Model Implementation Project—Status Report, March 1981.

Spring 1983 issue of Extension Review, U.S. Department of Agriculture.

Committee request. Identify innovative techniques being used to get conservation practices applied.

Response. USDA continues to stress the application of systems of conservation practices that solve soil and water resource problems in a cost effective manner. Additional emphasis has been provided by the completion and adoption of the National Conservation Program (NCP) described in the enclosed report. Examples of innovative techniques include:

Emphasis on the use of reduced tillage systems (conservation tillage, no till, etc.) to reduce erosion, sediment, and sediment borne pollutants while conserving energy, time, and labor associated with crop production. To date, almost ⅓ of the Nation's cropland is farmed under some form of reduced tillage system.

Emphasis on the use of modern conservation practices which are compatible with today's farm equipment and farming systems. These practices include the use of new terracing concepts (tile-outlet terraces, grassed back terraces) in place of more traditional designs to control erosion and the use of broadbase, flat channel terraces to conserve water in low rainfall areas.

Emphasis on drip, trickle, and sprinkler systems of irrigation to minimize the amount of water used in irrigation.

Increased use of computer and laser technology to increase the quantity and quality of technical services provided to farmers and ranchers. This includes the development of computer models that permit technicians and landowners to quickly evaluate conservation alternatives and their impact on resource conditions, production, and productivity.

Many conservation districts have purchased or leased conservation equipment, especially no-till planters and made them readily available to farmers who want to try this technique. This has greatly increased the rate of adoption of conservation tillage systems.

(Note.—The Report referred to U.S. Department of Agriculture, Soil and Water Resources Conservation Act, "A National Program for Soil and Water Conservation", 1982 Final Program Report and Environmental Impact Statement, Issued September 1982, was retained in subcommittee's files.)

Committee request. Provide information about the status of the agreement between USDA and EPA concerning nonpoint source pollution control and recommendations as to how it can be implemented.

Response. Negotiations between the agencies are progressing satisfactorily, but the agreement has not been executed as of this date.

The disussions to this point deal primarily with the means for effectively coordinating the USDA priorities contained in the National Conservation Program with the priorities of the EPA including the use of existing authorities to address nonpoint source pollution problems. Any change in existing authorities stemming from reauthorization of the Clean Water Act would necessitate reconsideration or modification of the agreement.

Our next witness is the Honorable James L. Oberstar, a very distinguished senior member of this committee, and one has been a great leader in this Nation on water resources development, water quality, and pollution control.

So, Jim, without further ado, if you would proceed with your testimony.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF HON. JAMES L. OBERSTAR

Mr. Chairman, and distinguished Members of this Subcommittee, I am pleased to appear before you today to speak on behalf of H.R. 4037, the Nonpoint Source Control Act of 1983.

Mr. Chairman, in establishing an implementation program to control nonpoint sources of water pollution, this Subcommittee will be closing the last major gap in the Clean Water Act. This Subcommittee has over the years established and refined the programs to control municipal and industrial point sources. Under Section 208 we laid the groundwork, accumulating the data base and identifying Best Management Practices (BMP's) for a nonpoint source implementation program. But such a program has never received the Federal leadership needed to truly bring nonpoint sources under control.

The Nation pays each year a heavy toll, in dollars and in lost resources, for this lack of leadership. In many States, nonpoint sources are now a major impediment to achieving water quality standards. Water quality in our rivers and streams—in moving water—is seriously degraded by various forms of run-off. Our still waters—our lakes and estuaries, the most biologically productive waters—are the final setting places for water-borne pollutants, including choking sediments, excessive nutrients, and toxics.

Preliminary information gathered by the Conservation Foundation indicates that the total economic costs of sediment and pollutants associated with erosion may amount to as much as $2.5 to $3 billion per year. Nonpoint sources carry not only sediments and nutrients but pesticides, heavy metals, and virtually all other toxic substances. It is a serious problem in urban and suburban areas as well as in rural areas.

Many States and substate organizations have gone ahead on their own, building on the experience gained through Section 208. The National Association of Conservation Districts conducted a survey which indicates that 44 States are taking some action to control agricultural nonpoint sources. A survey by the National Council of the Paper Industry for Air and Stream Improvement indicates that 40 States are moving to implement programs for silviculture nonpoint source controls. There is considerable interest in doing much more, if funds and other encouragement from the Federal Government are forthcoming.

My bill would provide the incentives needed for a full-scale implementation program.

The bill recognizes first that, unlike point sources of pollution, nonpoint sources do not lend themselves to a national control program with national regulations and standards. Rather, controls must be developed at the State and local levels, to address local conditions. The Federal role, therefore, is to provide encouragement and leadership, both financial and other, to elevate nonpoint sources to a national priority; to assure that the Federal investment is wisely spent, and that implementation is moving forward expeditiously.

The bill acknowledges that an implementation program must, at this point, rely on incentives from the Federal level. It does not preclude enforcement; but it recognizes that the decision to establish an enforceable program must be made at the local and State levels, not at the Federal level.

H.R. 4037 further recognizes that, while there is much still to be learned about nonpoint source controls, we know enough now to begin a serious implementation program. The bill thus does not establish a whole new planning process. Rather, it builds on the knowledge, the experience, the plans already established and Best Management Practices (BMP's) already developed under Section 208 and other sections of the Clean Water Act. It is an implementation program, not a planning program.

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Finally, my bill recognizes that the nonpoint control process must begin at the local and State levels, by those who will be involved in implementing the plans. It requires the States, in developing their implementation plans, to work closely with local agencies, such as conservation districts, 208 agencies, watershed districts and others which have experience in controlling nonpoint sources.

Briefly, H.R. 4037 requires States, working with local agencies, to develop 4-year implementation plans, specifying problem stream segments to be addressed, categories and subcategories of sources to be controlled, BMP's and other measures to be used, and to propose expeditious timetables for achieving these controls.

The bill requires States, working with substate agencies, organizations and individuals, to propose their own timetables for expeditious achievement of their goals, and to report to the Environmental Protection Agency each year on their progress in meeting these self-selected timetables. I underline the word expeditious; States are to be bold as well as realistic in setting their goals, and EPA is to insist on ambitious plans, as long as there is a realistic chance of success.

Once the State submits its implementation plan to EPA, the agency has 6 months to review it. Unless the Administrator specifically disapproves all or parts of the plan, it is automatically approved. EPA may disapprove all or portions of a plan if the State does not have adequate authority to implement it, if it is not sufficiently expeditious, or if it is otherwise inadequate.

If a State fails to submit a plan, or if its plan is not approved, a local agency may, with the permission of the State, assume implementation for its area. Such an organization must have a history of experience in nonpoint source controls, and have authority to implement a control program.

Also, a State may request EPA to provide technical assistance in developing a portion of its overall plan. The State would have to implement that portion.

States are encouraged to use programs under other laws to complement this bill wherever possible.

There is some evidence that other Federal programs may work at odds with nonpoint source controls, placing farmers or others in Catch-22 positions, or encouraging practices which would counteract nonpoint source control measures. To better coordinate the nonpoint source control effort, the bill requires the States to identify Federal programs which run counter to their nonpoint source control plans, and to recommend changes in these programs. EPS would forward these recommendations to the appropriate Federal agencies, which would be required to consider the States' comments and, to the extent possible, administer their own programs in a way that helps States implement their plans.

I hope that the cumulative comments from the States, together with their recommendations for change, would be helpful to Federal agencies in solving a problem which reaches across agency mandates, and effects the wealth of this Nation: Our lands and our waters.

The bill also extends Section 304(k), which authorizes EPA to enter into agreements with other Federal agencies, and provides supplemental funds for programs under these agencies which could assist in controlling nonpoint sources of pollution.

The bill contains a provision whereby a downstream State with an approved implementation plan may, if its waters are being adversely affected by upstream pollution, request the Administrator to call a management conference of States along the water body, and to resolve the problem between the States. I believe such an approach is fair to those States willing to do a good job. We cannot ask a State to spend its financial resources for water cleanup if its own citizens cannot enjoy the benefits, or if they are in fact damaged by pollution from another State. The management conference concept goes back to the earliest days of water pollution control and the Federal Water Pollution Control Act of 1956. I believe the negotiated approach can prove a useful means to resolve nonpoint source issues among States, and assure that those States which are willing to control nonpoint sources will not suffer from another State's indifference.

In developing their implementation plans, and in collecting whatever additional data are necessary, States are encouraged to use funds under Section 106, 205(g) and 205(j) of the Clean Water Act.

For implementing the plan, the bill provides $150 million per year on a 50/50 matching basis. The tools available would include education, training, technical assistance, cost sharing and other services.

I know that the Administration has serious concerns about cost sharing, fearing that the promise of funds, however diminutive, will encourage people to wait for dollars to become available rather than begin implementation now. I share that concern, and hope to focus on this subject throughout today's hearing. On the one hand there is clearly not enough money available for a full cost sharing program. On the

other, cost sharing may serve a purpose where the job will not and cannot be done without it.

As a further incentive to States to do as much as their own resources permit, the bill contains no distribution formula. Rather, States are encouraged to come in for as much money as they can match, although there is a cap of 15 percent of the appropriation per State.

Congress will keep close watch over how implementation is progressing during this first four years of the program. EPA is required to report annually to Congress on how the program is working, and to report, by January 1, 1988, on whether this incentive program is working, or whether stronger measures are necessary.

While this bill establishes an implementation program, it is also a learning process. We will need, between now and further legislative action, to determine what information we still need, and to make sure this program will provide the answers we will need when we revisit the legislation in 1988.

I look forward to hearing the testimony of our other witnesses today, who are the real experts in nonpoint source controls.

Mr. ROE. Please proceed.

TESTIMONY OF HON. JAMES L. OBERSTAR, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr. OBERSTAR. Thank you very much, Mr. Chairman, and my apologies to you and our colleagues on the committee for not being here at the outset of the hearing. I was delayed by a car accident that caused a terrible traffic jam.

Mr. Chairman and colleagues, since the 1972 Water Pollution Control Act, the Environmental Protection Agency, in cooperation with States and agencies throughout the United States, has worked very diligently on section 208. That legislation included section 208 as an areawide wastewater-planning program with the visionary sense that we needed to address the problem of pollution from nonpoint sources, but we didn't have the information with which to address the problem.

Therefore, section 208 was considered essential to the development of a data base, which we have, to delineating best management practices, which has been done, and at this point, 11 years later, with an investment of half a billion dollars, we do have data, best management practices, numerous plans at State and multicounty agencies, but few control programs actively in place.

At risk, as a result, are streams where sediment is flowing from runoff of land that is not properly managed. Estuaries and lakes which literally act as catch basins for sediments, nutrients, toxics, heavy metals, pesticides. Those areas, cannot cleanse themselves as readily as fast-running water in streams.

It has been estimated that the negative effect of this kind of nonpoint-source runoff, the failure to put in place management programs, is $2.5 to $3 billion annually in lost resources, in the land that is losing nutrients, and in areas that are losing valuable topsoil, about the equivalent of the State of Ohio each year.

Still, with the help of the National Association of Conservation Districts, 44 States have developed some form of an action program to control agricultural runoff. Some 40 States have developed action plans to deal with forest runoff, but these are inadequate, and what we really need now is to move from the planning stage to

the implementation stage, and that is what my bill, H.R. 4037, will do.

Nonpoint-source control does not lend itself readily to a national program with a single national standard. If there is any lesson that we have learned for the last decade, it is that States and localities must be involved, because problems vary from one area of the country to the other. The Federal role must be one of leadership, must be one of providing financial incentives, and establishing priorities and stimulating the States and localities to do something.

That is what I have developed in this legislation. It is an implementation, not a planning bill. It builds on the 208 experience, but passes beyond that stage. It envisions the development by States and localities of 4-year implementation plans.

First, to specify problem stream areas; second, identify the source categories, the various categories of sources of nonpoint runoff problems which must be controlled, and, third, to identify the best management practices that are most adaptable for each area that should be used in such programs, and, fourth, to establish timetables within which to meet these goals.

The plans are to be made by the States in cooperation with conservation districts, in cooperation with 208 agencies, individuals, and localities. The States are, then, to report annually to EPA on the progress that they are making with the nonpoint-source program.

I am hoping that States will be ambitious but realistic. I think it would be unwise to insert a number of deadlines restraining the action of States, or localities, or multicounty agencies. We had too much of unrealistic deadlines set in the 1972 act. There were 135 such deadlines in that act, and my recollection is that not a single one of them was met, but I do think we have to keep the heat on both EPA and the States to implement programs.

Therefore, I choose the partnership approach. You give EPA some 6 months to review the plans submitted by the States, but if EPA does not disapprove the plan, either all or in part, then it is automatically approved.

EPA would have authority to disapprove a State's plan if the State did not have adequate authority, if it has not set an expeditions timeframe, or if in some other fashion it is not adequate, and that some provision of the bill that I think we ought to tighten up or be a little more specific about.

If a State does not submit a plan, or if the plan is not appropriate or effective, a local agency can act and go to the State and say: "Look, you have been dragging your feet, you have been waiting around. We have something we would like to do. Give us the authority to go ahead." The State will do that. They can go directly ahead with their plan, as long as they have the experience and the necessary legal authority to do so, and they can proceed with their own nonpoint-source program.

I was interested in the testimony of the previous witness about cross-compliance or coordination of State plans with other Federal agencies. My bill provides that a State would have authority to identify Federal programs that have regulations whose fundamental law runs counter to their nonpoint-source program, and would

allow such States to recommend changes to EPA which then would forward those recommendations to the Federal agency.

The previous witness suggested that Executive Order 12372 could accomplish the same goal, and it might well indeed be able to do so, and I will review that matter further; 895 authority in the past has not been adequate. I did not think it would be sufficient in the future. We don't have much of a track record with this new Executive order, but it might well serve that purpose.

At any rate, the point of the legislation is to achieve consistency among Federal programs with State programs. We sure as the dickens don't want to have a State establishing a plan only to find that a Federal Government agency is doing something that undermines or runs directly contrary to that State's proposal.

The bill also provides that downstream States may ask EPA to convene a conference of all riparian States, or those that are around a lake, or those that border on an estuary. They may ask EPA to convene a conference of all riparian States to negotiate an overall nonpoint-source-control program.

I think this practice, which was part of the initial 1956 Federal Water Pollution Control Act, proved to be a very successful program. It allows downstream States or watersharing States to express their concern with lack of progress by other participants, and to force action, but in a way that is—one in the sense of a conference of negotiation—rather than a hitting on the head with a hammer with a Federal law that nails people to the wall.

The funding recognizes that there is not enough money in the Federal Treasury in these times of limited budgets to provide grants for every need, and this bill proceeds on a cost-sharing basis, a 50-50 matching program, $150 million a year for 5 years, or $750 million. It is an adequate amount. It is certainly not all that would be necessary for the program, but I think if we can but appropriate the full amount, we will find States cooperating, and I think together with adequate targeting of resources, the job can be accomplished.

Thank you very much, Mr. Chairman. That is a summary of the legislation.

Mr. ROE. Well, we want to thank our distinguished colleague for a very splendid presentation. I think basically what you are saying is that we have laid the groundwork, primarily under the 208 section, the regional planning aspect, particularly on nonpoint, and now it is time to say: "Well what do we do with that? How do we implement it?"

How does that relate to the testimony that we have been receiving that roughly 50 percent of our pollution factors are nonpoint source? I think it is a very critical issue that has to be dealt with, and people have been asking us to deal with that issue. So I think your contribution has been very, very effective, as far as the committee is concerned.

The gentleman from Minnesota.

Mr. STANGELAND. Well, I just wanted to commend my colleague from Minnesota on an excellent presentation, and an excellent proposal, and one that certainly deserves a lot of study, and merit, and one that I think takes a commonsense approach. We all recognize

the problem of incentives to get States to do something. They need some help.

I think you make the point that there is a danger if we provide incentives if the States wait until the incentives are there before they do something. But some States, like our own Minnesota, have moved ahead well on their own. I see we are having testimony from Wisconsin, and they also have a good program. I think we have a good program through the pollution control agency, but one that can certainly be expanded and enlarged and improved upon.

I think you have got a good outline here.

Mr. OBERSTAR. Thank you, gentleman. I appreciate this, from practical experience, as one who has been on the land and understands the problems of farmers.

Mr. ROE. Would you want us to vote right now, Jim? [Laughter.]

Mr. OBERSTAR. I think we could take the vote right now in this room. I do think we can take heart from the testimony of the preceding witness, who presented some very, very practical observations, and indicated that the Department is willing to cooperate and work, and has been working vigorously.

Mr. ROE. Are there any further questions or comments?

We want to thank you very much, Jim, for your presentation.

Mr. OBERSTAR. Thank you.

Mr. ROE. Our next witness is Dr. Billy Bond, manager of Natural Resources and Economic Development for the Tennessee Valley Authority.

Dr. Bond, we want to welcome you to our committee, and if you would be kind enough to identify for the record your colleague.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF DR. BILLY J. BOND, MANAGER, OFFICE OF NATURAL RESOURCES AND ECONOMIC DEVELOPMENT

Mr. Chairman, I am pleased to appear before you today in response to your request for information about nonpoint source water pollution from agricultural and other land use practices, and about possible methods of reducing such pollution. My testimony is based on TVA's experience with nonpoint pollution since the 1930s. As a Federal agency with a regional perspective on natural resource management, TVA is interested in protecting the Tennessee Valley's natural resources and the Nation's investment in the TVA reservoir system. In the legislation that created TVA 50 years ago, the agency was charged by Congress—among its other obligations—with promoting the conservation, unified development, and wise use of natural resources in the Tennessee Valley. Although TVA has limited regulatory authority, the agency is a major force in the region for environmental protection and restoration. Citizens of the Tennessee Valley expect TVA to develop and publicize information on environmental concerns, and we believe they have confidence in our data, objectivity, and technical judgment.

Beginning in 1936, long before the Federal Water Pollution Control Act, TVA undertook a basinwide survey of water quality in the Valley and found that the most pressing source of pollution was sedimentation in streams and rivers caused by unwise agricultural and forestry practices. Today, almost 50 years later, sedimentation remains the most serious problem in the Valley. In addition, there are concerns about nonpoint source pollution from urban runoff, active and abandoned surface mining operations, and hydrologic modifications.

In this testimony, I want to share with you (1) the knowledge TVA has developed about the significance of nonpoint sources of pollution in the seven State region, (2) some of the lessons learned in working with other organizations to correct nonpoint source problems, and (3) recommendations for elements of a program to address nonpoint source pollution in a cost-effective manner.

NONPOINT SOURCE POLLUTION

In the Tennessee Valley, the most widespread nonpoint source pollutant is sediment from soil erosion. Excessive amounts of soil erosion from cropland, averaging 40 tons per acre per year and ranging up to 200 tons per acre per year on some farms, are seriously affecting water quality and fisheries in western Kentucky, western Tennessee, northern Alabama, and northern Mississippi. As a result of this and other factors, many of the Nation's streams and rivers do not meet the interim 1983 goal of the Clean Water Act for protection and propagation of fisheries populations. In addition, deposition of eroded topsoil in rivers and streams has seriously reduced drainage capacity causing extensive flooding and swamping of formerly productive cropland and pasture, damage to bridges, and massive timber kills. In one 8-county area of the western part of the Tennessee Valley, more than $11 million of damage is estimated to occur each year to agricultural crops and timber resources. In another 14-county area of west Tennessee the damage is estimated at $75 million each year. In western North Carolina, sensitive trout populations have been eliminated from agricultural watersheds with accelerated cropland erosion. Runoff of pesticides, nutrients, and bacteria from agricultural activities have degraded fish populations, increased nutrient loadings to TVA reservoirs, and could affect public health.

Sediment losses and associated acid runoff from surface mining operations is the second most serious nonpoint source problem. Past unreclaimed strip mining for coal has severely affected aquatic life, and runoff from abandoned mine lands is causing nonpoint source pollution in some locations in north Alabama, east Tennessee, and southwest Virginia. One especially troublesome area is Upper Bear Creek Reservoir, a TVA impoundment in north Alabama. The Upper Bear Creek project was built to provide recreation and a quality regional water supply for future economic development. Today these uses are being threatened by sediment buildup and acid runoff from abandoned mine lands.

Other mining activities are also causing serious nonpoint source pollution. Sediment from mica and feldspar mining in western North Carolina has destroyed natural aquatic communities in over 100 miles of the Nolichucky River. In many places, silt has buried aquatic plants and animals, altered feeding and spawning habitat, and suffocated fish by coating their gills. The silt has also constricted the flood-channeling capacity of area streams and has eliminated all flood-storage capacity behind Nolichucky Dam (Davy Crockett Lake). The subsequent retirement of the power units at Nolichucky Dam has resulted in an average energy loss of 50,000 MWh worth $1.1 million per year at TVA's current rates.

In many waters, designated uses continue to be impaired by nonpoint sources despite expenditures for point source abatement. A good example is the Ocoee River Basin in southeast Tennessee. For decades, water quality conditions in a 30-mile stretch of the Ocoee River have been adversely impacted by point and nonpoint source pollution from the Copper Basin. Initially 30,000 acres were denuded as a result of clearcutting and sulfate emissions from copper smelters. Industry has spent approximately $10 million to control point source pollution and reclamation efforts have restored some vegetation on 22,000 acres. However, the failure to control nonpoint source pollution from the remaining unreclaimed land and toxic metals from the plant site continue to cause the river to be a biological desert. Other impacts also include the elimination of essentially all storage capacity at Ocoee Reservoir No. 3 and reductions in capacities at Parksville Lake (Ocoee Reservoir No. 1).

Urban nonpoint source pollution is more complex than agricultural and mining sources. Raw sewage diluted by runoff is being released to urban streams in the Bristol area of Virginia and Tennessee; Chattanooga and Knoxville, Tennessee; and Asheville, North Carolina. Erosion and sedimentation from construction activities are choking urban streams, causing flooding, and eliminating aquatic life. Pollutants washed off industrial land, leached from solid waste disposal sites, and discharged from frequent spills are also common contributors to poor water quality. One of the more critical water quality problems in the Valley involves urban runoff in Knoxville, Tennessee. Water quality studies conducted as part of the Section 208 planning program showed that fecal coliform bacteria, oxygen-demanding material, nutrients, and metals were the major pollutants in stormwater runoff to tributary streams and Fort Loudoun Reservoir.

NONPOINT SOURCE POLLUTION CONTROL ACTIVITIES

TVA has addressed poor water quality from nonpoint sources through its traditional role of research, demonstration, participation in cooperative water quality improvement projects with other agencies, and more recently as a leader and facilita-

tor in focusing the attention of regulatory agencies and the public on water pollution.

In the early days, TVA was instrumental in reforesting millions of acres of badly eroding land in the Valley. Some of the most highly eroded lands are now forests that look as if they had never been disturbed. In the 1960s TVA placed emphasis on comprehensive demonstrations of multiple soil conservation and land management practices in specific watersheds to help increase the economic base of agricultural communities while reducing erosion. For two of these demonstrations, Chestuee Creek watershed in Tennessee and Parker Branch watershed in North Carolina, the average net cash income per farm on test-demonstration farms increased three to fourfold over five years with the implementation of soil conservation practices and land management changes. With reduction in sediment transport by 45–70 percent, soil conservation practices were shown to be effective in improving water quality. The key to higher farm income and better water quality involved the combination of demonstrations, interagency cooperation, educational activities, and local involvement.

Unfortunately, when the decision to plant "fencerow to fencerow" was made in 1972, farmers in west Tennessee began planting soybeans on soils that are highly susceptible to erosion. Large equipment tore up the old terraces and serious erosion once again became evident. By the late 1970s cropland erosion averaged 40 tons per acre per year in 21 counties of west Tennessee.

In 1979 TVA, the U.S. Department of Agriculture, and land grant universities began a cooperative program known as Save Our Soil (SOS). The program emphasized the use of conservation tillage, water management practices, and winter cover crops in west Tennessee. This six-point multiagency program involving demonstrations, educational efforts, cost sharing incentives, and technical assistance was targeted at "hot spots" of agricultural erosion and degraded water quality. One portion of the program involves cooperative demonstration farms with The University of Tennessee. The key element involves preparation of a conservation plan containing best mangement (BMPs) for each farm and an agreement signed by the farmer to implement the recommended BMPs in this plan. This agreement is a prerequisite for receiving cost-sharing incentives provided by the program. Those not complying are dropped from eligibility.

On 144 of these demonstration farms, soil loss has been reduced 74 percent with implementation of BMPs in the plans, saving more than 300,000 tons of topsoil each year. In the first four years of this demonstration program in west Tennessee, the farmers implemented almost 100 miles of terraces, 65 acres of waterways, 350 sediment basins, 11,000 acres of drilled soybeans, and 7,000 acres of no-till. Crop yields have increased and production costs have gone down. Experience with these BMPs in west Tennessee have shown that labor costs are reduced about 50 percent, and about 350 gallons of diesel fuel are saved for each 100 acres cropped using conservation tillage.

Research projects have demonstrated that no-till reduces soil loss about 90 percent and drilling soybeans reduces soil loss about 65 percent over conventional tillage in the area. Long-term studies show soybean yields are increased 3–5 bushels per acre using drilling and corn yields are increased 10–12 bushels per acre using no-till compared to conventional tillage.

In west Tennessee and surrounding areas, these demonstrations are showing farmers that it pays to implement BMPs as part of conservation plans. In fact, since 1979 use of no-till has increased from 40,000 acres to 225,000 acres in the area. The entire six-point west Tennessee program has resulted in the implementation of BMPs on almost 600,000 acres of cropland—with an annual reduction in soil loss of over 4.5 million tons—over the last three years. This success story illustrates the importance of interagency cooperation, the utility of targeting incentives and technical assistance to "hot spots" of nonpoint source pollution and the significance of securing commitments to implement BMPs through long-term agreements and conservation plans. However, less than 25 percent of the program has been addressed in west Tennessee, and water quality may not improve sufficiently to restore designated uses until BMP implementation becomes more widespread.

TVA has been actively involved in seeking implementation of control measures for other than agricultural sources of nonpoint pollution. In the 1960s TVA pioneered many of the techniques for reclaiming strip mined lands and included reclamation provisions in its coal procurement contracts more than a decade before enactment of the 1977 Surface Mining Control and Reclamation Act. Recently, TVA has carried out successful reclamation demonstrations in the Upper Bear Creek and Nolichucky River watersheds. However, in undertaking these nonpoint source demonstrations TVA has noted that the voluntary followup measures needed to implement

the results of demonstrations have been less than satisfactory. We have also found interstate pollution problems to be particularly vexing. One such example is the Nolichucky River. In 1981 TVA, working with the State of North Carolina, Soil Conservation Service, the Region D Council of Governments, private landowners, and the mining industry was able to reclaim 41 acres of abandoned feldspar and mica mines. In 1982 and 1983 approximately 161 and 46 acres, respectively, were reclaimed primarily with TVA funds. Today, 357 acres remain unreclaimed and local cooperators are being forced to seek special State legislation to finish the project. At present the financial commitment by North Carolina to gain implementation of BMPs on the abandoned mine land, tailings piles, and active mined land remains uncertain. In the meantime downstream residents of Greenville and Jonesboro, Tennessee, have to contend with abrasive wear and clogged intakes at their public water supply systems.

In addition to serving as a facilitator, TVA has also sought and accepted responsibility from the Governor of Tennessee under Section 208 of the Clean Water Act as an area management agency for nonpoint sources of pollution originating from properties under TVA custody and control. We have developed best management practices (BMPs) in forest harvesting; we have provisions for using BMPs to control erosion and sedimentation from land disturbing activities as part of deeds, easements, leases, and permits issued by TVA; and we are developing requirements for BMPs in our agricultural license for crop production on TVA lands that are consistent with State nonpoint source programs. But this land under TVA control represents only a small portion of the land in the Valley, and the cumulative impact of nonpoint sources of pollution on the streams and reservoirs in our region needs to be addressed.

The other major nonpoint source issue being addressed by TVA involves the improvement of the quality of reservoir releases. In 1978, TVA completed a comprehensive assessment of the impact of its dam releases on downstream water quality and use. We are currently completing a 3-year exploratory program on improving dissolved oxygen in our reservoir releases. Improvements in aeration devices have enabled us to increase dissolved oxygen concentrations in water released through turbines by two to three mg/l at Norris Dam. We believe it would be useful for the Tennessee River Valley to be recognized as a national demonstration region for state-of-the-art water quality improvement technologies. Such a cooperative project, conducted to collaboration with the U.S. Environmental Protection Agency, would build on TVA's experience of the last three years to demonstrate technologies for improving water quality downstream of dams and to evaluate the benefits that accrue from water quality improvement. This demonstration would be useful to Congress in deciding how dam-related water quality impacts can be addressed nationally. For the Committee's use, we are attaching as an appendix to our testimony a proposal that describes such a demonstration in greater detail.

SUMMARY

The abuse of land resources and the failure to use wise land management practices stands out as one of the most serious and neglected of the major environmental issues facing this Nation. One major result of this abuse and mismanagement is nonpoint source pollution. It is TVA's experience that existing mechanisms for implementing nonpoint source measures generally are not working and that any benefits tend to be localized in nature.

An important first step in addressing nonpoint source pollution is the identification of watersheds where nonpoint sources are known or suspected to be major contributors to poor water quality and the development of priorities for resolving the impacts. In developing priorities, State water quality standards should not be the sole criterion because many States have not adopted standards applicable to pollution from sediment, eutrophication from excessive nutrient loadings and toxic materials that may have nonpoint source origins. Existing standards also fail to sufficiently recognize the inherent differences among streams, lakes, reservoirs, and estuarine waters. It is essential that the identification of priority nonpoint source problem areas are based on impacts to other potential uses as well as violations of existing standards.

A key element in TVA's approach in organizing interagency cooperative projects has been the Federal presence and TVA's willingness to serve as a facilitator to get others to cooperate on a regional, sometimes interstate basis. Many of the Nation's serious water quality problems are interstate in nature. EPA maintains it presently has sufficient authority and responsibility to oversee the preparation and implemen-

tation of measures to improve water quality. What is needed, then, are sufficient resources for EPA to exercise this authority.

For a nonpoint source management program to succeed, Federal, State, and local cooperation is essential to focus coordinated efforts on high priority watersheds. TVA has found that different Federal agencies have valuable capabilities and experience essential to finding solutions to nonpoint source pollution. In such cooperative efforts, educational activities are essential to keeping the land user informed about the environmental impacts of his land management practices as well as the benefits he would reap by implementing best management practices. In addition, State legislation or local ordinances may be needed to gain compliance. Good examples include Iowa's approach to soil erosion or North Carolina's approach to urban erosion control and stormwater management. It is also clear that such cooperative efforts should be targeted to watersheds with priority nonpoint loadings first and then being applied uniformly over entire States.

To sum up: It is TVA's experience that a system of incentives tied to a cooperative effort among key Federal, State, and local agencies is the most effective way to achieve sound land management practices for improvement and protection of water quality. TVA believes that the success achieved to date by the cooperative west Tennessee agricultural soil erosion control program is due in large part to agreements made with farmers for implementing recommended BMPs as part of their conservation plans. Eligibility for participation in the program with its cost sharing and fertilizer incentives, is contingent on this commitment to implement specific, recommended BMPs.

We are frank to say, however, that it is premature to reach any definitive conclusions regarding the ultimate success of TVA's approach on a national scale. However, Congress should give serious consideration to supporting selected demonstrations in other parts of the country that might include such incentives as cost sharing and increased technical assistance in implementing BMPs. Congress should also consider the utility of selected disincentives, such as possible loss of cost sharing or other Federal assistance, as a tool for securing BMP implementation. TVA will, of course, communicate to Congress further results of its demonstrations in Tennessee, Alabama, and Mississippi as they are available.

In addition, consistency among all Federal agencies to ensure that their programs do not contribute to adverse water quality impacts from nonpoint pollution will set the example for State and local efforts to restore water quality in areas with priority problems.

National Demonstration of Methods To Improve the Quality of Reservoir Releases

EXECUTIVE SUMMARY

Major water resource project development in the United States during the last half century has proceeded on a scale that is without precedent and that is nothing less than phenomenal. Existing projects will continue to generate major economic and social benefits for many years to come. Experience in the operation of water projects, however, reveals that environmental and social impacts can be incurred which, to varying degrees, reduce overall project benefits. Among the major adverse and costly effects is water quality deterioration downstream from dams, a problem that is typically most acute in controlled large river systems having multiple dams and reservoirs. Similar effects may also occur in single dam projects or on smaller controlled streams where high nutrient input from the watershed combines with project design features to induce stratification and related water quality deterioration in deeper parts of reservoirs. The principal downstream effects of water quality impairment are reduced sport and commercial fisheries, increased treatment costs for municipal and industrial water users, and reduction of the natural waste treatment capability of the stream.

The general public, industry, and government at all levels, have now begun to recognize these widespread problems. As a result, there should be an organized effort to define the extent of the problem and to devise and test means for mitigation. TVA has accumulated a wealth of background water quality information from operational water resource projects within the Tennessee River system and has begun to identify opportunities for water quality improvement through dissolved oxygen enhancement and streamflow reregulation. Lack of adequate funding, however, has precluded the protracted and systematic investigations needed to test and prove mitigation methods having promise of national applicability.

TVA is proposing a demonstration of national significance involving three major evaluations of the efficacy of water quality enhancement and streamflow regulation downstream of dams. The demonstration would be conducted under the auspices of the Environmental Protection Agency because of the agency's mandate ". . . to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The demonstration will identify the benefits resulting from these measures and the social and monetary costs, including unavoidable increases in power costs. This work could begin in 1984 or 1985. The proposed evaluations would have an overall cost of approximately $21 million and would require from three to five years to complete.

TENNESSEE VALLEY AUTHORITY PROPOSAL FOR A NATIONAL DEMONSTRATION OF METHODS TO IMPROVE THE QUALITY OF RESERVOIR RELEASES

Introduction

Over the last 50 years most of the best sites for large-scale water resource projects have been developed in the contiguous United States. These projects, with their long service lives, have provided and are continuing to provide major economic and social benefits to the country. The majority of these projects were constructed for purposes such as flood control, navigation, hydroelectric power, and water supply. Little consideration was given to downstream water quality and uses, particularly in older projects. Stated another way, water quality impacts and effects on downstream uses were often either not fully anticipated or considered as acceptable trade-offs to achieving the "higher valued" primary purposes of the project.

In recent years scientific research has begun to assess what changes occur when a river is impounded. This has indicated that reservoir water quality improves and associated benefits increase initially with impoundment. However, as the impoundment ages or begins to change because of nutrient enrichment, water quality may deteriorate. One indication of this naturally occurring process is poor water quality in the releases from some reservoirs, particularly from lower levels in stratified reservoirs with long storage or retention times. Dissolved oxygen concentrations can approach zero (mg/1) and dissolved iron and manganese, hydrogen sulfide, ammonia, and turbidity often reach levels that are undesirable.

The operation of dams may also alter water temperatures which can have significant effects on downstream fisheries. These altered water quality conditions affect recreational fishing, municipal and industrial water supplies, and the ability of the river to assimilate treated waste waters.

In situations where there is only one dam, the downstream impacts may be localized; however, the cumulative impacts of multiple dams may extend for many miles and severely limit the capacity of downstream reaches to support present and future water uses. This is a major resource management problem, the solution of which may involve technological and operational modifications at the dams, more stringent point and nonpoint source pollution controls in the drainage basin, and/or the more controversial issue of possible project reevaluation and reallocation of project purposes. No comprehensive study has been undertaken at the national level to demonstrate and evaluate methods of improving reservoir releases in this context. Recent litigation, legislative proposals, and renewed public interest on improving water quality highlights the need for such an investigation.

PROPOSAL FOR A NATIONAL DEMONSTRATION

The Tennessee Valley Authority proposes a demonstration of national significance to identify, test, and evaluate measures that can mitigate the adverse impacts of reservoir releases. TVA, with its large integrated system of dams and a long history of carrying out a variety of national demonstrations under its statutory mandate, is an ideal choice for this purpose. With its diversified technical and operational expertise, TVA is also uniquely capable of identifying and evaluating the associated costs and constraints of any such demonstration.

The TVA reservoir system has the following characteristics essential to such a demonstration:

1. An integrated system of dams similar to those built in other regions of the country that currently exhibit the water quality conditions previously described.
2. A moderate range of climatic and hydrologic conditions that would allow any findings to be tranferable to other areas.
3. An organization capable of addressing technological, institutional, and operational considerations at the local as well as national level.

4. An existing body of knowledge about the chemical, biological, and physical conditions at most of the dams in the TVA integrated water control system.

As a water resource management agency, TVA is familiar with water quality issues at the national and regional level.[1 2] With respect to dams, TVA's 1978 report on reservoir releases is one of the most comprehensive documents ever assembled on dam-related water quality concerns.[3] The report not only identified where problems exist in the TVA system but suggested potential mitigative actions and recommendations for future work. Following this study, TVA began a 3-year experimental program on improving dissolved oxygen downstream of its dams. Results from the first two years include initial field testing of several alternatives for increasing dissolved oxygen and minimum streamflows.[4 5] This research has resulted in TVA becoming the national leader on this environmental issue.

The demonstration being proposed by TVA would be applicable to individual water resource projects and integrated basin-wide systems. It would also enhance the waste management flexibility of water users in the near term. With comprehensive national planning and implementation, the proposed water quality improvement methodologies could become the focus of a national effort to enhance and conserve water resources for the protection and propagation of fish and other aquatic life, wildlife, recreation, water supply, agriculture, industry, and other necessary and appropriate uses. It would also be a logical extension to the Environmental Protection Agency's [EPA] water quality efforts under the Clean Water Act. As a result, the demonstration should be carried out under the auspices and funding of EPA.

TVA and EPA presently maintain a cooperative agreement that could be utilized for this purpose. The demonstration and TVA's participation in the program would build on TVA's experience and would examine, in depth, the effects of and potential solutions to water quality problems such as low dissolved oxygen, temperature fluctuations, iron, manganese, hydrogen sulfide, and ammonia. The proposed activities outlined in the following workplans are within TVA's capability and are expected to take from three to five years to complete.

Under the TVA Act, dams and reservoirs are required to be operated primarily for navigation and flood control and, to the extent consistent with these purposes, for the generation of power. The proposed activities would not affect navigational and flood control purposes; however, revised operational schedules will result in shifting power releases to off-peak hours and possible increases in spilled water. When this adversely affects power system costs, reimbursement expenses are identified.

HOLSTON RIVER BASIN PROJECT

Objective

This project would demonstrate methods to alleviate low dissolved oxygen, intermittent streamflow, and incompatible water temperatures in a highly developed watershed (see diagram).

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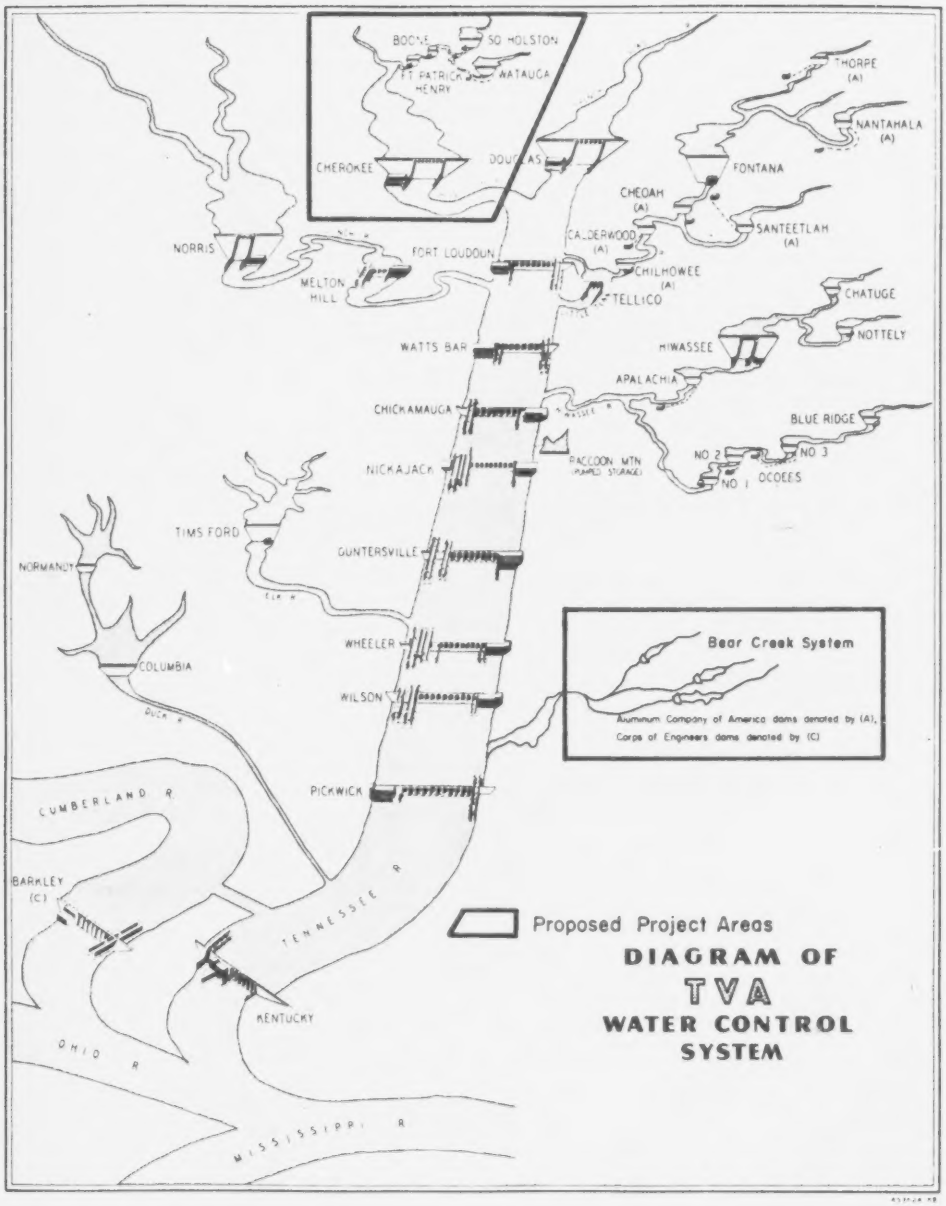
[1] Tennessee Valley Authority, "Where The Water Isn't Clean Anymore," 1978.

[2] Tennessee Valley Authority, "Is The Water Getting Cleaner?", 1980.

[3] Tennessee Valley Authority, "Impact of Reservoir Release on Downstream Water Quality and Uses"—Special Executive Report, 1978.

[4] Tennessee Valley Authority, "*Improving Reservoir Releases.*" 1981.

[5] Tennessee Valley Authority, "*Improving Reservoir Releases—Second Annual Report.*" 1983 (in press).


BOONE
SO HOLSTON
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WATAUGA
CHEROKEE
DOUGLAS
THORPE (A)
NANTAHALA (A)
FONTANA
CHEOAH (A)
SANTEETLAH (A)
CALDERWOOD (A)
CHILHOWEE (A)
TELLICO
NORRIS
FORT LOUDOUN
MELTON HILL
CHATUGE
NOTTELY
HIWASSEE
APALACHIA
WATTS BAR
CHICKAMAUGA
BLUE RIDGE
NO 2
NO 3
NO 1
OCOEES
RACCOON MTN (PUMPED STORAGE)
NICKAJACK
TIMS FORD
GUNTERSVILLE
NORMANDY
WHEELER
COLUMBIA
WILSON
Bear Creek System
Aluminum Company of America dams denoted by (A), Corps of Engineers dams denoted by (C)
PICKWICK
CUMBERLAND R
BARKLEY (C)
TENNESSEE R
KENTUCKY
OHIO R
MISSISSIPPI R
Proposed Project Areas
DIAGRAM OF
TVA
WATER CONTROL
SYSTEM

Test site

This project would be conducted in the Holston River basin, which is located in the northeastern part of the Tennessee Valley. The basin is heavily industrialized, especially in the Bristol-Kingsport-Johnson City area. The drainage area upstream of Cherokee Dam is 3,776 square miles. There are six TVA dams in this subbasin. These dams regulate most of the river basin, but long reaches of the river are still unimpounded.

Releases from these dams are generally low in dissolved oxygen during the summer and early fall. At times, dissolved oxygen levels in certain of the reservoir releases approach zero. Each of these dams provides peaking capacity hydropower to the TVA system. Consequently, flows are interrupted for extended periods. Also during certain times of the year, the temperature range of release water can have adverse effects on existing downstream fisheries.

Reservoir releases in the uppermost part of the basin have the potential to significantly enhance downstream trout fisheries. Releases from Cherokee, the large dam near the lower end of the river, have the potential to support a major warmwater fishery. The enhancement of a warmwater fishery during the test period would be a goal of this project.

Testing measures

During the testing period, the releases from the Cherokee, Fort Patrick Henry, Boone, South Holston, and Watauga/Wilbur Dams would be regulated to increase dissolved oxygen to various concentration levels up to State and Federal criteria levels. The oxygen levels would be increased by methods that can result in demonstrating the most promising techniques for national application. Various ranges of minimum flows will also be maintained for evaluation below South Holston, Watauga/Wilbur, and Cherokee Dams.

Releases from these dams would be scheduled during the course of the year to enhance the fishery downstream of the dams. Computer modeling would be used to identify the operational mode needed to achieve objectives. As part of this project, site-specific aquatic life criteria for selected fish species would be examined.

Timeframe

The tests to enhance dissolved oxygen and minimum flows would be conducted over a 5-year period, and the tests to enhance temperature conditions would be conducted over a 3-year period.

Resource requirements

The hydroelectric units at these dams are principally used for peaking purposes. Thus, the power generated by these dams is used in lieu of more costly sources of power and is therefore very valuable to the power system. The above tests would result in some loss of power production efficiency and releases during off-peak hours when the power is worth much less. This differential represents a direct economic loss. As a result, the power system must be reimbursed for any power losses. It is estimated that this cost is approximately 50 percent of the total project costs. The other major cost is the more extensive technological measures that would be required to increase dissolved oxygen to recommend State and Federal levels. The dissolved oxygen, minimum flows, and temperature-related tests would cost approximately $13 million. The design and evaluation costs are $4 million with a total estimated project cost of $17 million as indicated in the following table.

[In million of dollars]

	Fiscal year—				
	1984	1985	1986	1987	1988
Holston river basin project, subtotals	4.3	4.3	2.8	2.8	2.8

UPPER BEAR CREEK PROJECT

Objective

This project would demonstrate methods to increase dissolved oxygen and reduce concentrations of iron, manganese, hydrogen sulfide, and ammonia in low-level reservoir releases from nonpower projects.

Test site

The project would be located in the Bear Creek basin, in the southestern part of the Tennessee Valley. The basin has a drainage area of 946 square miles. There are four relatively small TVA dams in the basin. One of the purposes of these dams is water supply. At times, releases from the Upper Bear Creek Project are high in iron, manganese, hydrogen sulfide, and other undesirable constituents. These constituents adversely affect the downstream fishery.

Demonstration measures

During the demonstration period, mixing oxygenation of the hypolimnetic waters with epilimnetic waters in the reservoir will be examined as a means of improving water quality without increasing dissolved nitrogen concentrations. This approach would allow precipitation and settling of the undesirable constituents in the reservoir instead of being released downstream. It would also avoid "gas bubble" disease in fish that could result from increased dissolved nitrogen levels from low-level reservoir releases.

Timeframe

The tests would be conducted over a 3-year period.

Resource requirements

Total cost including design and evaluation is estimated to be $2 million as indicated in the following table.

[In millions of dollars]

	Fiscal year—		
	1984	1985	1986
Upper bear creek project subtotals	0.8	0.6	0.6

VENTABLE TURBINE PROJECT

Objective

This project would involve the development and testing of a prototype "ventable turbine," i.e., a replacement turbine wheel that is designed to achieve maximum air aspiration at minimum power losses.

Test site

Tims Ford and Norris Dams are among the most likely candidate sites for the prototype turbine demonstration. Each project has the potential for significantly enhancing a year-round cold water fishery and they both experience seasonally low concentrations of dissolved oxygen and inadequate minimum flows. The Tims Ford is being investigated by TVA in 1983 for releases of dissolved iron and manganese.

The Tims Ford project is located in middle Tennessee on the Elk River. The basin upstream of the dam drains approximately 529 square miles in a predominantly rural area. Norris Dam is in east Tennessee on the Clinch River. The Basin upstream of Norris Dam drains approximately 2,912 square miles of rural Appalachia predominated by agriculture and coal mining.

Testing measures

The first phase of this activity would be conducted primarily at a manufacturer's hydraulic test facility. Specific design calculations will be made to create low pressure regions on the downstream side of a turbine to achieve maximum air aspiration and minimum power losses. Computer modeling will be used to develop the final design. Based on this design, a model turbine will be built and tested. If test

results are favorable, a prototype unit will be installed and field tested at an existing hydropower facility. The field testing will include index testing with and without aeration, measuring dissolved oxygen uptake and the concentration of total dissolved gases, water quality and fisheries studies, and monitoring turbine cavitation.

Timeframe

Developing and demonstrating an enhanced turbine runner design will require approximately 5 years. Two years are needed for designing and developing the runner at the manufacturer's test facilities. Fabrication and installation will require another year, and two years will be needed for field testing the prototype turbine wheel.

Resource requirements

Using Tims Ford as the potential test site, the cost for the design and model tests of a new turbine runner is estimated to be $550,000. Fabrication and field testing is approximately $940,000 with an installation cost of approximately $310,000. The outage cost while the unit is being installed could be as much as $600,000, depending on the time of year and hydrologic conditions. (Note.—If Tims Ford is selected as the test site, the installation and outage cost would be paid by TVA.)

The resource requirements for Norris Dam or any other project were not estimated, but they would likely be higher than Tims Ford.

[In millions of dollars]

	Fiscal year—				
	1984	1985	1986	1987	1988
Prototype turbine project, subtotals	0.5	0.9	0.8	0.1	0.1

ECONOMIC CONSIDERATIONS

Determining who will pay the costs and under what arrangements are important considerations in improving the quality of releases from existing dams.

As a result, the demonstration will include an evaluation of the financial aspects of the most promising water quality improvement methodologies in TVA's study as well as those demonstrated by other agencies. This would include an economic analysis, a cost allocation, and the exploration of potential cost-sharing arrangements. The economic analysis would be done in accordance with the criteria applicable to Federal water resource development agencies. Presently, these are the *"Principles and Guidelines for Planning Water Projects"* which were approved by the President on February 3, 1983. Allocation of costs would be undertaken in accordance with the separable Cost-Remaining Benefit Method, which is the procedure commonly used by the U.S. Army Corps of Engineers and other Federal water planning agencies, including TVA.

Cost-sharing policies and procedures for collecting user fees are not as well established. Thus, various alternatives would be identified and examined. This examination would extend to assessing the feasibility of the alternative schemes and their appropriateness. As part of this process, beneficiaries would be identified along with possible arrangements for their participation in a cost-sharing and reimbursement scheme.

Conclusion

It is recommended that Congress authorize and fund an EPA demonstration utilizing the Tennessee River system as a vehicle for testing and evaluating dam-related water quality improvement technologies under which TVA would conduct these demonstrations. EPA would oversee this program because of its mandated responsibilites for water quality conservation and the fundamental implications the demonstration would have for improving water quality nationally. The cost for the program is approximately $21 million. The tests will take 3 to 5 years to complete. During this period TVA will provide periodic reports to EPA and Congress on the effectiveness of the various water quality improvement methodologies. A final report will also be prepared summarizing the results of the program, their implica-

tions, and recommendations on how dam-related water quality impacts could be addressed nationally.

Mr. ROE. Please proceed.

TESTIMONY OF DR. BILLY BOND, MANAGER, NATURAL RESOURCES AND ECONOMIC DEVELOPMENT, TENNESSEE VALLEY AUTHORITY: ACCOMPANIED BY DR. ALFRED DUDA, MEMBER OF TVA'S ENVIRONMENT QUALITY STAFF

Dr. BOND. Thank you, Mr. Chairman.

My colleague is Dr. Alfred Duda, who is a member of TVA's Environmental Quality staff.

As mentioned, I am Bill Bond, manager of TVA's Office of Natural Resources and Economic Development. My presentation today is based on TVA's experience with nonpoint pollution since the 1930's.

As a Federal agency with a regional perspective on natural-resource management, TVA is interested in protecting the Tennessee Valley's natural resources, and the Nation's investment in the TVA reservoir system.

In our testimony, we want to briefly share with you, first, the knowledge TVA has developed about the significance of nonpoint sources of pollution in the seven-State region; some of the lessons learned in working with other organizations with direct nonpoint-source problems; and recommendations for elements of a program to address nonpoint source pollution in a cost-effective manner.

In the Tennessee Valley the most widespread nonpoint-source pollution is sediment and soil erosion. Excessive amounts of soil erosion from cropland averaging 40 tons per acre per year and ranging up to 200 tons per acre per year occur on many farms in the region, especially in western Tennessee.

In one 14-county area in western Tennessee, more than $86 million of damage is estimated to occur each year to agricultural crops and timber resources because of sediment and flooding caused by eroding soil.

Sediment losses from coal and other mining activities are also causing serious nonpoint source pollution. Sediment and acid mine drainage are threatening water quality in the Upper Bear Creek Reservoir in northwestern Alabama. Sediment from mica and feldspar mining in western North Carolina has destroyed natural aquatic communities in over 100 miles of the Nolichucky River. The silt has also constricted the flood-channel capacity of various streams, and has eliminated all flood-storage capacity behind the Nolichucky Dam. The subsequent retirement of the power units at this dam has resulted in an average energy loss of 50,000 megawatts hours worth $1.1 million per year at TVA's current rates.

The failure to control nonpoint-source pollution and toxic metals from the Copper Basin in southeast Tennessee is also adversely impacting a 30-mile stretch of the Ocoee River. This impact is expressed in terms of no biological life in the river, elimination of essentially all storage capacity at the Ocoee Reservoir No. 3, and reductions in capacities at Ocoee Reservoir No. 1.

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If we summarize the water quality situation at Tennessee Valley, 7 of the 10 critical water problems have nonpoint-source origins. TVA has attempted to address poor water quality from nonpoint sources through the use of demonstrations, educational efforts, cost-sharing incentives, and technical assistance, and cooperation with public and regulatory agencies. Recently, TVA, the Department of Agriculture, and land-grant universities began a cooperative program known as Save our Soil in western Tennessee. This six-point, multiagency program is targeted at hotspots of agricultural erosion and degraded water quality.

One portion of the program involves demonstration farms conducted in cooperation with the University of Tennessee. A key element of the program involves the preparation of a conservation plan containing best management practices, BMP's, for each farm, and an agreement signed by the farmer to implement the recommended BMP's. This agreement is a prerequisite for receiving cost-sharing incentives provided by the program. Those not complying are dropped from eligibility.

On 144 of the demonstration farms, soil loss has been reduced 74 percent with implementation of BMP's and the plans, saving more than 300,000 tons of topsoil each year.

In the first 4 years of this demonstration program in west Tennessee, the farmers implemented almost 100 miles of terraces, 65 acres of waterways, 350 sediment basins, 11,000 acres of drilled soybeans, and 7,000 acres of no till. Crop yields have increased, and production costs have gone down. Experience with BMP's in west Tennessee has shown that labor costs are reduced about 50 percent, and about 350 gallons of diesel fuel are saved for about each 100 acres of crops using conservation tilling.

Research projects in the region have demonstrated that no till reduces soil loss about 90 percent, and drilling soybeans reduces soil loss about 65 percent over conventional tilling.

Long-term studies show soybean yields are increased 3 to 5 bushels per acre using drilling, and corn yields are increased 10 to 12 bushels per acres using no till compared to conventional tillage.

In west Tennessee and surrounding areas, these demonstrations are showing farmers that it pays to implement BMP's as part of their conservation plan. But in 4 years, less than 25 percent of the erosion problem has been treated, and water quality may not improve sufficiently to restore designated usage until BMP implementation becomes more widespread.

Other ongoing nonpoint-source pollution-control problems include land reclamation projects in the Upper Bear Creek and Nolichucky River watersheds. These projects are being undertaken not only to correct onsite environmental damages, but to protect against further water-quality degradation in TVA reservoirs.

In addition to these efforts, TVA is also addressing the issue of poor water quality in reservoir releases. Thusfar, we have been able to increase dissolved oxygen concentrations by 2 to 3 milligrams per liter by aerating turbine releases. Since this is a national as well as a regional concern, it seems appropriate for the Tennessee Valley to serve as a national demonstration region to identify how dam-related water quality impacts might be addressed. Ad-

ditional details on this issue are included in the comprehensive statement that I presented for the record.

Across the Nation, nonpoint sources of pollution not only prevent our attaining the goals of the Clean Water Act, but they threaten public investment in water-resource projects, and force the public to bear added costs of uncontrolled pollution.

Demonstrations and scientific studies have shown that best management practices do control nonpoint-source pollution from agriculture and urban runoff. Unfortunately, it has been TVA's experience that the present programs for nonpoint-source control do not work. Based on our work in the Tennessee Valley, a system of incentives tied to a cooperative effort among key Federal, State, and local agencies is an effective way to achieve sound land management practices for improvement and protection of water quality.

TVA believes that the success achieved to date by the cooperative West Tennessee agricultural soil erosion control program is due in large part to agreements made with farmers for implementing recommended BMP's as part of their conservation plan. Eligibility for participation in the program with its cost sharing and fertilizer incentives is contingent on this commitment to implement specific recommended BMP's. We are frank to say, however, this morning that it is premature to reach any definite conclusions regarding the ultimate success of TVA's approach if used on a national scale.

However, we think Congress should give serious consideraton to supporting selected demonstrations in other parts of the country that might include such incentives as cost sharing and increased technical assistance in implementing BMP's.

Congress should also consider the utility of selected disincentives, such as possible loss of cost sharing and other Federal assistance as a tool for securing BMP implementation.

TVA will, of course, communicate to Congress further results of this demonstration to attain water-quality improvement in the region as they are available.

In addition, consistency among all Federal agencies to insure that their programs do not contribute to adverse water-quality impacts from nonpoint pollution will help set the example for State and local efforts to restore water quality in areas with priority problems.

We appreciate this opportunity, Mr. Chairman, to testify before the subcommittee on what we think is a very important national issue, and we will be pleased to answer any questions if you have some.

Mr. ROE. Dr. Bond, I want to thank you for your testimony. I think some of the points in your full testimony have a material bearing on the committee's thought process, namely, the following:

In the testimony we have received so far from the administration, from Mr. Ruckelshaus and others, they have suggested to us that one of the things the committee has to be most careful of is not to infringe on States' rights vis-a-vis the point of land use. It reflects in my mind that some of the testimony we had about 1 year ago having to do with that acid-mine-drainage issue, and I don't know how we are going to deal with nonpoint source if in

some way we don't relate to the land-use issue, which is delicate, to say the least, as far as Congress is concerned.

Would you want to respond a little bit to that observation?

Dr. BOND. Yes; the Tennessee Valley still has abandoned mine areas, that are contributing significantly to the pollution problem in the TVA reservoir system as well as other streams, and much of the strip mining going on now also makes some contribution to that pollution.

There is legislation available at the present time that could be used in cleaning up those abandoned mines, but the funds have not been made available, and the problem is very extensive. We are not suggesting that this is not a State problem, that it is a Federal problem, but we think it is a cooperative problem that the States and the Federal Government have to work on together to be able to solve.

Mr. ROE. Well, let me pursue that further, because I think it has to be dealt with. When we heard testimony from Agriculture this morning, they spoke of the actions they had been taking. No. 1, and I think also the point that they are looking at the issue of preventative pollution, if you like, is proper management practices where agriculture is involved.

On the other hand, as you manifested in your testimony, or in your summary, you spoke to problems that emerged from mine tailings. For example, the acid-mine issue. You spoke to the point, or observation, of pollution, if we want to call it that, as it relates to erosion and sedimentation are the two largest areas of concern.

Having said all that—and then you also make another very important comment as I see it, and I quote on the bottom of your summary, page 10:

> Many of the Nation's serious water problems are interstate in nature, and that EPA maintains it presently has sufficient authority and responsibility to oversee the preparation and implementation of measures to improve water quality. What is needed, then, are sufficient resources for EPA to exercise this authority.

On the other hand, what we are coming back and saying is that is the problem we are faced with. The testimony we have been receiving in the last couple of months is based on the point of recognizing that nonpoint source is—again I am using the figure that has emerged—50 percent of the problems and issues we are faced with.

Now, with that little summary, one comes back and says that it almost seems to be impossible to deal with the nonpoint source unless we face up to the point of view that it is land use that relates to that.

Dr. BOND. Yes, sir, that is right.

Mr. ROE. Then, basically, that is what is creating the problem, other than the so-called natural pollution.

Dr. BOND. Yes, sir.

Mr. ROE. Then the question is how far does Congress choose or want to go, to create mechanisms or methodologies to begin to deal with that issue. For example, if we go ahead, and you made a good point, cleaning up strip mining areas and some of the acid-mine areas, do we provide the funds to that and leave an open end for people to go ahead if they discover another deposit of copper, or whatever, to mine without having any additional restrictions?

What is your observation? What should we be doing? You are running TVA. What should we be doing?

Dr. BOND. Well, it would be our position, sir, that the problem of what has been done in terms of poor mining practices and poor land-use practices—whether construction, farming, whatever, in the past that are still contributing to the pollution problem in the streams—is going to take a cooperative effort to clean up. However, we feel that in the future, those who create the pollution should also solve that problem.

We think, for example, that best management practices, if followed by farmers will basically solve nonpoint-pollution problems from agriculture. However, we are not sure that just making plans as we have participated in for the last several years in the Tennessee Valley region—there have been some excellent plans in the seven States—but we have many areas that have deteriorated rather than improved during the time that those plans have been completed.

So, therefore, we feel something must be done to bring about the implementation of such plans. That is what we are talking about in terms of incentives and disincentives, yes, sir.

Mr. ROE. Suppose we recess for 10 minutes while we go and vote and we will be right back.

[Brief recess.]

Mr. ROE. The committee will reconvene.

When we broke up for that vote, Dr. Bond, you were expressing some of your observations. Do you want to continue.

Dr. BOND. Yes; one of the concerns you expressed was the interstate division. In Tennessee, we have a lake, that drains Kentucky and Tennessee and while I do not have any fear as to the deterioration that has occurred there, the conditions in the lake have been going down. In the area we have been pushing farmers very hard to get them to use best management practices. As I indicated in my testimony, we are making some progress, but at the same time the conditions in the lake are deteriorating both from—well, we know that it is filling quickly with sediment. There have been fishkills from pesticides. Fish in the lake have high levels of pesticides, which are probably being fed from the agricultural areas in west Tennessee and western Kentucky. It has higher phosphorous levels than other Tennessee lakes and there is massive algae and weed growth.

It is this kind of thing that TVA is very concerned about.

Mr. ROE. I think that TVA—of course, we are knowledgeable on your operation—is a microcosm, really, of a regional relationship of all kinds of diversified uses and power generation, food production, and so forth.

And I think locking in the earlier testimony this morning from Mr. Oberstar where he reflected on the points of many of our lakes, and streams, and headwaters becoming now the focal point of a drainage basis where pollutants are being gathered, this has an extraordinarily important impact on the whole nonpoint-source issue.

What we are trying to get a handle on here, obviously, is to what degree and what direction does Congress follow on this.

Without belaboring the discussion now, we have had many witnesses, and others have pontificated on the problems of the elimination, for example, of the combined sewer runoff and what that means in urban settings, and so forth.

But by the same token, what you have brought into focus now is the relationship of the concentration of these pollutants and waste, the cumulative effect, and so forth, and it does directly relate to the land use.

Dr. BOND. Yes, sir, it does.

Mr. ROE. And whether or not best management practices is the—and I do not mean this unkindly—is the easy way to go. Or how one does or what Congress should be doing from a Federal point of view by incentives or disincentives, to force the issue. Because otherwise, to spend large sums of money on point-source control, emptying into multiple-use rivers, both for water supply and flood control, and so forth, could be counterproductive.

In other words, there is a limit that we can go because we are not going to be able to clean that all up unless we deal with the overall picture. Land use does have a bearing.

Dr. BOND. Yes, sir, it does. That is what we wanted to bring to the committee's attention.

Mr. ROE. And I think you have done a good job in doing that.

Mr. BOND. Thank you.

Mr. ROE. I have no further questions.

Mr. STANGELAND. I just, too, want to commend you, Dr. Bond, on an excellent piece of testimony, and also I think you have a great deal to offer, based on the experience that you had with your TVA projects, your demonstration projects.

On page 6 you describe your SOS program. You mention cost-sharing incentives provided by the program. Would you describe for us what some of these cost-sharing incentives are?

Dr. BOND. Yes, sir. Ever since 1934, when TVA began an agriculture program in the Tennessee Valley region, we have worked cooperatively with the Extension Service to introduce sound management practices and to improve organization and to increase farmers' income as part of our responsibilities to increase economic growth in the Tennessee Valley region.

In this particular program, with the cost that the Soil Conservation Service has estimated for investments that have to be made to solve these horrendous soil-erosion problems in western Tennessee, it was obvious that such investment could not be totally made from public funds, that the farmer was going to have to make a substantial amount of that investment.

We felt that we should combine the efforts of what the Soil Conservation Service was doing with the efforts that TVA was doing to demonstrate on a limited number of farms that a farmer could make, could maintain an income while he was making investments that would improve his land use to slow down erosion.

TVA has been putting a limited amount of experimental fertilizers that it produces at its Muscle Shoals fertilizer center on each of those demonstration farms. It is probably in the neighborhood of a $200 to $500 incentive. The Soil Conservation Service, of course, is making available to the farmers their regular cost sharing provisions of the ACP Act.

Now, the interesting thing is when a farmer participates, he agrees to follow a 5-year plan of best management practices that include capital investment. The ACP program, if you are dealing with crop land, only provides sufficient funds to apply those practices on a cost-sharing basis to a limited part of the farm.

The farmer agrees to go ahead and do that on his total farm. So I guess the amount of investment that TVA and the Soil Conservation Service is doing is substantial, but probably still much lower in investment than the farmer is making. And in total, including small watershed programs there's been about $27 million in Federal funds invested over the 4-year period in that 20-county area. Farmers have received a very high share of that investment.

Mr. STANGELAND. In your experience, can you cite for us any examples or instances where ACP programs have been counterproductive to clean water and solving the problem of nonpoint-source pollution?

Dr. BOND. No, sir. I am not knowledgeable of any. There may be some.

Al, are you?

Dr. DUDA. I do not think so.

Mr. STANGELAND. And then maybe for future reference, you might want to recommend to the committee how ACP could be used to better advantage. Are there practices presently not covered by ACP that should be and could be used to help solve the problem of nonpoint pollution? I think at times we use ACP to pay farmers to do things that are not very costly but should have been done just in good management practices for their own well-being.

And I would like to see that ACP money used perhaps to better advantage, and I would ask you to make some of those recommendations to us at a future time.

Dr. BOND. I would be glad to, sir. I know what you are talking about. Many times I think they were applied to production practices rather than conservation.

Mr. STANGELAND. Yes; on page 7 you cite some impressive results from your six-point west Tennessee demonstration program. At the same time you indicate that less than 25 percent of the problem is being addressed.

Why is that the case? Is it because there are not enough participants in your voluntary program, or is it because of the narrow scope of the demonstration project?

Dr. BOND. Well, at this point it is basically because we have within a 20-county area about 200 farms that are participating, and of course the educational process is slow. Those 200 demonstration farms are demonstrating to other farmers, but many of them have not adopted best management practices on their farms. On the 200 we have that. So, therefore, we still have a long ways to go.

Mr. STANGELAND. Your testimony makes the point that the first element in a successful nonpoint-source control program should be identification of high priority or hotspot watersheds. You also indicate that State water-quality standards should be only one of the criteria used in making this identification.

What other criteria does TVA use and what criteria should be used in fashioning a national program?

Dr. BOND. I would like for Dr. Duda to comment on that. He has worked both with the States and also with TVA and is very familiar with that.

Dr. DUDA. The States do not have appropriate water-quality standards for many nonpoint-source-related problems, such as sediment problems. There are not specific water-quality standards for sediment eutrophication problems, algae in our TVA reservoirs or in lakes in Massachusetts. There are not specific State water quality standards for dealing with that.

So in their absence, you need to look at whether or not the use of a stream is affected. And there are things like biological monitoring that are important. Has the sediment affected the fish populations? Are the algae, nuisance algae, such that the nutrients may be causing problems. You have to focus then on the uses of the stream as well as standards, not just the standards.

In addition, you need to focus on the watersheds upstream of the area with the problem and not deal uniformly across the State with nonpoint-source issues. Deal with those targeted watersheds that are really contributing—the hotspots—to those problems.

With those three criteria one could come up with the areas that would need to be addressed in such a program.

Mr. STANGELAND. Thank you.

Mr. Chairman, I have other questions, but in the essence of time, I would ask unanimous consent that I might submit them in writing.

Mr. ROE. No objection. So ordered.

[Questions submitted by Representative Stangeland and responses by Mr. Bond, TVA, follow:]

TENNESSEE VALLEY AUTHORITY
KNOXVILLE, TENNESSEE 37902

DEC 20 1983

The Honorable Arlan Stangeland
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Stangeland:

Please find enclosed the Tennessee Valley Authority's response to the nonpoint source pollution questions raised in your November 29 letter. We respectfully request that these answers be included in the Water Resources Subcommittee's hearing record on the Federal Water Pollution Control Act.

If we can be of any further assistance to you or the subcommittee, please let me know.

Sincerely,

Billy J. Bond, Manager
Office of Natural Resources
and Economic Development

Enclosures
cc: Mr. Joseph A. Italiano (Enclosures)
Public Works Committee Editor
2165 Rayburn House Office Building
Washington, D.C. 20515

ANSWERS TO QUESTIONS POSED BY CONGRESSMAN STANGELAND AT THE NOVEMBER 16 HEARING BEFORE THE WATER RESOURCES SUBCOMMITTEE

Question 1: Dr. Bond, I am particularly interested in the demonstration efforts that TVA has been involved with since the 1960s. On page 5 of your testimony, you cite some rather remarkable results in the Chestuee Creek and Parker Branch demonstration projects. Were these two particularly successful or were they representative of your program results in the 1960s?

Answer: TVA began scientific investigations on small watersheds in 1934 to evaluate the effects of reforestation and improved conservation practices on reducing floods and sediment loading. The Parker Branch and Chestuee Creek watershed demonstration projects of the 1950s and 1960s were the first projects to focus on the interrelationship between economic development and watershed hydrology.

The objective in the Parker Branch project was to determine the extent to which farm income could be raised in a typical low income rural area with subsistence farming (e.g., low productivity, abused land); and to evaluate the resulting effects upon the hydrologic characteristics of the watershed. The project successfully demonstrated that net real-farm income could be raised fourfold, and organizational change could greatly increase productivity (1/6 the effort required to produce $100). At the same time, the hydrology of the watershed

improved markedly with reduced flooding and a 70 percent reduction in sediment loading because of greatly reduced soil erosion.

Similarly at Chestuee Creek watershed, the demonstration was to develop the agricultural resources of the region, and to measure the effects of these adjustments on the water resource. Raising the income of the area would improve education, health, and government services. The Chestuee Creek watershed was much larger than that at Parker Branch and included several small cities and towns. The demonstration in the Chestuee Creek watershed resulted in a 3-1/2 fold increase in net farm income; a shift from cropland to pasture and forest; and a modest reduction in storm runoff and flooding along with a 45 to 70 percent reduction in sediment loads.

TVA designed these demonstrations to collect hydrologic data and to determine whether rural economic development was consistent with flood control and reductions in sediment loading with commonsense land management. These practices were the forerunners of what are today known as best management practices (BMPs). These were the only two investigations undertaken to collect these data, but the lessons learned were implemented in subsequent TVA programs in tributary development. TVA learned two important lessons about source areas of runoff and sediment from agricultural lands. The first is the need to

take a watershed-wide approach to water pollution, and the second is that development of an area must account for both manufacturing and agriculture (a rural-urban blend).

These lessons are as valid today as 15 years ago. On our west Tennessee demonstration farms (see answer to question 4), we still find that implementation of recommended BMPs decrease operating cost of farmers and increase crop yields.

Question 2: On pages 8 and 9 of your testimony, you mention that TVA has been the designated 208 management agency, at least in Tennessee. What are your views of the 208 process and the extent that it should be continued?

Answer: TVA assisted in area-wide and State-wide 208 planning efforts in the TVA region in the 1970s. We served on technical advisory groups and provided water quality information to the State and local agencies. Section 208 planning was an important first step in addressing nonpoint source pollutants particularly because it was a vehicle for many different groups to begin talking to each other. Unfortunately, the lack of adoption of effective plans and the lack of implementation have blocked effective 208 management.

The lesson of the 208 process is that the voluntary plans that have been adopted are generally insufficient to achieve all nonpoint source abatement, and implementation is in most instances nonexistent. In fact, legislation has been passed in some

Valley States to exempt nonpoint sources such as agriculture and silviculture from full compliance with the State's Water Quality Act. It is TVA's experience that existing programs developed under Section 208 are not working to achieve needed water quality improvement.

As a management agency under Section 208 for properties under its custody and control, TVA is able to side-step implementation constraints and has incorporated the use of BMPs in its activities. In summary, planning and management implementation must go hand in hand. Section 208 could have worked, but in many States it was not fully carried out.

Question 3: On page 9 of your testimony, you state that "In 1978, TVA completed a comprehensive assessment of the impact of its dam releases on downstream water quality and use." Could you please provide a copy of this study for our committee record?

Answer: We are attaching a copy of TVA's 1978 report entitled "Impact of Reservoir Releases on Downstream Water Quality and Uses."

Question 4: On page 11, you sum up your testimony supporting a system of incentives tied to cooperative interagency efforts as being the best way to approach the nonpoint source control

problem. What types of incentives, particularly cost-sharing incentives, does TVA employ? What incentives should be built into a national program?

Answer: In our testimony, we indicated that a system of incentives was being used on The University of Tennessee - TVA Resource Management Conservation (RMC) farms in west Tennessee. The only agency providing cost-share funds for implementation of soil erosion/water quality measures on RMC farms is the Agricultural Stablization and Conservation Service (ASCS), United States Department of Agriculture (USDA). A sister agency, the Soil Conservation Service, USDA, determines a farmer's eligibility for cost-share funds, designs the protective measures, and supervises the installation. Because the west Tennessee soil erosion project is considered a targeted area by USDA, each participating RMC farm is eligible to receive a maximum of $3,500 in cost-share funds in the first year of program participation for the installation of various BMPs (e.g. terraces, debris basins, no-till cropping). Each farmer must sign a long term agreement in order to receive these cost-share funds. This is a commitment for applying these measures to the farm for a minimum of 3 years, and up to 10 years depending on the nature of the practice or measure employed.

After the first year, RMC farms are eligible for additional cost-share funds for the application of conservation measures.

However, at this point, the farm is treated as any other in the county; in other words, it is not given any special funding as in the first year of program participation.

TVA provides RMC farms a direct program incentive in the form of a fertilizer discount on locally purchased fertilizers. This incentive averages $250 to $300 per year for a six-year period. TVA also shares in the cost of conducting the program by reimbursing The University of Tennessee for specialist time.

In regard to incentives for a national program, the use of incentives for soil conservation has a long precedent through ASCS. The TVA experience would indicate that lasting benefits from incentives need to be accompanied by educational programs with the individual farmers involved and by long-term written agreements to utilize BMPs. As we indicated on page 11 of our testimony, TVA believes that the success achieved on RMC farms in west Tennessee is due in large part to these written agreements made with farmers for implementing recommended BMPs as part of their conservation plans. Eligibility for incentives is contingent on a local commitment to implement specific practices as part of conservation plans on entire farms.

Question 5: How does TVA determine the effectiveness of its water quality improvement efforts? Would you describe for the committee what kind of water quality monitoring program TVA currently employs?

Answer: Where feasible, TVA conducts follow-up water quality surveys after completion of major water quality improvement efforts, such as cleanup of toxic contaminants or upgrading of municipal wastewater treatment facilities. Recent examples include fish sampling in the North Fork Holston River after cleanup of mercury at Saltville, Virginia, and investigation of water quality in Fort Loudoun Reservoir following expansion of the Knoxville Third Creek wastewater treatment plant. Intensive water quality surveys such as these are quite costly; therefore, in many cases evaluations of improvements must be based, for example, on analyses of water quality modeling results for different water resources management options, or on theoretical calculations of reductions in erosion rates achieved with different land uses and land management techniques.

TVA currently has no comprehensive ambient water quality monitoring program. From 1973 to 1980, TVA operated a network of as many as 180 ambient monitoring stations strategically located throughout the Valley. The cost of these monitoring stations became prohibitive, and in 1980 TVA decided to focus its efforts on short-term, intensive surveys of specific streams and reservoirs. In 1981-83 TVA conducted surveys of this nature on three mainstream Tennessee River reservoirs, one tributary reservoir, and three tributary streams. Targeted monitoring can be very useful in evaluating the effectiveness of water quality improvement efforts on a watershed scale. This fiscal year TVA is

developing plans for implementation of more cost-effective targeted monitoring in FY 1985 to supplement the intensive surveys and to provide information on water quality trends.

Question 6: Yesterday we heard from Administrator Ruckelshaus that he fears a new nonpoint source grant assistance program could lead to less, rather than more, water quality protection because it might tend to inhibit voluntary nonpoint source control efforts. Based on your experience in TVA, would you comment on this potential problem?

Answer: Based on having participated with farmers in educational and incentive programs dealing with soil conservation, we believe that such measures can work if properly structured. We have not found that incentives made available to farmers in a demonstration program kept them from making the investments and carrying out the needed BMPs where it was demonstrated that those investments had increased incomes. They could see the results! The incentives lead to more, not less water quality protection.

To a degree we agree with EPA; poorly structured Federal programs may provide incentives to cause nonpoint pollution problems. Such programs in a sense encourage the farmer to make various kinds of economic decisions that in turn are contrary to the long-term goals of the Clean Water Act. For example, programs that encourage cultivation of marginal, steeply sloping land result in increased soil erosion and add pollutants to waters. On page 12 of our testimony, we suggested that Federal agencies should provide leadership to State and local groups by ensuring that their programs do not contribute to adverse water quality impacts from nonpoint pollution.

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TENNESSEE VALLEY AUTHORITY

IMPACT OF RESERVOIR RELEASES ON DOWNSTREAM WATER QUALITY AND USES

Special Executive Report in Response to a Request from the Acting General Manager

Prepared by:
Division of Environmental Planning - Task Force Coordinator
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Chattanooga, Tennessee
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EXECUTIVE SUMMARY

As a part of its regional resource development program, the Tennessee Valley Authority (TVA) operates a system of dams and reservoirs on the Tennessee River and tributary streams. Benefits to the region and the Nation in terms of flood control, navigation, electric power generation, and recreation are counted in billions of dollars. The reservoirs improve water quality conditions in many ways. However, the management and operation of this integrated system also has adverse impacts on water quality and water uses in the reaches below certain dams.

Releases from Tennessee Valley reservoirs were evaluated with respect to their adverse impacts on water quality and related characteristics and on various uses of the water downstream. The water quality characteristics examined were temperature, dissolved oxygen, resolubilization of metals, streamflow, turbidity and suspended solids, and gaseous supersaturation. The downstream water uses examined were recreation, fisheries and other aquatic life, water supply, and assimilative capacity. Evaluations wer. based on available data on water quality and reservoir operations from 1970 through 1977 in conjunction with biological and engineering judgments of the significance of the impacts.

The most significant impacts of reservoir releases are associated with low concentrations of dissolved oxygen, short-term variations in temperature, and inadequate streamflows in the reaches below the dams. The adverse impacts of releases from individual reservoirs were categorized as having no impacts, potential impacts, or existing impacts. These categories were used to identify priorities for additional detailed studies to evaluate possible mitigative actions.

In general, releases from main stream reservoirs have very few adverse impacts on water quality or water uses. However, releases from many tributary storage reservoirs do significantly impact dissolved oxygen concentrations, temperatures, and streamflows and, therefore, downstream water quality and uses.

Water Quality Impacts

Temperature

Releases from eight tributary dams have existing long-term impacts on temperature. The temperatures of these releases during the summer and early fall are marginal for the development of either cold water or warm water fisheries (too warm for cold water species and too cold for warm water species). The only option for improving long-term temperature conditions to favor viable fishery resources downstream from these dams would be to seek methods for increasing temperatures in spring, summer, and early fall to provide conditions more favorable for warm water species.

Short-term (daily) temperature impacts are associated with the releases from 15 of the tributary projects as a result of intermittent operation of the hydro units for peaking purposes. Establishment of an instantaneous minimum release from each of these projects is the principle option for reducing these adverse temperature impacts.

Dissolved Oxygen

Releases from 18 reservoirs result in concentrations of dissolved oxygen that significantly deviate from numerical criteria. Releases from eight of these storage reservoirs cause severe problems (concentrations of less than 1 mg/l), and should be classified in the "priority" category for any future studies for mitigating dissolved oxygen problems. The specific option that might be best for any specific project would vary depending upon the other water quality characteristics and water uses to be protected.

Streamflow

Because streamflow needs depend directly upon both the water quality and water uses to be achieved or protected, no existing problems were identified separately for this water quality related characteristic. Any problems related to streamflow were identified with the specific water quality characteristic (short-term temperature, dissolved oxygen, iron, manganese, turbidity and suspended solids, and gaseous supersaturation) or water use.

Resolubilization of Metals

High concentrations of iron, manganese, or both in the releases from two dams cause problems. Mitigative measures have been taken to reduce the adverse impact from these projects.

Turbidity and Suspended Solids

Releases from three dams cause problems with respect to turbidity and suspended solids. Hydraulic drag during peak generation at Fort Patrick Henry uproots aquatic plants from the Holston River bottom. The disturbance of sediments and the subsequent washing of materials from the plant roots increases turbidity and suspended solids. Options for correcting this problem have adverse impacts and are beyond the scope of this study. Water sluiced from the bottom of Ocoee No. 3 to prevent accumulations of silt causes a problem, but there is presently no readily available alternative if power generation is to be continued. High rates of turbine releases at Tims Ford previously caused high water levels downstream and erosion of river banks, but restrictions on releases are mitigating this problem.

Gaseous Supersaturation

No significant problems of gaseous supersaturation are known to be associated with the releases from the reservoirs evaluated in this study. However, there is the potential for elevated concentrations of total dissolved gases in the spillway releases from the mainstream reservoirs.

Water Use Impacts

The adverse impacts of releases from individual projects were evaluated and categorized for each of the downstream uses. The specific water quality related characteristics of the release that contribute to the impact were also identified. When more than one contributing water quality characteristic was identified, correction would be required for each characteristic for successful mitigation of conditions for the specific use.

Recreation

Releases from 18 reservoirs do not provide dependable streamflow high enough for recreational floating during the most desirable hours of the recreation season. Although reservoir releases are now scheduled at five dams to increase floating opportunities, such flows are not reliable enough to allow full development of commercial and public recreation.

Nantahala, Apalachia, and Ocoee No. 2 tailwaters are now receiving national interest as white water streams and should be given priority for future studies in relation to improving recreational opportunities.

Releases from 12 reservoirs adversely impact recreational fishing, primarily because streamflow is either above or below optimum during the early morning and late evening. Some fishery resources are also adversely affected by water quality characteristics other than streamflow; these characteristics would need to be improved before recreational fishing could be enhanced.

Fish and Other Aquatic Life

Releases from 14 reservoirs impact fisheries and aquatic life resources. In each case, the problem is caused by intermittent releases associated with peaking operations and by resulting short-term changes in temperature. Minimum instantaneous releases would solve the problem of cyclic wetting and drying of the streambed, eliminate the short-term cyclic temperature variations, and provide flows suitable for recreational fishing. Streamflow modifications alone would enhance the fisheries resource downstream from two of these projects.

In addition to streamflow, low concentrations of dissolved oxygen in the releases from nine reservoirs adversely impact tailwater fishery resources.

In addition to streamflow and dissolved oxygen, seasonal temperature impacts associated with the releases from six reservoirs create marginal conditions that are not favorable for either cold or warm water species. Any future studies of possible improvements for these tailwater reaches should consider providing warmer releases during the spring, summer, and fall to enhance the development of viable warm water fisheries.

The tailwater reaches downstream from South Holston, Fort Patrick Henry, Cherokee, Douglas, Norris, Chatuge, Apalachia, Blue Ridge, and Tims Ford should be considered as "priority" reaches for any future studies directed toward improving fishery resources.

Water Supply

Water supply is impacted by releases from two dams. For one of these projects the impact is related to both streamflow and resolubilized iron and manganese. Mitigative measures have successfully reduced these impacts in the past and are expected to be effective as long as they are continued. At the other dam, minimum mean daily releases are insufficient to meet water supply requirements downstream. Adjustments to increase releases have been made, but these are still insufficient to meet the request of the downstream user.

High concentrations of soluble manganese in the releases from one dam have created problems for downstream users, which have already been partially mitigated, and releases from another dam are a potential problem. Both are relatively new projects that cannot be fully assessed until the process of initial lake aging is completed.

Assimilative Capacity

Low concentrations of dissolved oxygen and low streamflows cause assimilative capacity problems downstream from two dams. Although no existing problems of assimilative capacity are associated with the releases from eleven dams, deviation from the minimum streamflows now provided would result in problems. Assimilative capacity is marginal downstream from six of these dams. Unless streamflows, concentrations of dissolved oxygen, or both are improved in the tailwaters below these projects, assimilative capacity will become one of the factors that will restrict development in areas along the reaches downstream.

The releases from Fort Patrick Henry - Boone, Cherokee, Douglas, and Norris should be given priority for any future studies in relation to improving assimilative capacity.

Generic Options for Reducing Impacts

Possible improvements at a specific project could involve both physical and operational changes. Specific changes must be evaluated and tailored directly to individual projects on a case-by-case basis, considering the impact to be corrected, the cost of implementing corrective actions, the present purposes of the project, present water uses both upstream and downstream, and the impact of any corrective action taken at projects located farther upstream. No single technology can be applied under all situations. The application of one technology at a specific project may reduce or correct one adverse impact but compound another adverse impact. This report does not evaluate or propose specific actions for individual projects.

Physical Changes

Physical changes include installing processes or equipment or structurally modifying projects. Physical changes are generally required or most useful for improving dissolved oxygen and, to a lesser extent, temperature and streamflow. Physical changes may be broadly classified as (1) control of water quality within the reservoir, (2) selective withdrawal of reservoir water with acceptable quality, (3) aeration of reservoir releases, or (4) habitat modification. For essentially all the methods investigated, more study is needed to develop adequate, detailed design criteria. To date, there have been no successfully demonstrated full-scale systems that have achieved consistently a dissolved oxygen concentration of 5 or 6 mg/l. In addition, the various methods need to be demonstrated to determine operational problems that inevitably arise in the process of developing new technologies.

Operational Changes

Some water quality and water use impacts associated with reservoir releases can be partially solved by changing present operating procedures. Operational changes are generally required or most useful for improving streamflow for downstream uses and for correcting problems of short-term temperature variations, concentrations of soluble iron and manganese, turbidity and suspended solids, and to a lesser extent, dissolved oxygen. It is doubtful that operational changes alone can mitigate water quality and water use impacts at all projects, especially those that involve severe dissolved oxygen problems or marginal long-term temperature problems. A combination of both physical and operational changes may be necessary to improve releases from some reservoirs.

Possible operational changes include (1) maintaining a constant, minimum discharge, (2) limiting maximum flow, and (3) altering rule curves for reservoir operations to prevent water quality problems. Such operational changes would severely affect and limit the flexibility of the reservoir system as it is now used for its primary statutory purposes of flood control, navigation, and power generation.

Recommendations for Further Studies

Overall, the greatest need is to investigate ways to solve the compound problems that occur at projects where multiple water quality characteristics and water uses are impaired. Both water quality and downstream water uses are now or potentially could be affected by the releases from 14 reservoirs. Each of these could be classified overall as a "priority" reservoir, but for various reasons, further studies should not be initiated now at five of them.

The overall ranking for initiation of additional studies for the remaining nine priority reservoirs is as follows:

1. Cherokee
2. Douglas
3. Norris
4. Fort Patrick Henry - Boone
5. Apalachia
6. Tims Ford
7. Chatuge
8. South Holston
9. Blue Ridge

The additional studies recommended for these nine projects cannot be limited to methods for improving the quality of the releases or enhancing downstream uses, because the achievement of these objectives directly conflicts with present uses of the tailwaters and upstream reservoirs. The studies must consider both present and possible future uses. Any action recommended on the basis of these studies should reflect the best balance of all of the competitive uses for a given body of water.

Legislative action would be required to authorize any changes that would conflict with present statutory purposes. An environmental impact statement would be required for any basic alterations in major projects or programs that could cause significant environmental impacts.

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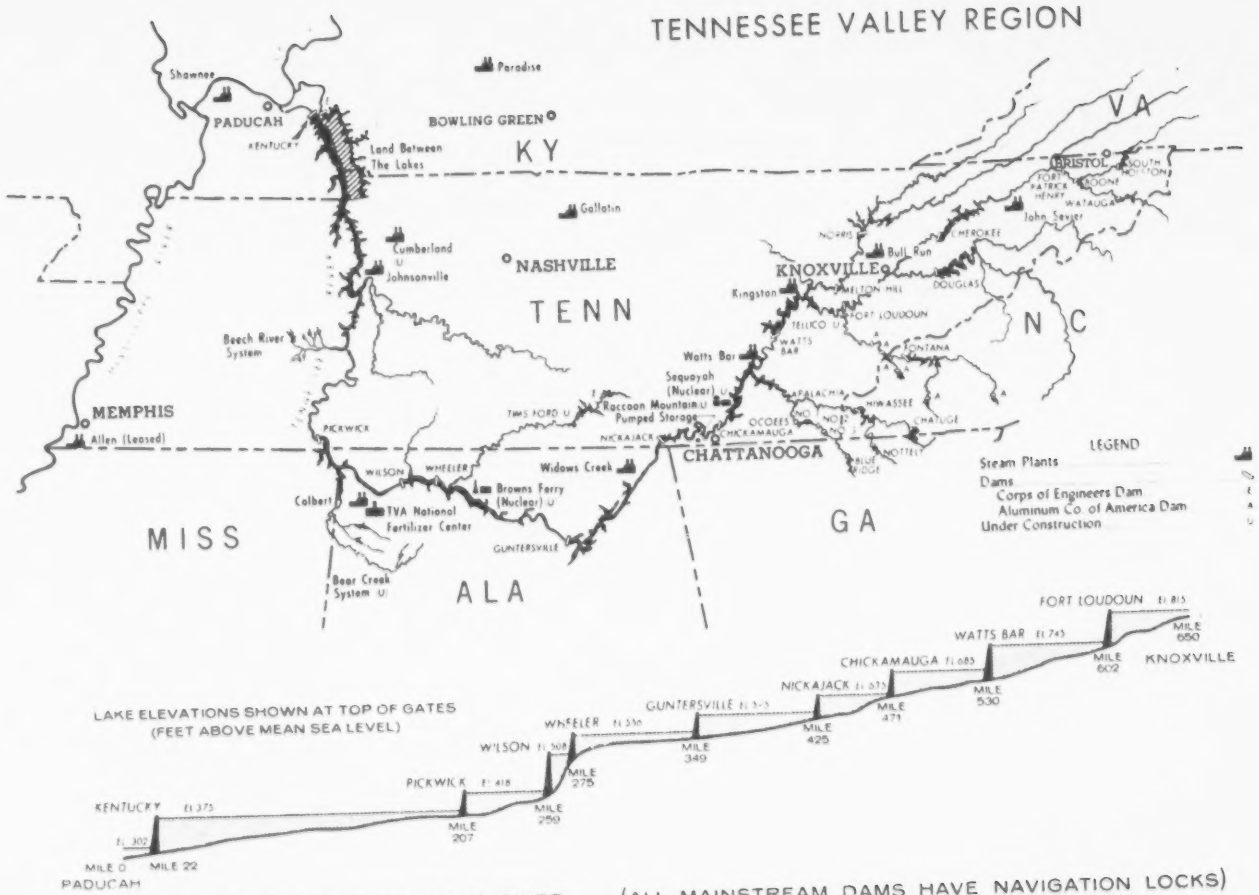

PROFILE OF THE TENNESSEE RIVER (ALL MAINSTREAM DAMS HAVE NAVIGATION LOCKS)

2862

CHAPTER I

INTRODUCTION

This report identifies adverse impacts on water quality and stream uses that are associated with water releases from dams operated as part of the Tennessee Valley Authority water management system. It also includes a generic assessment of available technologies for reducing these impacts and identifies some of the options for mitigating actions that TVA might consider. No attempt was made to identify mitigative actions for specific projects or to propose institutional methods for implementing such actions.

There are two possible methods for identifying and determining the extent of impacts from reservoir releases. The first method compares the releases from all structures to specific numerical criteria. This method simplifies problem identification and monitoring. However, the application of rigid, uniform numerical criteria may overlook the actual or highest value uses and needs upstream and downstream from a specific project. The second method determines the need for improvements on a case-by-case basis and emphasizes providing balanced protection of the water uses associated with each specific project without unduly penalizing any given project by the application of rigid numerical criteria. Although this method makes problem identification and subsequent monitoring efforts much more difficult, it provides the flexibility needed to optimize resource management. In this report, an attempt has been made to describe the problems and impacts with respect to both specific numerical criteria and water uses.

Some reservoirs in the Tennessee Valley were excluded from this study because of their limited size or the lack of basic data: the Beech River projects, the Bristol projects, the minor Alcoa projects, Watersville Reservoir, and Woods Reservoir. Those projects under construction but not yet completed were also excluded: Tellico, Columbia, Upper Bear Creek, and Cedar Creek projects. Great Falls Reservoir, although located in the Cumberland River Basin, was included because it is owned and operated by TVA.

In accordance with the TVA Act, the reservoir system has been operated as an integrated reservoir system for the primary purposes of flood control, navigation, and generation of power. Recreation and wildlife management programs are carried out as consistent with these primary purposes. Initially, they were generally operated to provide base load to the power system. As system load increased and as fossil and nuclear plants were added, however, their role shifted to one of providing a flexible reserve for responding to peak power demands. Any proposed modification of the present structures or operating schemes to mitigate adverse impacts of reservoir releases on water quality and stream uses must be closely evaluated both with respect to costs and expected benefits and with respect to impacts on present uses of the reservoir system.

CHAPTER II

GENERIC DEFINITION OF ADVERSE IMPACTS

Introduction

The releases from impoundments have both beneficial and adverse effects on the physical, chemical, and biological quality of stream reaches downstream from the regulating structure. These effects in turn impact the uses of the stream reach. Because the purpose of this report is to identify the adverse impact of reservoir releases on water quality and stream uses under present operating conditions, no attempt has been made to evaluate the beneficial aspects. The objective of this chapter is to provide a brief description of the more significant adverse water quality and stream use problems commonly associated with releases from reservoirs. The severity and scope of the impacts identified vary among the projects. It should be recognized that these descriptions do not identify all of the adverse impacts associated with reservoir releases; other water quality characteristics or water uses may be impacted significantly but only at one or two specific projects.

Water Quality Related Impacts

The principal water quality characteristics affected by reservoir releases are temperature, dissolved oxygen, resolubilization of metals (primarily iron and manganese), streamflow, turbidity and suspended solids, and gaseous supersaturation (primarily nitrogen). Adverse impacts can be associated with other factors such as odor, ammonia, hydrogen sulfide, other resolubilized metals, and algae; however, these impacts are significant only at isolated projects and would have to be considered on a case-by-case basis. Because most adverse water quality impacts are the result of natural phenomena directly related to the thermal conditions within the impoundment, the description of thermal impacts includes an explanation of typical thermal conditions that occur in an impoundment.

Temperature

An understanding of thermal stratification in reservoirs and of the influence it exerts on the way water flows through reservoirs is essential to an understanding of the effects a reservoir may have on the temperature and also on many other water quality characteristics of released water.

At the latitude of the Tennessee Valley, the reservoir phenomenon commonly termed "fall turnover" continues throughout winter and into early spring. The climate is such that the surface stratum of a reservoir is not cooled below the temperature corresponding to maximum water density (4°C).

Consequently, no period of density stratification develops in the colder months of the year. Instead, the water is essentially of uniform density and quite thoroughly mixed from top to bottom. Water released through the power intakes during such isothermal periods comes from the entire vertical section of the pool at the dam. As spring advances, warmer inflows from tributaries and direct heating of surface waters by the sun produce thermal stratification in the pool. By mid-May or early June during most years, the warm upper stratum (the epilimnion) is separated by the thermocline (the stratum in which temperature changes rapidly with depth) from the colder waters of the deep hypolimnion below. After the thermocline becomes established in the spring, mixing effects of wind and diurnal changes in atmospheric temperature are limited to the warm epilimnion. The thermocline fixes the lower limit of the mixing effect. After the thermocline becomes established, inflow from the headwaters usually flows directly into the epilimnion, where it may be held for months.

During thermal stratification, water released through low-level power intakes is drawn exclusively from the hypolimnion, because the warmer waters of the epilimnion float on the cooler, more dense waters below. The coldest (most dense) water at or above the intake level is discharged first. Thus, cold water deep in the pool and perhaps many miles upstream from the dam may be discharged before water that is at the dam and only 50 feet or so above the power intake but that is several degrees warmer. As the colder waters are discharged, warmer waters settle slowly downward. Velocities in the hypolimnion, induced by the draft, are very low except close to the intake.

As atmospheric temperatures continue to drop in the fall months, water in the surface stratum of a reservoir is eventually cooled below the temperature of the underlying water and, being heavier, sinks beneath it. This forces the warmer water to the surface, where in turn it is cooled. This process sets up a vertical circulation that, aided by winds, continues until the entire mass of water in the reservoir is essentially uniform in temperature and density. When water in a reservoir is mixing in this manner, the pool is said to be "turning over." This mixing process continues all winter and results in water that is essentially of uniform quality, in all respects, from the surface to the bottom.

During periods of thermal stratification, water released from the cold hypolimnion of a reservoir is much colder than the local inflow to the stream reach immediately downstream. Consequently, releases from a thermally stratified reservoir can have both a long-term impact (seasonal) and a short-term (daily) impact on the thermal regime of the downstream reach. The extent of these impacts depends upon the reservoir characteristics and daily operating discharge schedule.

The long-term impact of releases from the hypolimnion of a thermally stratified reservoir is primarily an overall lowering of the water temperature from early spring through early fall in the downstream reach. Average and maximum temperatures in the tailwater reaches during this period will be much lower than the corresponding temperatures that

occurred in the stream before construction of the reservoir. This overall reduction in stream temperatures changes the basic character of the tailwater reach from a warm water stream to a cold water stream and results in ecological conditions more favorable for cold water aquatic life than for warm water aquatic life.

This change has been recognized by the states and has been reflected in their use classification for streams. Some tailwater reaches, although they were warm water fisheries before the construction of a reservoir, have now been classified as cold water (trout) fisheries. Tennessee Valley tailwater reaches classified for cold water fisheries include those below South Holston, Wilbur, Fort Patrick Henry, Fontana, Norris, Chatuge, Nottely, Cheoah, Calderwood, Thorpe, Nantahala, and Santeetlah Dams (the last five are Alcoa projects). Tailwater reaches below Blue Ridge and Tims Ford are being managed as cold water fisheries even though they have not officially been classified for this use. Although the tailwater below Normandy is not classified as a cold water fishery, it is expected that it will be reclassified as such in the future, because development of a downstream cold water fishery was one of the purposes of the project.

The extent to which these tailwater reaches have thermal regimes suitable for the cold water classification depends on the relationship between the volume of the reservoir hypolimnion above the dam intakes (including cold water inflows from upstream) and the volume of reservoir releases during periods of thermal stratification. If the volume of cold hypolimnetic water is larger than the volume of the reservoir releases, the cooler water temperatures conducive to cold water aquatic life can be maintained in the tailwater throughout the spring, summer, and early fall. However, if the volume of the releases is greater than the volume of cold water available in the reservoir, warmer releases would occur during the latter portion of the period of thermal stratification. Temperatures during the spring and earlier portions of the summer would be favorable for cold water aquatic life but too cold for warm water aquatic life. During the late summer and early fall, temperatures would begin to approach those favorable for warm water aquatic life but would be too warm for cold water aquatic life.

The short-term impact of releases from the hypolimnion of a thermally stratified reservoir is the result of intermittent releases of cold water associated with the daily operation of the reservoir primarily to provide power during peak demands. During periods when water is not being released to generate power, the tailwater reaches may be warmed by solar heating and by warmer inflows from local tributary streams below the dam during daylight hours in the summer or cooled during winter or nighttime hours. When power generation begins at the dam, the sudden release of a large volume or "slug" of much colder water rapidly reduces the water temperature of the tailwater reach. When power generation stops, the water again gradually warms until generation is resumed and the next slug of cold water is released. Such cyclic changes in water temperature can adversely impact aquatic life if the overall change or the rate of change is too great.

It is readily recognized that changes in water temperature may adversely affect aquatic life or may create conditions more favorable for some species but less favorable for others. Although there is still technical uncertainty concerning the temperature rise that can be tolerated before adverse impacts will occur, state water quality standards generally limit not only the maximum stream temperature but also the allowable rise in overall temperature. Because the principal concern regarding temperature has historically been associated with discharges of heated water, the water quality standards for most states limit only the incremental rise in temperature. However, the temperature standard for Tennessee specifies an allowable incremental "change" that applies to either an increase or a decrease in water temperature. The Tennessee standards also limit rate of change.

Dissolved Oxygen

The mechanisms contributing to the depletion of oxygen in the bottom portion (hypolimnion) of a reservoir are closely related to the occurrence of thermal stratification. Natural processes such as the respiration of living organisms, the decomposition of organic materials, and the biochemical reaction of materials in the water and sediments continuously remove dissolved oxygen from reservoir waters. The exposure of surface water to the air, aided by wind and wave action; and the addition of oxygen-rich inflows from tributary streams replenish this supply of dissolved oxygen, and in a well mixed reservoir, it is distributed from top to bottom. When thermal stratification begins, however, vertical circulation and mixing are limited to localized effects within the epilimnion and hypolimnion, and little or no interchange takes place between the two strata. Although the surface waters continue to be reaerated, the hypolimnion becomes isolated. As the processes that demand oxygen continue there, they deplete the available supply. Therefore, during the long period of thermal stratification, dissolved oxygen concentration often becomes very low in the hypolimnion.

Water drawn from stratified impoundments through low-level intakes generally has low concentrations of dissolved oxygen during the summer and fall months. When this water is released, it may reduce the dissolved oxygen concentrations in the stream reaches below these dams to the extent that it is no longer sufficient to support fish and other desirable aquatic life or to allow the satisfactory assimilation of discharges from waste treatment facilities. These releases are reaerated by natural processes as the water flows downstream, but the length of the stream reach affected by low concentrations of dissolved oxygen depends upon the initial concentration of dissolved oxygen, streamflow, and channel characteristics of the stream reach.

Resolubilization of Metals

Water quality downstream from impoundments may, in some cases, be adversely affected by discharges with high concentrations of soluble metals. These conditions are usually related to periods of thermal stratification and oxygen depletion in the upstream reservoir. Iron and manganese are

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the metals of greatest concern. Oxidized forms of iron and manganese suspended in the water and deposited in bottom sediments are subjected to reducing conditions when the dissolved oxygen becomes depleted as a result of stratification.

Furthermore, oxidized forms of iron and manganese brought into the epilimnion during thermal stratification may settle into the hypolimnion and also become subject to reducing conditions. Under these conditions, they are subject to resolubilization and subsequent discharge to the downstream reach. As the releases flow downstream and become reaerated, the soluble manganese and iron are oxidized and again converted to insoluble forms that precipitate on the stream bottom. Because soluble iron oxidizes rather rapidly, the length of stream reach subject to high concentrations of soluble iron would be rather short. Soluble manganese oxidizes much more slowly, however, and a much longer stream reach would be subject to high concentrations of soluble manganese. High concentrations of either soluble iron or manganese would adversely impact downstream water supplies, because they can stain plumbing fixtures and laundry, affect the taste and aesthetic quality of the water, and interfere with manufacturing processes.

Streamflow

Many hydroelectric reservoirs are operated for flexible response to peak power demands. As a result, streamflow in the downstream reach often fluctuates widely, cyclically raising and lowering water depths downstream and cyclically wetting and drying shoreline environments or even the entire streambed immediately downstream from the project. This variation in streamflow may adversely affect use of the stream for recreation, aquatic life, water supply, and assimilative capacity.

Turbidity and Suspended Solids

Normally, reservoirs reduce turbidity and the concentration of suspended solids in releases by serving as tremendous settling basins. However, operating a reservoir in response to peak power demands produces scouring effects in the downstream reaches that may result in the resuspension of deposited bottom sediments and, in some cases, erosion of streambanks. Aquatic life farther downstream is subjected to a smothering effect when these bottom sediments resettle. Also, the lowering of reservoir levels for winter flood storage or for maintenance may result in significant movements and subsequent discharges of silt that had been deposited in the reservoir.

Gaseous Supersaturation

Gaseous supersaturation in water can occur as a result of rapid temperature increases, rapid pressure decreases, and turbulent mixing of air with water under hydrostatic pressures. The primary concern about excessive dissolved gases relates to the exposure of fish to waters containing excessive dissolved gas pressure or tension. Fish may be

stressed or killed when dissolved gases in the circulatory system come out of solution to form bubbles that block the flow of blood in capillary vessels. In aquatic organisms, this is referred to as gas bubble disease, which is analogous to the "bends" experienced by divers. External bubbles also appear on the fins, eyes, skin, and other body tissues. Because dissolved oxygen is extremely bioactive, it causes no problem. However, dissolved nitrogen is biologically inert in invertebrates and therefore the most significant cause of gas bubble disease.

Supersaturation of gases in releases from reservoirs is primarily related to spillway discharges. Air, which is 79 percent nitrogen, is entrained in the discharge as it passes over the spillway and plunges into the stilling basin below the dam. Increased pressure at the lower depths of the stilling basin forces the oxygen and nitrogen in the air bubbles to diffuse into the water. The extent of gas transfer to the water depends on how long the bubbles are detained in the tailwater (which, in turn, depends on bubble size and the vertical velocities in the tailwater), the depth to which the bubbles are carried, tubulence, initial concentrations of dissolved gases, and water temperature. As the water flows downstream from the dam, the concentrations of gases in the water tend to equilibrate with those in the atmosphere. The number of miles required for this to occur varies with each stream reach, depending upon the rate of flow and the physical characteristics of the stream channel.

Stream Use Related Impacts

The primary stream uses adversely impacted by reservoir releases include recreation, fisheries and other aquatic life, water supply (primarily potable and industrial water supply), and stream assimilative capacity. Adverse impacts are also associated with other stream uses such as agricultural water supply (irrigation and livestock watering) and aesthetics; however, these are significant only in isolated cases.

Recreation

Reservoir operating regimes can significantly impact or even preclude recreational uses of tailwaters. The rate and scheduling of reservoir releases mainly impact (1) recreational fishing use and (2) recreational floating use.

Recreational Fishing Use--The rates and schedules of reservoir releases can affect the use of tailwaters for fishing:

1. High discharge rates produce swift currents that preclude wade fishing, make bank fishing extremely difficult, and may impair fishing success.

2. Zero discharges in many cases decrease the extent of fishable water available.

3. Releases that are acceptable for bank and wade fishing often occur at times that are not prime for fishing (such as midday or night).

4. Seasonal temperature patterns of some tailwaters are not suitable for the development of either a good warm water or cold water fishery. In many cases, the lower water temperatures of releases have converted a previous warm water fishery to a put-grow-and-take cold water fishery. In some cases, a self-sustaining warm water fishery could provide more fishing use, particularly where tailwater conditions are marginal for cold water species.

Recreational Floating Use--The rate and schedules of reservoir releases can affect potential use of tailwaters for boating:

1. Zero flows eliminate floating opportunities and impair tailwater aesthetics.

2. Discharges that are adequate for floating use often occur at times that are not prime for floating.

3. The uncertainty of adequate releases during the prime periods for floating restricts individual and commercial floating use of many reservoir tailwaters.

4. The extremely low water temperatures of releases from some reservoirs discourage use for water-contact recreation such as tube rafting.

Fish and Other Aquatic Life

Tailwaters are defined as the portion of a stream from a dam to the headwaters of a downstream impoundment or to its confluence with a larger stream. There are more than 300 miles of tributary reservoir tailwaters in the Tennessee Valley. As discussed earlier, many physical and chemical characteristics of an unregulated stream are changed to some degree by impoundment and operation of the resultant reservoir:

1. Streamflow is much more variable on a daily basis, often increasing one hundred fold in a matter of minutes one or more times a day. These intermittent flows can result in drying the streambed and loss of fish habitat at low flows and in substrate scouring at high flows.

2. Thermal regimes are altered, typically causing tailwaters to be warmer in the winter and cooler in the summer than unregulated streams. In addition, extended low flows followed by high discharges can result in warming and rapid cooling of the tailwater.

3. Altered thermal regimes have created opportunities for the establishment of cold water fisheries at the expense of maintaining fisheries for endemic warm water species. In some cases, the resulting thermal regime favors neither warm nor cold water species.

4. The tailwaters of most of the stratified tributary reservoirs have seasonal deficits of dissolved oxygen.

5. Turbidity is generally lower than in unregulated streams.

6. Concentrations of certain trace metals may be greatly increased.

7. There is less movement of substrate than in unregulated streams; this sometimes results in compaction of the substrate.

8. Because upstream reservoirs tend to "sieve" or trap incoming organic debris, the productivity of tailwater systems depends upon fine particulate organics and plankton from the reservoirs and production of periphyton in the tailwater.

Although any one of these circumstances can influence the type of biological community that develops in a tailwater, the principal limiting factors are temperature, flow, dissolved oxygen, and toxic substances. Other factors are interactive components of the tailwater environment that more subtly influence the structure and productivity of fish and other biological communities. Concentrations of heavy metals and other toxic substances are seldom high enough to cause biological damage in Valley tailwaters. From a fisheries standpoint, temperature, flow regimes, and dissolved oxygen levels are the main factors of concern in the Tennessee Valley.

The nonfisheries biological communities are important parts of the food web and are necessary to the preservation or development of a viable biological system. In stream reaches immediately below impoundments (particularly those with low-level intakes), the nonfishery community is dominated principally by aquatic insect larvae, snails, and clams. The main source of food for this community is the organic material in reservoir releases.

Because benthic organisms are relatively nonmobile, their survival depends upon the streamflow and water quality conditions of their habitat. The releases from reservoirs can adversely impact the benthic community:

1. Intermittent releases can cyclically wet and dry large portions of the stream habitat.

2. High-volume intermittent releases may erode streambanks or scour the streambed and subsequently smother organisms farther downstream when the resuspended sediments again settle.

3. Dissolved oxygen concentrations may be lower than those that organisms can tolerate.

4. Rapid cyclic changes in water temperature associated with intermittent releases may be outside the range that the organisms can tolerate.

Under these conditions, overall biological productivity, species distribution, reproduction, and species diversity may be impaired to the point that no viable resources can be maintained.

Water Supply

One of the principal uses of surface water is for municipal and industrial water supply. Waters released from reservoirs are in most cases desirable as a source of water supply because of the cooler temperatures, low turbidity, low bacteria content, and relatively consistent mineral quality. Under certain circumstances, however, releases from storage reservoirs can have quality characteristics undesirable for water supply purposes.

Iron and manganese compounds abound through the Tennessee Valley and occur in the water and in the bottom sediments of reservoirs. When anaerobic conditions occur in a reservoir during periods of thermal stratification, reducing conditions in the hypolimnion can result in the resolubilization of iron and manganese from the water and the bottom sediments. Subsequent releases from the hypolimnion through low-level power intakes can contain concentrations of soluble forms of iron and manganese that are troublesome to downstream water supplies.

When iron and manganese concentrations in the supply are less than 300 and 50 μg/l, respectively, water of sufficient quality for potable municipal water can in most cases be produced by providing conventional treatment (coagulation, sedimentation, filtration, and disinfection). Quality requirements for industrial process water vary considerably from one type of industry to another; however, in general, industrial water users can operate successfully when process water is comparable in quality to conventionally treated municipal water supplies. These normal treatment processes are not effective in removing high concentrations of soluble iron or manganese. Excessive concentrations of iron or manganese in finished water do not constitute a health hazard, but they can stain plumbing fixtures and clothing, affect the taste and aesthetic quality of water, and interfere with manufacturing processes.

When high concentrations occur, additional treatment such as aeration and chemical additions are required to produce acceptable finished water. Beyond the additional treatment requirements, there are also problems associated with the operation of the additional treatment facilities when intermittent reservoir releases result in temporary flows of water high in soluble iron and manganese. Under these conditions, significant quantities of iron and manganese could enter treatment systems before they were detected.

Water supply intakes located below impoundments can obviously be affected when reservoir releases fail to provide sufficient quantities of water to meet use demands. The water supplies most often experiencing difficulties with insufficient quantity are located immediately below tributary dams or on stream reaches where tributary inflow between the water supply intake and the dam is insufficient to meet water supply requirements.

Assimilative Capacity

Use of streams for the assimilation of treated wastewaters is often omitted from the list of beneficial uses of water resources, yet the use of a stream's natural assimilative capability is a necessity and must be considered in an evaluation of the effects of reservoir releases on stream uses. Impoundments can adversely affect the assimilative capacity of the downstream reach by altering streamflows and lowering dissolved oxygen concentrations.

Water quality standards consist of stream use classifications and water quality criteria that define the stream conditions necessary to maintain the designated use classifications. In all cases, the water quality standards recognize that it is not practical or cost-effective to require meeting the numerical criteria under all streamflow conditions. Thus, all water quality standards identify a base minimum streamflow; if streamflow falls below that level, the water quality criteria are not applicable. Maintenance of water quality criteria at these designated minimum levels of streamflow results in these streamflows becoming the design basis streamflow for waste treatment facilities and discharge permit requirements. If streamflow falls below these identified critical flows, waste treatment by individual dischargers may not be sufficient to achieve the water quality criteria. The 7-day, 10-year recurrence interval minimum flow is normally the designated critical flow used on free-flowing unregulated streams. For regulated streams, the minimum base flow is the instantaneous minimum flow (or in some cases, the minimum average daily flow) resulting from the reservoir operation.

Normally, the design basis streamflows on regulated streams are less than the natural 7-day, 10-year minimum flows that occurred before impoundment. This is especially true of stream reaches below reservoirs used in response to peak generation demands, where releases may routinely be zero for several hours of the day and for several days of the year. In this situation, the individual dischargers must install additional waste treatment to protect water quality standards during periods of zero streamflow or provide holding ponds for storing wastewater following normal treatment until it can be discharged from these ponds in proportion to streamflow during the generating cycle.

Reservoir releases that are low in dissolved oxygen concentrations also significantly affect the levels of waste treatment that a downstream discharger must provide to meet water quality standards. Releases low in dissolved oxygen are reaerated to acceptable levels as the water flows downstream. However, the level of reaeration that occurs before the water reaches a downstream discharge depends upon the initial dissolved oxygen level in the release, the streamflow, the physical characteristics of the stream reach, and the distance between the dam and the outfall.

The level of waste treatment that a downstream discharger must provide depends upon the margin of the available oxygen resource at the outfall in comparison to the dissolved oxygen stream standard for the protection of fish and aquatic life. If the dissolved oxygen margin is not sufficient to assimilate the normally treated effluent and still provide adequate levels of dissolved oxygen to meet the fish and aquatic life criterion, the discharger must provide additional treatment. If reaeration has not been sufficient to bring the dissolved oxygen concentrations up to the stream standard, the discharger must provide sufficient additional waste treatment beyond the normal treatment requirements to ensure that the treated effluent does not further depress the dissolved oxygen concentration.

CHAPTER III

IMPACTS OF INDIVIDUAL PROJECTS ON WATER QUALITY

This chapter describes impacts of releases from individual projects in the Tennessee Valley on temperature, dissolved oxygen, resolubilization of metals (primarily iron and manganese), streamflow, turbidity and suspended solids, and gaseous supersaturation (primarily nitrogen). Where data were readily available, these impacts were evaluated on the basis of the operation of the projects from 1970 through 1977. To the extent practical, the severity of the impact at each project is identified.

Impacts on water quality are summarized in table 1. The impacts of releases from individual reservoirs were categorized for each water quality characteristic considered. These individual impacts were categorized as no impact (N), potential impact (P), and existing impact (E).

Table 1 makes it readily evident that the most critical impacts are associated with the releases from the tributary impoundments. Correction of the more severe tributary problems would probably result in improvement sufficient to satisfy the lesser water quality problems associated with releases from the main stream reservoirs. The most critical individual reservoir releases with respect to water quality considerations are those from Cherokee, Douglas, Tims Ford, Norris, South Holston, Blue Ridge, Fort Patrick Henry, Fontana, Chatuge, Nottely, and Great Falls.

Temperature

The temperature of reservoir releases can be considerably different from the surface temperature of the reservoir as well as from the temperature of the original river before impoundment. This effect is strongly related to water movement into, within, and out of the reservoir in the presence of density stratification, which is primarily caused by thermal stratification. The degree of thermal stratification in each of the reservoirs is classified in table 2. This classification is based on temperature observations, special studies, and the judgment of the TVA technical staff. Those reservoirs classified as unstratified do show diurnal temperature variations near the surface, but they are considered unstratified on a seasonal basis because they lack a defined, reoccurring surface layer of warm water.

Releases from reservoirs classified as unstratified would not result in a significant alteration of the downstream thermal regime and would be considered as having no long-term impact on the temperature of the downstream reaches. Reservoirs in this category include Nickajack, Wheeler, Wilbur, Ocoee No. 2, and Nolichucky.

Releases from reservoirs classified as weakly stratified could result in some alteration of the thermal regime downstream, but in most cases, the alteration would not be considered significant. Tributary reservoirs in this category include Fort Patrick Henry, Melton Hill, Apalachia, Ocoee

No. 1, Bear Creek, Cheoah and Calderwood, which are the smaller tributary reservoirs primarily operated as run-of-the-river reservoirs. The main stream reservoirs included in this category are Fort Loudoun, Watts Bar, Chickamauga, Guntersville, Wilson, Pickwick Landing, and Kentucky.

Releases from the 20 reservoirs that are strongly stratified produce significant long-term alterations in the thermal regime of the tailwater reaches. The extent to which these alterations have changed the long-term temperature regime depends upon the volume of cold water in the hypolimnion (including cold water inflows) and the volume of releases from the reservoir during periods of thermal stratification. In many cases, this alteration in the thermal regime of the tailwater reaches has already been recognized by the states by their classification of these reaches as cold water (trout) fisheries.

In assessing the applicability of this use classification, the average numbers of days in which the temperature of the releases exceeded 68, 74, and 80°F were used as guides. Most state water quality standards recognize 68°F as the maximum temperature for the cold water (trout) fishery use classification. The temperatures of 74 and 80°F were included in the assessment to determine the extent of deviations from the temperature of 68°F. The average numbers of days on which each of these temperatures was exceeded from 1970 to 1977 are summarized in table 3.

These data show that the releases from Cherokee, Douglas, Ocoee No. 3, Ocoee No. 1, and Great Falls are too warm to meet the 68°F maximum temperature criterion for a cold water fishery. Although temperature data are not available for Ocoee No. 2, because of the temperature of the releases from Ocoee No. 3 located upstream and Ocoee No. 1 located downstream, the releases from Ocoee No. 2 should also be considered as too warm for a cold water fishery. The thermal conditions of the releases from Melton Hill and Blue Ridge should be considered marginal for a cold water fishery. A cold water (trout) fishery classification would be inappropriate for the tailwater reaches from these 8 reservoirs.

With respect to the short-term (daily) impacts associated with reservoir releases, intermittent releases associated with peaking operations could result in significant changes in the tailwater temperatures. During periods of zero releases, tailwater temperatures may increase significantly if the equilibrium temperature is much higher than the temperature of the releases. The resumption of reservoir releases could significantly decrease the temperature in the tailwater.

The extent to which excessive daily changes in the temperature of tailrace water would occur depends upon the frequency and duration of the period of zero release and the degree of thermal stratification in the reservoirs. A period of zero release for about a day would allow the tailwater temperature to approach equilibrium temperature so that a large decrease in the temperature of tailwaters would occur when releases were resumed. A secondary factor that influences the temperature change that would occur in the reach below a dam is whether that reach is a free-flowing open river reach or an impounded reach.

A qualitative summary of the likelihood of large temperature changes or rates of change resulting from intermittent releases from individual reservoirs is shown in table 4. This summary is based on a comparison of the information in table 2, showing the extent of thermal stratification in each reservoir, and the information in table 5, which shows the numbers of days of zero release. The Tennessee water quality criteria of 5.4°F change and 3.6°F per hour rate of change have been used as guides to categorize the temperature change problem. It should be emphasized that this categorization is a qualitative categorization based on the experience and judgment of the TVA technical staff. Insufficient data are available for a quantitative categorization for all reservoirs.

Twenty-three reservoirs fall within the categories of very unlikely or unlikely to produce problems of temperature change. These groups include the 9 main stream Tennessee River reservoirs, 10 run-of-the-river tributary reservoirs, 3 new tributary reservoirs, and 1 storage reservoir (Boone). Boone Reservoir falls within this category because of its close operating relationship with Fort Patrick Henry Dam immediately downstream. Large fluctuations in water temperature would be very likely downstream from the tributary storage reservoirs with the exception of Boone. A large temperature change downstream from Melton Hill would be likely because of its operating relationship with respect to Norris upstream and Watts Bar downstream.

Dissolved Oxygen

The minimum dissolved oxygen water quality criterion applicable to the streams of most of the Valley states is 5.0 mg/l. Although this criterion was adopted primarily for the fish and other aquatic life stream use classifications, it is also, in most cases, applicable to all other stream use classifications. The basis for this criterion is that 5 mg/l of dissolved oxygen is the minimum concentration required for the propogation of warm water fish. However, this level of dissolved oxygen is not necessarily the minimum concentration required for fish survival.

The average numbers of days per year from 1970 to 1977 during which the dissolved oxygen concentrations of the individual project releases were less than 5, 3, and 1 mg/l are summarized in table 6. Also shown are estimates of the numbers of miles of stream reaches below each project in which concentrations of dissolved oxygen could be less than 5 mg/l under worst conditions, which occur during maximum generation when the dissolved oxygen content of the release is at a minimum. Under these conditions, the increased depth of water reduces the reaeration rate, and higher velocities decrease the time of passage in the reach, which in turn extends the length of the downstream reach affected. The data relating to concentrations of 3 and 1 mg/l of dissolved oxygen were included to allow an assessment of the severity of the problem at each project.

With respect to a strict numerical criterion of 5 mg/l of dissolved oxygen, releases from seven reservoirs (including an Alcoa reservoir) have no problem of dissolved oxygen levels. There are an additional 11

reservoirs (including an Alcoa reservoir) that have dissolved oxygen concentrations in the releases below 5 mg/l for less than 15 days, but no concentrations below 3 mg/l. Data on dissolved oxygen concentrations are not available for three reservoirs (Nolichucky, Thorpe, and Nantahala); however, it was judged from a knowledge of the tailwater reaches that releases from these projects cause no significant problems. These data indicate that there are 21 reservoirs (including two Alcoa reservoirs) with no substantial problems of low dissolved oxygen levels in their releases.

As evident from table 6, there are severe dissolved oxygen problems associated with the releases from eight reservoirs, in that concentrations less than 1 mg/l occur. These reservoirs are South Holston, Cherokee, Douglas, Fontana, Norris, Chatuge, Nottely, and Tims Ford, all of which fall into the category of storage reservoirs. The releases from Cherokee, Douglas, and Tims Ford cause the worst problems. This group of eight reservoirs should be considered as the "priority reservoirs" for any recommended subsequent studies of the dissolved oxygen problem.

A total of 10 reservoirs have dissolved oxygen problems associated with releases that would be classified in an "intermediate" category. This category includes those reservoirs that experience either periods of dissolved oxygen concentration below 5 mg/l (exceeding 15 days) or infrequent occurrences of concentrations less than 3 mg/l but no occurrences of concentrations less than 1 mg/l. The dissolved oxygen problems associated with several of these reservoirs should be considered as "secondary" because to a great extent they may be the result of inflows from other upstream reservoir releases that are low in dissolved oxygen. Specific reservoirs in this category include Fort Loudoun, Watts Bar, Fort Patrick Henry, and Cheoah (Alcoa project). Improvements in the levels of dissolved oxygen in the inflows to these reservoirs would contribute to improved quality of the releases, and in some cases, could completely eliminate the problem. Completion of the Tellico project would significantly improve the dissolved oxygen content of releases from Fort Loudoun.

In addition, the tailwaters below several projects have been classified by the states as "trout waters" because of the suitable temperature of reservoir releases. These include South Holston, Wilbur, Fort Patrick Henry, Fontana, Chatuge, Norris, Nottely, Hiwassee, Apalachia, Normandy (expected in the future), Santeetlah, Thorpe, Nantahala, Cheoah, and Calderwood (the last five are Alcoa projects). The tailwater reaches below Tims Ford and Blue Ridge are being managed as trout fisheries although they have not officially been classified for this use. Because trout require higher levels of dissolved oxygen than other species, the criterion applicable to the trout water classification is 6 mg/l. Although a separate assessment has not been made with respect to the 6 mg/l criterion, some insight into the extent of problems with this criterion can be obtained by reviewing the reservoir releases with respect to the three dissolved oxygen criteria that were assessed. Six of these reservoirs (South Holston, Fontana, Norris, Chatuge, Nottely, and Tims Ford) have already been identified within the group of projects having severe dissolved oxygen problems. Blue Ridge is in the "intermediate" category with regard to concentrations of dissolved

oxygen in the releases. Although only limited data are available for Thorpe and Nantahala, based on knowledge of these projects and their tailwater reach, it is judged that there are no significant dissolved oxygen problems related to these projects. There is no dissolved oxygen problem with releases from Normandy because the development of the tailwater cold water fishery was one of the purposes of the project and provisions were incorporated into the project to ensure the achievement of adequate dissolved oxygen. Concentrations of dissolved oxygen in releases from Wilbur, Fort Patrick Henry, Apalachia, Cheoah, and Calderwood cause greater problems for the present cold water classification than they would for a warm water classification.

Resolubilization of Metals

Resolubilization of metals in reservoir releases is primarily related to the temperature, dissolved oxygen, and pH conditions in the reservoir. Within the Tennessee Valley, the main factors impacting resolubilization of metals are temperature and dissolved oxygen. Except at the Ocoee projects, there are no unusual pH problems in the reservoirs. The specific metals most subject to resolubilization are iron and manganese, and these metals were used in this assessment as indicators of resolubilization problems assoicated with releases. Solubilized iron and manganese are also the metals that would most often impact downstream uses for potable and industrial water supplies.

As a basis for reference, the present Environmental Protection Agency (EPA) guidelines for public water supply for iron and manganese are 300 and 50 μg/l, respectively. These guidelines apply to the total form of the metal and not the soluble form. The more critical form is the soluble form, because the insoluble portion is usually associated with the particulate matter suspended in the water, which is readily removed by conventional water treatment processes. For purposes of this assessment, the EPA guidelines were used as the numerical criteria for determining impacts of reservoir releases, although the TVA staff believes these criteria are somewhat conservative.

The total iron and manganese concentrations observed in the releases from individual reservoir projects from 1974 through 1976 are summarized in table 7. Also included in the table is a summary of the dissolved iron and manganese concentrations for those projects for which data were available. From a comparison of the total form and the dissolved form, it is evident that, in most cases, most of the iron and manganese occurs in the suspended or particulate form. The data also show that the mean concentrations were much closer to the minimum than to maximum concentrations. This indicates that the data distribution is skewed and that most of the data are less than the mean values. This also indicates that the mean values are strongly influenced by the occurrence of a few high observations and, as a result, tend to overstate the normal concentration in the releases. High concentrations in releases would normally be expected to coincide with periods of high turbidity and suspended solids associated with periods of heavy rainfall and surface water runoff. Therefore, the mean concentration of the total form of each

metal was used in this assessment for comparison with the suggested EPA guidelines. This comparison, however, may tend to overstate the extent of the problem.

No recent data on iron and manganese are available for three reservoirs (Nolichucky, Thorpe, and Nantahala); however, there are no known problems associated with releases from these projects.

Releases from 12 reservoirs had mean concentrations less than 300 μg/l total iron. In addition, in releases from 15 reservoirs the mean total iron concentration was within the range of 300 to 500 μg/l. Based on the conservative method by which this assessment was made and an engineering knowledge of the reservoirs, it was concluded that there are no significant iron problems associated with the releases from these 30 reservoirs as they are now operated.

The mean total iron concentration exceeded 500 μg/l in nine reservoirs (Kentucky, Douglas, Chatuge, Nottely, Ocoee No. 3, Ocoee No. 2, Normandy, Bear Creek, and Santeetlah). The mean concentration of 606 μg/l in the releases from Kentucky Reservoir was the lowest mean concentration for releases from these nine reservoirs. Because Kentucky is a main stream reservoir in which strong thermal stratification does not occur and because it is subject to frequent flood control operations associated with localized surface water runoff, most of this iron concentration would be expected to occur in the particulate or suspended form. Therefore, it is judged that there would be no significant impacts on downstream water uses resulting from the Kentucky releases.

The high concentrations of iron in releases from the Ocoee No. 3 and Ocoee No. 2 projects are primarily associated with industrial waste discharges (impacting pH) and extensive surface water runoff from the Copper Basin area. Consequently, the occurrence of high concentrations of iron at these projects should be judged potential problems associated with normal reservoir releases or operations if water quality is improved in the future.

Releases from the Normandy project have high concentrations of both total and soluble iron. These concentrations are judged to be associated with extensive dissolved oxygen depletion during the first few years of lake aging. Within the next few years, it is expected that this phenomenon will be completed and that the iron concentration will decrease. In addition, provisions were incorporated in the project design and operation to ensure that all releases from this project would be well aerated, which would result in the ready oxidation of the soluble iron. The iron problems associated with the releases from Normandy are judged to be only temporary in nature; consequently, no long-term iron problems are expected to be associated with Normandy releases.

Releases from the Bear Creek project are subject to the same problems of lake aging identified for Normandy. In addition, the Bear Creek project receives larger amounts of surface water runoff from an area that has high concentrations of iron in the geologic formations of the basin. A comparison of data for total and soluble iron shows that most of this iron occurs in the insoluble form. As initial lake aging is completed,

iron concentrations are expected to be reduced. There is now no reason to believe that long-term iron problems will occur in the releases from Bear Creek.

Potentially significant problems are associated with the total iron concentrations in the releases from four reservoirs (Douglas, Chatuge, Nottely, and Santeetlah). Three of these reservoirs (Douglas, Chatuge, and Nottely) have already been identified as priority reservoirs with respect to the problems of low levels of dissolved oxygen associated with their releases. Improvement of the dissolved oxygen concentration of the releases from these three projects would in all probability resolve the iron problems. No separate assessment has been made for Santeetlah because it is an Alcoa project and because its releases are not impacted by or do not impact a TVA reservoir.

The mean concentration of manganese in the releases from 10 reservoirs was 50 μg/l, or less. In addition, concentrations in releases from six reservoirs ranged from 51 to 60 μg/l, and those in releases from five reservoirs ranged from 61 to 70 μg/l. The conservative nature of this assessment method indicated no significant problems associated with the total manganese concentrations in the releases from these 21 reservoirs.

Mean total manganese concentrations in releases from 15 reservoirs were greater than 70 μg/l. Included in this group are three main stream reservoirs (Watts Bar, Chickamauga, and Guntersville). Because these reservoirs do not undergo strong thermal stratification, and because significant dissolved oxygen depletion does not occur in these reservoirs, these high concentrations of total manganese in the releases are not judged to be the result of extensive resolubilization within the reservoirs. The principal source of these high mean concentrations of total manganese is surface water runoff associated with frequent periods of heavy local rainfall. This is substantiated by the high maximum concentrations in the Chickamauga and Guntersville releases, which have greatly impacted the mean concentration. In addition, the dissolved manganese data for the Watts Bar, Chickamauga, Nickajack, and Wheeler releases confirm that much of the total manganese concentration in the releases is in particulate or suspended form. These data indicate that no significant manganese problems are associated with the releases from these three main stream reservoirs.

The high manganese concentrations in the releases from the Ocoee No. 1, No. 2, and No. 3 projects are primarily attributed to the impacts of industrial waste discharges and surface water runoff from the Copper Basin area. Although there is a public water supply intake downstream from Ocoee No. 1, the high manganese concentrations in releases from these projects are not attributable to extensive resolubilization within the reservoirs. Therefore, although a potential manganese problem exists at this downstream water supply, this impact is not judged attributable to the reservoir releases as such.

The high manganese concentrations in releases from Normandy are primarily attributed to the impacts associated with initial lake aging. Within the next few years, these levels are expected to decline. The provisions incorporated into the project design and operation to provide aeration

of the releases should mitigate, in part, any future downstream manganese problems. Because the oxidation rate for manganese is much lower than that for iron, however, there is a potential for future downstream manganese problems associated with the releases from Normandy.

Manganese concentrations in excess of 70 μg/l occur in the releases from Cherokee, Douglas, Chatuge, Nottely, Tims Ford, Great Falls, Bear Creek, and Little Bear Creek. Six of these reservoirs (Cherokee, Douglas, Chatuge, Nottely, Tims Ford, and Great Falls) were identified as becoming strongly stratified and (with the exception of Great Falls) are considered as being "priority reservoirs" with respect to problems of low concentrations of dissolved oxygen in the releases. These low concentrations of dissolved oxygen are conducive to the occurrence of reducing conditions in the reservoir hypolimnion that could result in high concentrations of resolubilized manganese in the releases. However, there are no known problems associated with the high concentrations of manganese in the releases from Cherokee, Douglas, Chatuge, Nottely, and Great Falls. Therefore, releases from these projects should be considered as only potential problems. Critical manganese problems have occurred at a water supply downstream from Tims Ford. The implementation of mitigative action to reduce the adverse impacts associated with the low dissolved oxygen releases from this project should contribute to alleviating the problems associated with high manganese concentrations. However, because the oxidation rate for soluble manganese is much lower than that for iron, it is uncertain if mitigative action to reduce the dissolved oxygen problem would be sufficient to eliminate the manganese problem.

High concentrations of total and soluble manganese do occur in the releases from the Bear Creek and Little Bear Creek projects. Although a portion of these elevated concentrations may be attributable to initial lake aging, there is a potential for continued high concentrations in the future. Because there is a potential long-term problem with these releases, they should be periodically assessed to determine the extent of any continuing long-term problem.

Although there are no significant iron or manganese problems associated with the normal releases from South Holston Reservoir, there has been and continues to be a significant problem associated with maintenance operations at this project. This problem is the result of the buildup of a "pocket" of water containing high concentrations of iron or manganese (primarily manganese) in the original river channel within the reservoir, which is at the same elevation as the reservoir bypass sluice. During periods of hydro unit maintenance, releases must be maintained for downstream water supply. These releases can only be made through the sluice, which withdraws water from the pocket of water with high iron and manganese concentrations at the bottom of the reservoir. These releases have, in the past, had a significant adverse impact on the downstream water supply. Although there is no simple method for correcting this problem permanently, mitigative measures have been taken on a case-by-case basis to reduce the magnitude of the problem. These actions include, (1) scheduling maintenance outage to coincide with the period when the manganese concentrations in the vicinity of the sluice are at their lowest, (2) bleeding the high manganese water from the bottom during the period before the maintenance outage, (3) providing notification

and technical assistance to the water plant operators before and during sluicing operations, and (4) monitoring iron and manganese concentrations in the releases and in the reservoir during the sluicing operations to provide early warning to the water system if unusual conditions are encountered. These actions have been effective in reducing the impact of the problems, and it is expected that they will continue to be used for future maintenance outages.

Streamflow

The construction and operation of reservoirs can significantly affect the flow in the stream reach below a dam. Under natural conditions, streamflow may on occasion recede to low levels; however, this is a gradual recession and usually results in some base minimal flow still occurring in the streambed during critical seasons. However, a regulated stream is subject to complete termination of flow at any time depending upon the schedule of reservoir operations. During periods of zero release, the downstream tailwater reach is subject to reduced water depths and drying of the streambed if the reach below the dam is not impounded by another downstream reservoir or if it does not receive a significant inflow from tributaries below the dam. Table 5 indicates the extent of this problem. It shows the average numbers of days per year on which, for a defined 24-hour period, the releases from the individual projects are zero.

Of equal importance is the fact that the table does not include an identification of the number of hours each day of zero discharge, because periods of zero releases occur almost daily at most reservoirs. The exception to this generalization is that minimum instantaneous flows are maintained at Kentucky, Chilhowee, Normandy, Nolichucky, Bear Creek, and Little Bear Creek. The information to quantify the frequency and duration of periods of zero releases, for periods other than a day, were not readily available in a form that could be included in the table. Further studies would be necessary to evaluate these data to determine the frequency and durations of these periods of zero releases and to quantify their impact on the tailwater streamflow regime.

Also included in the table for purposes of comparison is an estimate of the natural 7-day, 10-year minimum streamflow that would have occurred at each reservoir site without regulation and an identification of the condition of the tailwater reach with respect to downstream impoundment or open river stream conditions. For the nonpower projects, table 5 also summarizes minimum regulated streamflow and the natural 7-day, 10-year streamflow.

Based on a review of the information in the tables, it is concluded that there are basically no streamflow problems resulting from intermittment reservoir releases from the main stream reservoirs, from the tributary reservoirs where the tailwater reach is impounded, or from the nonpower projects that have provisions for maintaining minimum instantaneous streamflows incorporated into their design and operation. Possible exceptions to this would be the releases from Chickamauga and Guntersville, which could potentially impact downstream waste discharges.

Turbidity and Suspended Solids

No applicab.e water quality criteria have been established for turbidity and suspended solids. In the stream, wide variations occur naturally because turbidity and suspended solids are normally the result of soil erosion associated with surface water runoff following rainfall. In most cases, these characteristics are indicators of the physical suspension of inert soil and sediment particles in the water column under turbulent flow conditions. Under quiescent flow conditions, these particules readily settle by gravity.

Observed turbidity and concentrations of suspended solids in the releases from individual reservoirs from 1974 through 1976 are summarized in table 8. These data typically reflect the characteristics expected for normal reservoir releases. However, after heavy rainfall, turbidity and concentrations of solids much higher than those reflected in the table may occur in turbine or spillway releases from several projects for short periods. There are no significant water quality problems associated with the turbidity or concentrations of suspended solids of the normal releases (turbine or spillway) from any of the reservoirs.

No significant adverse effects from turbidity and suspended solids are known to result from the scouring of downstream reaches by releases from any of the reservoirs except Fort Patrick Henry and Tims Ford. The releases from Fort Patrick Henry have an indirect scouring effect in the reach of the Holston River upstream from the John Sevier Steam Plant retention dam. The streambed of this reach of the river is extensively colonized by prolific growths of aquatic macrophytes. As these plants grow, their "hydraulic drag" increases to the point that the root system is not capable of holding the plants. The streamflow pulls the plants up by the roots and carries them downstream. When this occurs, increased turbidity and concentrations of suspended solids result from the disturbance of the bottom substrate in the vicinity of the plant root system and from the washing of sediment lodged in the root system of the floating plants. The critical hydraulic conditions associated with this phenomenon are rapidly increasing stream velocities associated with the downstream movement of the power wave from the peaking operations at Fort Patrick Henry Dam. Although this condition results in increased turbidity and suspended solids concentrations and also creates unpleasant aesthetic conditions in this reach of the Holston River, it may also have a beneficial effect of limiting the growth of aquatic macrophytes.

At Tims Ford, extensive scouring and overbank streamflows occurred during the initial periods of operation. This condition resulted from high capacity operation of the hydro unit for this project. Although no specific water quality data are available, these operations created conditions of increased turbidity and concentrations of suspended solids similar to those expected under natural flooding conditions. To mitigate this situation, operating restrictions have been placed on the Tims Ford unit to limit release rates to those that the downstream stream reach is hydraulically capable of accommodating.

The Ocoee No. 3 project is unique with respect to turbidity and suspended solids. The reservoir has become extensively silted by runoff of storm

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water from the Copper Basin area. Within a few hundred feet of the dam, extensive silt deposits are higher than the spillway crest. Consequently, during flood control operations, extensive quantities of silt are discharged through the spillway gates and result in high turbidity and concentrations of suspended solids in the spillway releases. Most of this silt is carried downstream with the flood waters and has no significant impact on the water quality of the reach immediately downstream.

However, the critical situation associated with this reservoir is the extensive silt deposits that accumulate near the hydro unit intake. To prevent sediment from accumulating to the level that entrainment into the intake would damage the generating unit, periodic bottom sluicing is required. The sluiced water is in essence mud that coats the downstream channel and adversely impacts the quality of the residual pools in the stream channel. There does not now appear to be any feasible alternative to the sluicing operations if the Ocoee No. 3 project is to continue to be used for hydro generation.

The Nolichucky Project is also a unique situation with respect to turbidity and suspended solids. This reservoir, like Ocoee No. 3, has become extensively silted as a result of both point and nonpoint source discharges originating upstream. During the late 1960s, when the reservoir was drained for maintenance purposes, massive silt movements occurred within the reservoir and covered the intakes of three of the four hydro units. With increased maintenance and structural problems associated with the dam, a decision was made in the early 1970s to retire the project.

The disposition of silt in the reservoir was the greatest problem associated with the alternatives available for the retirement of the project. Consequently, the alternative adopted was to strengthen the structure so as to retain the silt in the reservoir and to develop the remaining surface portion of the reservoir into a wildfowl resting area. In conjunction with this, the powerhouse was renovated and converted to a museum, and the adjacent shoreline areas were converted to an environmental education area.

The project is now operated as a run-of-the-river detention dam, although reservoir elevation is periodically fluctuated somewhat to improve the browse conditions for wildlife. Consequently, the turbidity and concentrations of suspended solids in the overflow releases from Nolichucky reflect the conditions in the inflow to the reservoir as they may be altered by deposition or resuspension as the water passes through the reservoir. The extent to which these releases adversely impact downstream water quality or stream uses in the Nolichucky River is unknown.

Gaseous Supersaturation

The main environmental concern about supersaturation of dissolved gases is the potential for the occurrence of gas bubble disease in fish. Gaseous supersaturation downstream from reservoirs is normally associated with spillway releases to deep stilling basins. The suggested EPA

guideline for total dissolved gases is that the concentration should not exceed 110 percent of the saturation value for the existing atmospheric and hydrostatic pressures.

Generally, the occurrence of supersaturated concentrations of total dissolved gases that could adversely impact aquatic life is not considered a significant problem associated with the releases from projects in the Tennessee Valley. This conclusion is substantiated by the results of investigations of fish kills and other fisheries studies during which no evidence of gas bubble disease in fish has ever been encountered.

Because very few data are available on total dissolved gas conditions downstream from reservoirs in the Tennessee Valley, the potential for the occurrence of adverse concentrations was assessed indirectly by reviewing the frequency of spillway operations (including sluicing). The average numbers of days per year of spilling or sluicing releases at each project from 1972 through 1977 are summarized in table 9. The numbers of days indicated in the table are the days on which spilling or sluicing occurred for some period, no matter how brief, and should not be misinterpreted that spilling necessarily occurred for the entire 24-hour period.

Table 9 shows that the frequency of spilling at the tributary reservoirs is generally very low except at Norris, Apalachia, Ocoee No. 3, Ocoee No. 1, Tims Ford, Great Falls, Normandy, and Nolichucky. All spillway releases or other discharges from these latter reservoirs are to shallow stilling basins from which the water then flows into relatively shallow stream reaches. These two factors would help minimize the occurrence of supersaturation. In addition, spillway operations at projects with hydro generating capabilities are normally conducted concurrently with turbine releases. The turbine releases provide additional compensation with respect to dissolved gas saturation in that they are often much colder (therefore raising the saturation concentration) and usually have dissolved gas concentrations much lower than those of the spillway releases.

Main stream reservoirs spill water relatively frequently each year, sometimes for extended periods. During flood control operation, tailwaters may be 30 feet deep (about one atmosphere of pressure) or more, and the potential exists for elevated concentrations of dissolved gases. Because of the high stream velocities and turbulence associated with these flood control operations, long stream reaches could be impacted by elevated concentrations of dissolved gases.

Thus, it is concluded that, for tributary reservoirs, there is little potential for frequent and prolonged elevated concentrations of dissolved gases. However, spillway operations associated with the main stream reservoirs could result in concentrations of total dissolved gases remaining elevated for extended periods in relatively long stream reaches.

CHAPTER IV

IMPACTS OF INDIVIDUAL PROJECTS ON STREAM USES

On the basis of the water quality impacts identified in chapter III and the operation of the projects from 1970 through 1977, this chapter describes the impacts of the releases from the individual projects in the Tennessee Valley on downstream uses of water for recreation, fisheries and other aquatic life, water supply, and assimilative capacity. The assessments are also based on knowledge of specific problems that downstream users have experienced. In some instances, particularly in the case of recreation and fisheries resources, an attempt was made to assess the opportunties for resource utilization that have been precluded in past years as a result of adverse water quality conditions and discharge regimes.

Impacts on stream uses are summarized in table 10. In all cases, an attempt was made to assess the severity of the impact and to suggest improvements in water quality needed to enhance the use. Improvements have been identified as far as practical to protect uses on a case-by-case basis rather than to meet specific numerical criteria. These assessments relate to downstream uses but do not consider potential impact of the possible improvements on present uses or upstream uses. Additional studies would be required to address the balance between present upstream and downstream uses and potential future uses.

The summary table shows that the most critical stream use impacts under present operating conditions are associated with the releases from the tributary impoundments. There are no significant existing impacts on water use associated with releases from the main stream reservoirs. However, there is the potential for future impacts from the releases from Chickamauga and Guntersville on assimilative capacity.

Extreme fluctuations in release rates and seasonally low concentrations of dissolved oxygen cause most of the use problems associated with the tributary reservoirs. For instance, inadequate minimum flows reduce available habitat for fish and fish food organisms, impair stream aesthetics, limit recreational floating, allow excessive temperature fluctuations, and limit available water supplies and stream assimilative capacities. Maximum or peak discharges limit fishing use and reaeration of oxygen-deficient water. Low concentrations of dissolved oxygen limit the diversity and abundance of fish and fish food organisms. Although little can be done to correct oxygen deficits by modifying flow, the establishment of an adequate minimum or base flow could significantly increase opportunities for recreational use and enhance uses for fisheries resource, water supply, and assimilative capacity. Recreational floating could be enhanced through selective scheduling of peak discharges.

The most critical individual reservoirs with respect to the overall adverse impacts of present releases on downstream water uses are South Holston, Fort Patrick Henry, Cherokee, Douglas, Norris, Chatuge, Nottely, Apalachia, Blue Ridge, Tims Ford, and Nantahala. With regard to water use downstream, these 11 projects should be considered as the "priority reservoirs."

Consequently, any additional studies to develop mitigative measures to reduce adverse impacts on water uses should be directed toward these reservoirs first. Except for Fort Patrick Henry, Apalachia, Blue Ridge, and Nantahala each of these projects has been identified as a priority reservoir with respect to any future studies for improving low concentrations of dissolved oxygen.

The other tributary reservoirs would be classified in an "intermediate" category regarding adverse impacts on water uses. This does not imply that the impact on a specific use is not as severe at these projects, but rather implies that the overall impact on all uses is not as severe.

Recreation

The principal adverse impacts of reservoir releases on existing or potential recreational uses are directly associated with the water quality factors affected by streamflow. Other water quality characteristics that can directly impact recreational uses are turbidity and suspended solids, odor, and color. There are, in general, no significant problems associated with the occurrence of these secondary factors in the releases from reservoirs in the Tennessee Valley addressed in this report, although significant problems may be encountered on a case-by-case basis.

The two most important recreational uses associated with the tailwater reaches below reservoirs are fishing and floating. Recreational uses are also indirectly affected by temperature and dissolved oxygen, which are primary considerations for fisheries resources. No significant adverse impacts on any recreational use are associated with releases from mainstream reservoirs. Some significant adverse impacts on floating and fishing recreational uses are associated with releases from most of the tributary impoundments, however.

Tailwater Floating Use--The general effects of reservoir releases from tributary reservoirs on downstream recreational uses are restricted for quality commercial development and boating use. For various reasons, there is often a lack of adequate, reliably regular flow during the daylight hours most desirable for floating (10 a.m. to 6 p.m.) during peak recreation season. Additionally, the bypassing of water around the natural streambed (as occurs below Ocoee No. 2 dam) precludes boating use.

Releases from the following reservoirs adversely affect potential recreational development for floating:

Ocoee No. 1, 2, 3	Fort Patrick Henry
Nantahala	Tims Ford
Apalachia	Chilhowee
Thorpe	Chatuge
South Holston	Nottely
Norris	Blue Ridge
Cherokee	Bear Creek Reservoir
Douglas	Wilbur

Weekend operations at Nantahala and Apalachia have resulted in extensive interest in floating these tailwaters. However, significant conflicts have developed with public use and commercial recreational development because adequate flows could not consistently be provided during desired periods. Releases for recreational purposes at Ocoee No. 2 are evaluated in the environmental impact statement concerning rehabilitation of this project. These three reaches are now receiving considerable national interest as white water streams and should be given priority for any future studies for recreational enhancement.

Some releases are scheduled for recreational purposes downstream from Tims Ford, but the inconsistency of these releases results in conflicts among river uses. Chilhowee Reservoir is operated to maintain a minimum flow for other purposes that also provides some recreational opportunity, but it is not adequate for optimal floating use.

Preliminary plans for recreational releases from Bear Creek are being evaluated, but there is yet no definite commitment to provide such releases.

Special releases for specific boating events have been provided upon request from organized boating groups at Nantahala, Apalachia, Ocoee No. 2, and Norris.

Tailwater Fishing Use--The nine main stream reservoirs (Fort Loudoun, Watts Bar, Chickamauga, Nickajack, Guntersville, Wheeler, Wilson, Pickwick, and Kentucky) and Melton Hill Reservoir receive extensive use ranging from an estimated 79,000 trips per year (1977) at Kentucky to 20,000 trips at Melton Hill. It is possible that selected combinations of turbine discharges during operation of these reservoirs could significantly affect fish distribution in the tailwaters and, therefore, their use for fishing.

Impacts on fishing use of TVA tailwater areas are mainly related to scheduling and rates of discharges. Tailwaters that now receive extensive fishing interest [Norris, Chilhowee, South Holston, Douglas, Apalachia, Tims Ford, Wilbur (Watauga), Nantahala, Thorpe, Chatuge, Fort Patrick Henry, and Cherokee] have limited fishing access because of present reservoir operating regimes (i.e., fishing is possible only when discharge rates and time of discharge permit). High discharge rates during prime times for fishing use (early morning and late evening), particularly during weekends and holidays, result in high velocities and increased depths that preclude wade fishing and significantly hinder bank fishing.

Nottely, Blue Ridge, and Ocoee No. 1, 2, and 3 provide limited fishing opportunities because of factors that adversely impact fisheries resources. If the fisheries resources of these tailwaters are improved, reservoir releases could still hinder fishing. All other tailwaters provide recreational fishing but experience release rates that limit fishing use; however, they are of less immediate importance.

The low temperatures of many storage impoundments have converted a previous warm water fishery to a cold water (trout) fishery. Some tailwaters provide established put-grow-and-take trout fisheries, but others with marginal temperatures not adequate for cold water species could provide more use for fishing if a warm water fishery were developed. These tailwaters are affected by cool or cold discharges for only part of the summer; therefore, both cold and warm water fishery uses are limited. These reservoirs include Cherokee, Douglas, Melton Hill, Blue Ridge, Ocoee No. 1, Ocoee No. 2, Ocoee No. 3, and Great Falls.

Potential Actions for Improving Recreation--A rescheduling of releases could potentially reduce the impacts on recreational uses of tailwaters that result from present operating regimes. However, any change in existing operations will affect power generation and possibly flood control, navigation, and recreational use on the upstream reservoir. Evaluations of existing reservoir operations, with specific consideration of potential recreational opportunities, may identify methods for providing additional downstream uses without adversely affecting other programs:

1. Establish instantaneous minimum streamflows to enhance fisheries resources.

2. Schedule most discharges for recreation on weekends (including Fridays) and holidays from May through September to increase opportunities for recreational use during peak recreational demand. Consider the desirability of some scheduled releases during early spring to provide more fishing opportunities for migratory fish species.

3. Schedule minimum releases (item 1 above) at appropriate high-use sites during early morning and late evening to provide discharge levels suitable for wading and bank fishing and, in many cases, to provide opportunities for low-flow floating use.

4. Schedule higher-rate releases during midday (about 10 a.m. to 6 p.m.) to provide opportunities for optimum floating use.

5. Guarantee flows for recreational use and to provide incentive for development of commercial recreation.

6. Minimize nighttime discharges to reserve more water (generating capacity) for daytime releases when recreational opportunities can be realized.

Fish and Other Aquatic Life

The main adverse impacts of reservoir releases on existing or potential fisheries resources of stream reaches below impoundments are directly related to the water quality and the quantity of the releases--temperature, dissolved oxygen, and streamflow. Other water quality factors affected by reservoir releases, such as solubilized metals, turbidity and suspended

solids, and total gas supersaturation, are also capable of adversely impacting fishery resources, but in general, these water quality characteristics do not cause problems for fisheries in the releases from reservoirs in the Tennessee Valley.

Two main components of a fishery resource must be assessed: the fish and the other aquatic biota that comprise the food chain. In this assessment, an attempt has been made to consider both components within the scope of readily available data.

No significant adverse impacts on either fish or the aquatic food chain are associated with releases from the main stream reservoirs. Although historically (1960s) there has been low dissolved oxygen in the releases from Fort Loudoun and Watts Bar that have limited conditions for food chain organisms, recent improvements have resulted in a significant recovery of the food chain organisms. Even though the dissolved oxygen levels in these releases are still (1970s) below the numerical stream standards, there are no significant adverse biological impacts associated with these releases.

The water quality characteristics of releases from most tributary impoundments in the Valley cause significant adverse impacts on fishery resources. However, there are no fishery resource data readily available for a direct assessment of the effect of the releases from Watauga, Hiwassee, Great Falls, Bear Creek, Little Bear Creek, Boone, Fontana, Nolichucky, Thorpe, Santeetlah, Cheoah, and Calderwood. The impacts associated with each project for which tailwater fisheries resource information was available are summarized in the following paragraphs.

South Holston--The South Holston tailwater is now managed as a trout fishery by the Tennessee Wildlife Resources Agency (TWRA). Its potential is limited by intermittent releases with low concentrations of dissolved oxygen. There is a low diversity of both fish and macroinvertebrates, but standing stocks are now high. Increased concentrations of dissolved oxygen in the releases would increase the potential for diversity of species. The establishment and maintenance of an adequate instantaneous minimum base flow would significantly increase biological production (fish and fish food organisms) and opportunity for use of the resource for recreational fishing. Although this tailwater fishery is now adversely affected by intermittent streamflows and low concentrations of dissolved oxygen, it does successfully sustain moderate fishing pressure and has a high potential for improvement.

Wilbur--The combination of relatively low discharge rates, absence of extreme oxygen deficits, and significant inflow from tributary streams causes the fauna of Wilbur tailwater to be similar to that of an unregulated stream. There is great diversity of fish and bottom fauna (especially in the lower reaches), and standing crops are fair. Establishment of an adequate instantaneous minimum base flow would significantly improve this fishery resource. The tailwater is now managed as a trout fishery by TWRA and sustains moderate levels of use for fishing.

Fort Patrick Henry--Although the diversity of fish and bottom fauna is low, the tailwater below Fort Patrick Henry Dam supports relatively high standing crops of fish and fish food organisms and is being managed as a trout fishery by TWRA. Minimum instantaneous flows and dissolved oxygen concentrations are not adequate for maximum biological production or fishing use. The low faunal diversity is probably related to the seasonal oxygen deficits and inadequate minimum instantaneous flows. Although the tailwater is only about three miles long, it has a high potential for improvement and increased levels of fishing use.

Cherokee--The fisheries resource of the upper 20 miles of the 50-mile-long Cherokee tailwater is very poor, primarily because of the adverse impact the Cherokee releases have on dissolved oxygen, temperature, and streamflow. The temperature regime resulting from Cherokee releases is unsatisfactory for either warm or cold water species of fish.

The lower half of the tailwater supports a good localized fishery for smallmouth bass and other warm water species. The diverse fish and bottom fauna communities in the lower portion of the tailwater, where some reaeration has occurred, where flows have been supplemented, and where temperatures have moderated, indicate the potential for improvement of this fishery resource. Because of its size and potential as an exceptional warm water stream, this tailwater should be given a high priority for further study.

Douglas--Like Cherokee, the Douglas tailwater is too warm for part of the year to support trout and too cold to favor the establishment of most warm water species. Because of the temperature regime, both fish and bottom fauna communities are of very limited diversity. Sport fishing is largely confined to late winter and early spring when sauger and crappie migrate from downstream areas. About 30 miles long, this tailwater has the potential to become a significant warm water stream fishery if the adverse impacts associated with seasonally low dissolved oxygen, unfavorable thermal regime, and inadequate minimum flows can be corrected. Because of the potential for improvement, this tailwater should be given a high priority for further study.

Norris--Although the 13-mile-long Norris tailwater is intensively managed as a high quality trout fishery by TWRA, the diversity and productivity of fish and bottom fauna communities and use for fishing could be greatly enhanced by correcting problems associated with seasonally low concentrations of dissolved oxygen and inadequate minimum flows. The existing thermal regime, except for warming during extended periods of low flow, is ideal for a trout fishery. Because of the potential of this tailwater to accommodate sustained, high quality, and heavy trout fishing pressure, it should be given a high priority for future studies.

Melton Hill--As below most main stream dams, there is a very limited reach of actual tailwater below Melton Hill Dam before it becomes the headwaters of Watts Bar Reservoir. Consequently, this fishery resource has limited significance except as a collection point for migrating species.

Chatuge--Although Chatuge is managed as a trout fishery by the State of North Carolina, the diversity of fish and bottom fauna communities is seriously limited in a 4-mile reach below the dam by seasonally low concentrations of dissolved oxygen. Inadequate minimum flows associated with intermittent reservoir releases limit productivity and fishing use, especially in the upper reaches of the tailwater. Improvement of these two limiting factors would allow this fishery to sustain significantly higher levels of use.

Nottely--Although the fish population of the Nottely tailwater has not been inventoried, the bottom fauna community is very limited both in terms of diversity and standing stock. Georgia Game and Fish personnel report very little fishing in this tailwater. In addition to having seasonally low concentrations of dissolved oxygen and inadequate flows, Nottely is chronically more turbid than other tailwaters. High turbidity probably accounts, at least in part, for the low standing stocks of bottom fauna. In its present condition, the fishery resource in this tailwater is of little value. The potential for the development of a significant fisheries resource in this tailwater reach is also limited by the occurrence of unfavorable habitat and substrates.

Apalachia--There are essentially two components of Apalachia tailwater: the "bypass" section from Apalachia Dam to Apalachia powerhouse and the Hiwassee River from Apalachia powerhouse to the confluence with the Ocoee River. The bypass section of the Hiwassee usually receives flow only from local tributary streams; consequently, its faunal communities are very similar to those of comparable unregulated streams. Flow is the principal limiting factor for the fishery resource in this approximately 8-mile reach of stream.

The Hiwassee River below the powerhouse supports diverse communities of fish and bottom fauna but has relatively low faunal standing crops. Although it is managed by the TWRA as a trout fishery, inadequate minimum flows limit the biological productivity of this stream reach and allow summer water temperatures in the stream to rise above levels required for a high value trout fishery. Because of the potential for this tailwater to sustain significantly higher fishing use, it should be given a high priority for further study.

The snail darter was transplanted from the Little Tennessee River to the section of the Hiwassee River below the Apalachia powerhouse, and reproducing population of snail darters is now supported in the lower portion of this reach. Power generation is presently scheduled to provide at least 2,400 ft^3/s for three hours each day or, alternatively, 1,400 ft^3/s for five hours each day to provide more suitable water levels in the lower portion of the tailwater, where most of the snail darters have become established.

Blue Ridge--Although the diversity of fish and bottom fauna is low in the upper tailwater section below Blue Ridge Reservoir, diversity is high in the section starting seven miles below the dam, suggesting a limited area of adverse impact attributable to discharges. Because of the relatively high ratio of tributary inflow to reservoir discharge volumes, fish and bottom fauna communities in all but the upper reaches of the tailwater

are very similar to those in the river above Blue Ridge Reservoir. The presence of some warm water fish species in the tailwater, coupled with apparently low returns from recent trout stocking, suggests that the temperature regime is unsatisfactory for either warm or cold water species.

Ocoee No. 3--Because all of the flow from Ocoee No. 3 Reservoir bypasses the stream channel and is routed to a downstream powerhouse, about seven miles of streambed from Ocoee No. 3 to the powerhouse is usually dry or at best contains scattered pools of water. These circumstances predictably preclude the presence of a fishery resource. Present water quality conditions in the Ocoee River further complicate this situation. In the past, point and nonpoint source discharges originating in the Copper Basin area have resulted in adverse water quality conditions that have precluded virtually all biological productivity in Ocoee No. 3 Reservoir, as well as in Ocoee No. 2 and Ocoee No. 1 Reservoirs. Although progress has recently been made to correct the point source discharges, there has been little progress in correcting the impacts of nonpoint source discharge. Thus, it will be some time in the future until water quality conditions improve sufficiently to allow the development of viable biological communities in these reservoirs. If these conditions were to improve, it is reasonable to assume that a significant fishery resource could be developed below Ocoee No. 3, if releases could be provided to maintain an adequate minimum base streamflow with appropriate temperature regimes in the presently dry stream channel.

Ocoee No. 2--As in the case of Ocoee No. 3, water from Ocoee No. 2 Reservoir is routed past about four miles of stream channel. There is inadequate flow in this section to allow the development of a fishery resource. The future status of a fishery resource in this reach is also subject to the same requirement for upstream improvements in water quality conditions as for Ocoee No. 3 Reservoir.

Ocoee No. 1--Historically, there has been very little fishing in Ocoee No. 1 tailwater because of poor water quality in the Ocoee River below Copperhill, Tennessee. Development of a fishery resource in Ocoee No. 1 tailwater will be predicated upon improvements in water quality similar to those required for Ocoee No. 3 Reservoir and upon reservoir operations at Ocoee No. 1 to provide adequate minimum flows and appropriate temperature regimes.

Normandy--The development of a cold water fishery in the tailwater reach of Normandy Reservoir was one of the planned purposes for this project. Consequently, provisions were incorporated in the design and operation schedule for the project to ensure that releases provide minimum instantaneous streamflows, an appropriate temperature regime, and high concentrations of dissolved oxygen. A viable cold water fishery is expected after initial lake aging is completed.

Nantahala--Because the natural stream channel is bypassed for 9.2 miles from Nantahala Dam to the powerhouse, the fishery resource of this section is restricted. Communities of fish and bottom fauna in the section below the powerhouse are very diverse and closely resemble those of similar unregulated streams. It is now managed as a trout fishery by

the State of North Carolina. The only significant improvement needed for the fishery resource is the establishment of an adequate minimum flow.

Chilhowee--Chilhowee tailwater supports relatively diverse, abundant communities of fish and fish food organisms similar to those found in the Hiwassee River below Apalachia powerhouse. The chief difference is that Chilhowee tailwater has higher faunal standing crops, presumably because of its established minimum flow of about 1,400 ft^3/s. Although fishing use could be increased considerably by scheduling periods of minimum flow during daylight hours and on weekends, conditions appear near optimal for a tailwater trout fishery.

Tims Ford--Standing stocks and diversity of fish and bottom fauna are low in the upper reaches of the Tims Ford tailwater, but they recover significantly about 20 miles below the dam. Limiting factors in the upper 20 miles of the tailwater include seasonally low concentrations of dissolved oxygen and inadequate minimum flows. The TWRA is successfully managing the tailwater as a trout fishery. Alleviation of low dissolved oxygen conditions and inadequate minimum flows would improve the diversity of fish and bottom fauna and also to increase standing stocks and fishery resource.

Water Supply

The principal adverse impacts on existing or future water supplies that are associated with reservoir releases are directly associated with water quality characteristics, streamflow, and resolubilized metals (iron and manganese). Other water quality factors, such as taste, odor, temperature, and turbidity and suspended solids, can also significantly impact water supplies, but in the Tennessee Valley, these are of secondary importance with respect to the quality of the reservoir releases and are usually of significance only on a case-by-case basis. Within the Valley, there are now no continuous, unresolved, adverse problems of water supply associated with reservoir releases. When adverse impacts have been identified, appropriate studies and mitigative actions have been undertaken to reduce these impacts. As new or expanded water supplies are developed, however, there is the potential for additional problems to arise. These conditions will have to be evaluated, and appropriate mitigative action will have to be implemented as the situations are identified.

Three TVA impoundments have, in the past, adversely impacted downstream water supplies. Releases from South Holston Reservoir have affected downstream water supplies with respect to both water quality and water quantity. The releases from Tims Ford have adversely impacted the quality of Fayetteville's water supply. In the past, normal releases from Fort Patrick Henry Dam were insufficient to meet requirements for industrial uses.

The mean concentrations of iron and manganese in releases from 24 impoundments exceed guideline criteria for a source of water supply; however, problems have been experienced in only two cases. In the other 22 cases,

the water supplies are either far enough downstream for the iron and manganese to be oxidized to an insoluble form, thus eliminating the problem, or any operational difficulties that may have been encountered have not been publicized. Only three dams (Fort Patrick Henry, South Holston, and Normandy) are now operated to provide special releases to meet downstream demands for water supply.

Iron and manganese in the releases from South Holston Dam could potentially affect the water supply for both Bristol, Tennessee, and the Bristol Bluff City Utility District. These systems have water intakes located about 1.5 miles and 14 miles, respectively, below the dam. Under normal operating conditions, iron and manganese concentrations in the releases from South Holston Dam do not interfere with water treatment at these plants; however, when circumstances such as emergency flood control or maintenance work require the use of the low-level sluice, high concentrations of iron and manganese from the lower depths of the reservoir could be a problem. Experience has shown that concentrations of iron and manganese in sluice releases decline rapidly after the sluice is opened, and in the past, severe problems have been avoided by discontinuing operation of water treatment plants until iron and manganese concentrations in the releases subside to an acceptable level (see the discussion of manganese in chapter III for more details of the mitigative actions that have been implemented).

Periodically, high water usage at Bristol necessitates the off-peak operation of South Holston Dam to provide water to meet the demand. When these situations occur, the Bristol water plant personnel notify TVA and request the release of additional water from South Holston Dam.

During the fall of 1972, the city of Fayetteville, Tennessee, experienced difficulties with manganese in the raw water supply taken from the Elk River at mile 93.9. The problem resulted from high rates of release from Tims Ford Dam of water containing manganese. Under normal conditions, the manganese would be expected to be oxidized in the 40-mile reach between the water intake and the dam; however, the unusually high rates of release from the dam decreased reaeration and decreased time of passage. The manganese failed to become oxidized and required additional treatment at the city of Fayetteville water treatment plant. The city is not now experiencing problems from iron and manganese in releases from Tims Ford Dam. Although the projected water demand at Fayetteville is only 11 ft^3/s, Tims Ford Dam is operated to provide the historic minimum average daily flow of 106 ft^3/s at Fayetteville.

Under normal operating conditions, mean daily releases of 400 ft^3/s from Fort Patrick Henry Dam would not be sufficient to meet water supply needs in the Kingsport area. The Tennessee Eastman Company has a contractual agreement with TVA to maintain a mean daily flow of 750 ft^3/s to meet present water supply requirements. The company requested additional releases, but TVA determined that additional water was unavailable within the operating constraints of the upstream reservoirs.

Algae released from the upper level of Normandy Reservoir have caused taste and odor problems and difficulties in operations at the treatment plants, respectively, at Shelbyville, Lewisburg, and Columbia during the

spring of 1977 and 1978. Special studies are in progress to develop reservoir operating criteria to reduce and, if possible, to prevent future problems related to algae.

Assimilative Capacity

Any impoundment located above a waste discharge could, because of its ability to restrict the quantity of flow available, reduce the capacity of the downstream reach to assimilate organic wastes. Thirteen TVA dams (Chickamauga, Guntersville, Kentucky, Watauga, Wilbur, Fort Patrick Henry, Cherokee, Douglas, Norris, Apalachia, Ocoee No. 1, Normandy, and Bear Creek) have been identified as having potential adverse impacts on assimilative capacity if adequate flows are not maintained. Two of these impoundments (Normandy and Bear Creek) now provide guaranteed instantaneous minimum flows to increase stream assimilative capacity.

Eighteen dams release waters with dissolved oxygen concentrations significantly below the established water quality criteria. These low concentrations in turn reduce the available assimilative capacity of the reaches downstream. Treated wastewater discharges below five dams (Chickamauga, Fort Patrick Henry, Cherokee, Douglas, and Norris) are adversely affected.

The concentrations of dissolved oxygen in releases from Chickamauga Dam affect the assimilative capacity of Nickajack Reservoir at Chattanooga. Releases from Chickamauga Dam do not have a severe problem with low dissolved oxygen, but during the summer months the dissolved oxygen concentration barely meets the 5.0 mg/l minimum requirement. Because little reaeration occurs between the dam and the principal discharge to Nickajack Reservoir (the Chattanooga Moccasin Bend sewage plant), the amount of oxygen-demanding material that can be discharged by the sewage plant is impacted. TVA provides a minimum average daily flow of 6,000 ft^3/s from Chickamauga Dam to minimize the impact of discharges of treated waste on water quality in Nickajack Reservoir. With this flow, Chattanooga is not required to provide treatment beyond best practicable technology to protect stream uses.

Several large discharges of treated waste are made to Wheeler Reservoir at Decatur and Huntsville, Alabama. When releases from Guntersville Dam are low, the assimilative capacity of the river is reduced in the vicinity of these discharges. This reduction in assimilative capacity could potentially result in low concentrations of dissolved oxygen in the lower reach of Wheeler Reservoir or in the requirement that individual discharges provide additional treatment beyond best practicable.

Seven large industries discharge treated waste to a 3-mile reach immediately below Kentucky Dam. If releases from Kentucky Dam were discontinued for an extended period, discharges from the industrial waste sources could accumulate and create a water quality problem.

A large industrial plant and the city of Elizabethton discharge treated waste to the Watauga River below Wilbur Dam. Watauga and Wilbur Dams are operated to maintain the historical minimum flow of 112 ft^3/s at

Elizabethton. Studies in 1977 showed that the present flow is sufficient for assimilation of present wasteloads but that any reduction in flow would result in additional treatment costs.

The reach of South Fork Holston River below Fort Patrick Henry Dam and the upper reach of the Holston River (miles 141 to 125) receive waste from 13 industries and the city of Kingsport. The quantity of waste discharged to these reaches exceeds the natural assimilative capacity of the stream, and several dischargers must provide treatment beyond best practicable. The reduced concentrations of dissolved oxygen in releases from Fort Patrick Henry Dam contribute to the problems of low assimilative capacity in these reaches. The principal discharger, Tennessee Eastman Company, contracts with TVA to provide a minimum daily release of 750 ft^3/s for water supply purposes; this flow is ultimately available in the stream for assimilative capacity. Any reduction in this flow would lower stream assimilative capacity, and dischargers would be required to provide additional waste treatment. Lack of sufficient streamflow is one limiting factor for future growth and development in the Kingsport area.

Low concentrations of dissolved oxygen in the releases from Cherokee and Douglas Dams persist all the way through Fort Loudoun Reservoir. These low levels of dissolved oxygen reduce the amount of oxygen-demanding waste that can be discharged in the Knoxville area. Cherokee and Douglas Dams are operated to provide a minimum daily average flow of 2,000 ft^3/s to improve water quality at Knoxville. With this available flow, the city of Knoxville, the principal discharger to Fort Loudoun Reservoir, is not now required to provide treatment beyond that considered best practicable (secondary treatment). However, existing conditions of low dissolved oxygen could be a factor in limiting future growth and development at Knoxville and in the area around Fort Loudoun Reservoir, because additional dischargers would have to provide treatment beyond that normally required. To preclude possible restrictions of future development in this area, studies should be directed toward possibilities for improving the concentrations of dissolved oxygen in releases from both Cherokee and Douglas Reservoirs.

Low dissolved oxygen and low quantity releases from Norris Dam both affect the assimilative capacity of the Clinch River in the reach between the dam and Oak Ridge. Oak Ridge considered relocating its sewage discharge from a small stream (East Fork Poplar Creek) to Melton Hill Reservoir; however, because of the stringent treatment requirements resulting from the low dissolved oxygen levels and streamflow releases at Norris Dam, the discharge to Melton Hill Lake was not economical. Treatment beyond best practicable may be required of one or more existing dischargers near Clinton because of the low assimilative capacity of the reach below Norris Dam. Future development along the reach that would require additional assimilative capacity may also be hampered because treatment requirements will probably be stringent. Future studies should evaluate increasing minimum flows and improving dissolved oxygen levels in releases from Norris Dam.

A potential water quality problem exists in the Hiwassee River near Calhoun, Tennessee. If TVA were not operating Apalachia and Ocoee No. 1 Dams to provide a mean combined release of 600 ft^3/s, Bowaters Southern Paper Company and the city of Cleveland would be required to provide additional treatment beyond best practicable.

Normandy Dam is operated to provide a minimum instantaneous flow of 155 ft^3/s at Shelbyville, Tennessee. This flow is triple the normal minimum flow and increases the assimilative capacity of the Duck River sufficiently that the city can achieve good water quality below its sewage discharge by providing only secondary (best practicable) treatment. Additionally, increased streamflow for both water supply and assimilative capacity occur at Columbia, Tennessee, where the minimum flow provided by releases from Normandy Dam is about five times greater than the natural minimum flow.

Bear Creek Dam is operated to provide a minimum instantaneous release of 11 ft^3/s. Without this flow, Red Bay, located about 19 miles below the dam, would be required to provide treatment beyond best practicable technology.

Because of both the existing problems and the potential problem of restricting future development, the releases from Fort Patrick Henry, Cherokee, Douglas, and Norris should be given priority for future studies on improvement of assimilative capacity.

CHAPTER V

GENERIC OPTIONS FOR REDUCING IMPACTS

This section identifies generic methods for reducing or eliminating adverse impacts associated with releases from impoundments. This discussion reflects the state of the art of the available technologies. Further development work may be required before some of these methods can actually be implemented. The descriptions of the technologies are divided into two broad categories, physical changes and operational changes. Physical changes include technologies that require specific processes or equipment to be installed to correct a problem and also any structural modifications to existing projects. Operational changes include modifications of the present operational regimes of individual projects. Possible improvements at a specific project could involve both physical and operational changes. Because of the interrelationship between the available technologies and the present purposes of the projects, the specific technologies must be evaluated and tailored directly to individual projects on a case-by-case basis. This evaluation must consider, among other things, the impact that needs to be corrected, the cost of implementing corrective actions, the present purposes of the project and uses both upstream and downstream, as well as the impact of any corrective action taken at projects located farther upstream.

Any technology being considered for implementation must be tailored to the specific projects, because there is no single technology that can be applied under all situations. Furthermore, the application of one technology at a specific project may reduce or correct one aspect of the adverse impact but compound another adverse impact. For example, reaeration of releases with atmospheric air to increase dissolved oxygen may reduce the problem of low concentrations of dissolved oxygen at the expense of potentially creating a problem with nitrogen supersaturation. Because of the time-consuming and complex studies that would be required, no attempt has been made in this report to evaluate or propose specific actions at individual projects.

Physical Changes

Physical changes may be broadly classified as (1) control of water quality within the reservoir, (2) selective withdrawal of reservoir water with acceptable quality, (3) aeration of reservoir releases, or (4) habitat modification.

Control of Water Quality Within the Reservoir

Methods for controlling dissolved oxygen and other water quality characteristics within a reservoir include destratification of the reservoir and aeration or oxygenation of the hypolimnion. A reservoir can be destratified by pumping the cold, dense water from the bottom of the

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reservoir to the surface to expose it to the atmosphere. This exposure raises the concentration of dissolved oxygen and decreases concentrations of iron, manganese, and other undesirable constituents that may have dissolved in the hypolimnion; however, pumping water to the surface also raises its temperature and usually results in thermal destratification of the reservoir. Pumping may be accomplished by low-head, high-volume mechanical pumps or diffused air pumping. On reservoirs large enough to support hydropower production, destratification has been used only in a zone immediately upstream from the dam, not in the entire reservoir.

Destratification is less expensive than other methods of improving concentrations of dissolved oxygen and it also improves other water quality characteristics by reducing levels of taste, odor, color, corrosion, phosphates, dissolved iron, and possibly dissolved manganese. Because destratification also increases the temperature of the water released through turbines, it may be the best method for use at projects where, in addition to increasing levels of dissolved oxygen, there is also a need to increase the temperature of releases to improve conditions for the management of a warm water fishery in the tailwater reach.

On the other hand, because destratification does increase the temperature of turbine releases, its main disadvantage is that it adversely affects downstream water uses for management of a cold water fishery and water supply. Full-scale projects by the Corps of Engineers and EPA have shown that another disadvantage of this method is that levels of dissolved oxygen in the releases cannot be regulated very readily and that a supplemental method may be required to ensure that adequate levels are maintained.

To preserve the cold water releases and yet improve water quality conditions in the reservoir, aeration of the hypolimnion may be applicable. Europeans have demonstrated hypolimnion aeration with air in a small water supply reservoir. This system employed diffused air at the bottom of a long tube that extended from about 10 feet above the bottom of the reservoir to the surface. Multiple outlets from the tube immediately below the thermocline allowed the water that was aerated and lifted by the air bubbles to be discharged back into the hypolimnion. Several American investigators have demonstrated or conceptually designed other techniques for aerating the hypolimnion with air. These methods do not now appear economical for a large reservoir used for power production because the hypolimnion usually contains such a large volume of water that is continually released through the turbines. Another possible problem with the device developed by the Europeans is that no provision is made for large variations in the reservoir pool level or for variations in the depth of the thermocline. Of even greater importance for reservoirs used for power generation is the probability of causing dissolved nitrogen supersaturation conditions downstream from the turbine discharge. However, the substitution of pure oxygen gas for air would solve this problem. Researchers at Rutgers University investigated a hypolimnion oxygenation system during the summer of 1973, but they achieved such low oxygen absorption efficiencies that they considered the system uneconomical.

The Corps of Engineers is investigating oxygenating the hypolimnion by diffusing oxygen gas through fine-pore diffusers, placed about one-mile upstream from the dam. (This system is a modification of the method developed by TVA, which will be discussed later.) Because essentially all of the oxygen is absorbed by the surrounding water before the bubble reaches the thermocline, the reservoir is not thermally destratified by this process.

In general, methods that control dissolved oxygen within the reservoir result in better overall water quality than those that increase levels in the releases only. However, methods of control within the reservoir may not ensure a fixed concentration of dissolved oxygen downstream from the dam and may, therefore, require supplemental aeration of the reservoir releases.

Selective Withdrawal of Reservoir Water With Acceptable Quality

Water that contains acceptable levels of dissolved oxygen can be selectively withdrawn from the reservoir by the use of submerged weirs upstream from the power intakes or by the use of an intake that can withdraw water from several different levels.

Submerged weirs or "dams" have been used at a number of installations to allow only the well-oxygenated surface water to pass through power units. All submerged weirs now in use are permanent structures located upstream from the base of a dam. These structures are not well suited for most multipurpose reservoirs because their pool levels fluctuate considerably. Because the crest of the weir must be relatively low to allow water to pass over it during all times of the year, water from the lower protion of the reservoir, which is deficient in dissolved oxygen, can pass over the weir when the pool is at normal operating levels during the summer. A possible solution to this problem might be a flexible curtain barrier, the crest of which would fluctuate with pool levels.

Construction of new multilevel intake structures for existing dams may be too expensive in comparison to the improvements that might be achieved. Consideration of multilevel outlets for new dams requires the determination of (1) whether a water quality problem would develop, (2) how reservoir water quality would be affected by use of such outlets, and (3) whether possible hydraulic problems would result around the outlet structure.

All schemes of selective withdrawal preclude taking advantage of the benefits that can be provided by use of the colder water from the hypolimnion. Moreover, if the volume of the epilimnion is relatively small in relation to the discharge through the turbines, selective withdrawal may not even be practical.

Aeration of Reservoir Releases

The only water quality characteristic immediately downstream from the dam that can be affected by the various methods for directly improving water quality in reservoir releases is the concentration of dissolved oxygen. These methods include turbine venting, U-tube aeration, weir aeration, mechanical surface aeration, diffused air aeration in the tailrace, and oxygen injection upstream or downstream from the dam.

Turbine venting is perhaps initially the most inexpensive method. Many hydro plants have built-in air vents to reduce vibration and cavitation. Additional vents can usually be added at an initial cost lower than the costs for other methods of aeration. Turbine venting has been used at a number of dams to increase concentrations of dissolved oxygen, but the aeration efficiencies reported are extremely variable. Alabama Power Company is investigating a modified turbine venting technique that is achieving significant aeration with minimal loss of power production efficiency. At present, design criteria are not available for determining the number and size of vents required to aerate turbine releases to a specified concentration of dissolved oxygen, and power losses caused by turbine venting cannot be predicted but must be determined after the vents have been installed. A potential disadvantage of turbine venting is that extensive use could appreciably reduce the capacity of a power generating system for meeting peak demands. Other disadvantages are that turbine venting usually is not practical for large increases (more than 1 to 2 mg/l), and could result in excessive nitrogen supersaturation downstream from the dam. TVA has requested funds through the Regional Water Quality Management Program to determine the engineering feasibility and biological effects of turbine venting at Norris Dam from 1980 to 1981.

The U-tube aeration system involves the diffusion of compressed air into the water just beneath the surface and just ahead of a baffle that traverses an excavated section of the stream. The mixture of air and water flows under the baffle, up the excavated section, and then downstream. This introduction of air at low pressures just below the surface of the water and the increased time that the air and water are in contact as a result of the "U-tube" pattern that develops significantly increases oxygen transfer. Unfortunately, the conditions that permit efficient oxygen transfer also cause nitrogen supersaturation, which may be an adverse condition for fish for saturation levels greater than 110 to 115 percent. Although studies have shown that the maximum nitrogen supersaturation that can result from a U-tube aerator with a 10-foot depth is 106 percent, it is not feasible to use less than about a 15-foot depth U-tube aerator below most hydro power plants. U-tube aeration with oxygen substituted for air probably would not be economical because of the combined high capital and operating costs.

An overflow weir, used downstream from a dam, aerates water by entraining air through the surface of the free-falling nappe and at the point where the nappe splashes into the downstream pool. The height of fall, the depth of the receiving pool, the water quality, the degree of atmospheric nappe venting, and the configuration of the splash area all affect the efficiency of weir aeration.

Although various investigators have conducted a considerable amount of research, their results vary significantly. Additional research is needed before a full-scale weir system can be designed for turbine discharges. One factor that deserves particular attention is the effect of streamflow per unit length of weir.

The main disadvantages of weir aeration are high capital cost and reduced efficiency of power production. An important consideration in designing a weir for aerating turbine discharges is providing some means of adjusting the crest of the weir to (1) produce various increases in concentration for various levels of initial dissolved oxygen, turbine discharge, and water temperature and (2) eliminate the effect of the weir on power production (i.e., increased tailwater elevation when an increase in dissolved oxygen is not required). The flapgate weirs used on the Mississippi River could be used in such a manner.

One advantage of a weir is that it can serve as a reregulating dam and provide a continuous minimum level of streamflow downstream--perhaps as much as 50 to 200 ft^3/sec for a 24-hour period depending on the size of the pool between the weir and the upstream dam. Higher reregulated streamflows are possible for shorter periods of time if the pool behind the weir can be replenished more frequently.

Mechanical surface aerators have been used for aerating polluted streams that have a residual biochemical oxygen demand; however, this method is not expected to be as economical as other methods for aerating reservoir releases because extremely large amounts of oxygen must be added to the stream within a short distance. Because mechanical surface aerators are limited to about 75 to 100 horsepower, an extremely large number of aerators is required. For example, in the case of Fort Patrick Henry Dam, a total of 6700 horsepower, or about 90 aerators, would be necessary to increase the dissolved oxygen level from 0.5 to 5 mg/l at a streamflow of 8800 ft^3/sec.

Diffused air aeration was demonstrated in tailwaters but was found to be uneconomical for a submergence depth of 10 feet. However, this method may be economical for greater submergence depths (perhaps 15 feet or more).

The main disadvantages of diffused air aeration as compared to oxygen injection are (1) a high power requirement for air compressors (about 5 percent of the power generating capacity of the plant), (2) a lower capability for adding dissolved oxygen at concentrations greater than about 5 mg/l, and (3) a higher initial investment cost. Estimates from data on diffused air aeration for sewage treatment plants indicate that an installation at Fort Patrick Henry Dam for aeration to 5 mg/l would require at least 3000 horsepower to drive the needed air compressors and 15,000 fine-pore diffusers such as those used in sewage treatment plants. The diffusers in the tailrace would cover an area about 100 feet wide and over 250 feet long. Nitrogen supersaturation may also occur.

Oxygen can be injected into turbine releases by penstock injection, diffuser injection immediately upstream from the turbine intakes, tailwater diffusion, the side stream supersaturation system, or the downflow bubble contact system.

Penstock injection involves injecting oxygen gas through small orifices in tubing attached to the trash racks. The main advantage of this method is the simplicity of installation. The main disadvantages are possible corrosion of the turbine system, a possible decrease in the efficiency of power production because of interference by gas bubbles, the possibility that all the oxygen would not be absorbed, and in longer penstocks, the possibility of gas accumulating at the top of the penstocks.

Injecting oxygen through small-pore diffusers upstream from the turbine intakes should eliminate the main disadvantages of penstock injection. However, the small pores necessary to produce bubbles small enough for high absorption efficiency creates a problem of plugging or clogging of the diffusers. Such diffusers are usually made of ceramic material with pore sizes of less than 20 μm. Corrosion still may occur in the turbine discharge system. Diffuser injection downstream from the dam would not cause corrosion problems, but would require a considerably larger diffuser system to inject the same amount of gas because of the reduced depth for absorption in the shallower water.

In the side stream supersaturation system, a small portion of the turbine discharges is withdrawn and subjected to a high pressure. Pure oxygen is injected into the high-pressure line, and then this oxygen-rich side stream is mixed into the flow of the main stream. Adequately high pressures are sometimes available from the reservoir without additional pumping. Because the water in the side stream must bypass the turbines, however, it is not available for power production. The bypass flow can amount to about 1 to 5 percent of the total streamflow. The main advantages of this system over oxygenation schemes discussed previously are that it cannot cause corrosion of the turbines and that there is no problem of diffusers becoming plugged.

The downflow bubble contact system that has been proposed for injecting oxygen upstream from the turbine intakes is similar to the side stream supersaturation system in that a small portion of the total flow is highly oxygenated and then mixed with the remaining turbine discharge. A part of the water is pumped downward through a conical or pyramidal device into which oxygen gas is injected. The velocity of the downflowing water is great enough to prevent bubbles of oxygen gas from rising through the top of the device; they are maintained in suspension until they dissolve. There are no diffusers to become clogged, and the low-head, high-volume pump requires relatively little power. Because oxygenated water passes through the turbines, power production capacity is not reduced, but corrosion of the turbine system could be increased. This technique probably will be feasible only in deep reservoirs where a relatively small portion of the turbine releases must be passed through the bubble contact chamber.

A possible problem with all methods that involve oxygenating turbine releases is that oxygen suppliers may not be able to provide the necessary amounts of liquid oxygen required during long periods (several days) of peak power operations. A possible solution to this problem may be to use onsite oxygen generation to oxygenate continuously a large volume of the hypolimnion upstream from the dam to reduce (or possibly eliminate) the peak demands for liquid oxygen during turbine discharge oxygenation.

Development of the Oxygen Diffuser Method

In 1972, the Division of Environmental Planning began developing the method of oxygen injection using small-pore diffusers upstream from Fort Patrick Henry Dam, working in conjunction with the Divison of Water Management. In the course of the project, numerous commercially available diffuser materials were evaluated for clogging, oxygen transfer efficiency, and potential miscellaneous operational problems. These evaluations were carried out through a combination of laboratory studies at Norris and field studies at Fort Patrick Henry. Clogging was found to occur in most diffusers in a period equivalent to about three years operating time. However, it is anticipated this problem can be minimized by periodic cleaning, either in place in the reservoir or by removing the diffusers about once each year. Laboratory studies showed high transfer efficiencies for several diffusers, and pilot-scale studies of two of these diffusers verified that high efficiencies could be achieved. The project was concluded in 1976 with the completion of a preliminary design and cost determination for a full-scale system. Depending on various considerations for dissolved oxygen objectives and design configurations, the system was estimated (in 1972) to have an annual cost of about $350,000, including capital amortization and operating costs, to maintain a dissolved oxygen concentration of 6 mg/l for 99.8 percent of the time. This cost would be reduced to $200,000 if a concentration of 5 mg/l were maintained only 99 percent of the time.

Habitat Modification

A tailwater reach otherwise suitable for a fishery but limited by inadequate minimum flow and low concentrations of dissolved oxygen might be improved by physical changes to the environment. Multiple rock structures, small dams, and wing walls could be constructed along the reach to form a series of small pools separated by reaches of fast, turbulent water. Providing such pools are small enough to be flushed entirely with fresh water during periods of full turbine discharge, these kinds of habitat modification could possibly solve part of the problem of minimum flow by increasing the extent of continuously wet substrate and the extent of reaches with deeper water. Such modifications might also solve part of the problem of low concentrations of dissolved oxygen by increasing the amount of turbulence and, therefore, aeration in the tailwater reach. These kinds of structures would not, however, solve the problem of low concentrations of dissolved oxygen during periods of maximum discharge through the turbine. The stability of such structures during floods might also be a problem. Among the possible adverse effects of these habitat modifications might be increased water temperatures in the still pools as a result of solar heating, a reduction in the extent of river habitat, and conflicts with development of recreational floating.

The Division of Forestry, Fisheries, and Wildlife Development has requested funding during fiscal year 1980 for a series of tests of structures to modify the habitat in the Clinch River below Norris Dam and to evaluate their effectiveness under different turbine discharge conditions. These studies would be carried out concurrently with studies evaluating turbine venting at Norris under the Regional Water Quality Management Program.

Summary

The main conclusions are that most of the various aeration methods have some merit and that no one method would be best for all dams. Among the important factors to be considered in each case are the desired level of dissolved oxygen, other water quality requirements, physical characteristics of the dam and turbine system, the required increase in dissolved oxygen, costs, and other stream uses to be protected or enhanced. Table 11 summarizes the applicability of the methods discussed above under various design considerations. The average annual oxygen requirement is also important for costs analyses of various methods for a particular dam. This factor is used to determine the feasibility of a system with a high initial and low operational cost versus a system with a low initial and high operational cost. For essentially all the methods investigated, more research is needed to develop adequate, detailed design criteria. To date, there have been no successfully demonstrated full-scale systems that have achieved consistently a dissolved oxygen concentration of 5 or 6 mg/l. In addition, the various methods need to be demonstrated to determine operational problems that inevitably arise in the process of developing new technologies.

Operational Changes

Some of the water quality impacts associated with reservoir releases can be partially solved by changes in the present operational procedures. It is very doubtful, however, that changes in the present operational procedures alone can eliminate the water quality impacts at all projects. A combination of both physical and operational changes may be necessary to improve the releases from some reservoirs.

Except for a few isolated cases, the reservoir system of multipurpose dams is not now operated for the specific purpose of achieving water quality objectives for the development and protection of downstream water uses. It should be noted that if the achievement of certain water quality and water use objectives through operational procedures is adopted as an additional purpose for the system, conflicts of interest will occur and compromises will be required. In other words, the primary operational purposes of flood control, power generation, and navigation would suffer. These losses can be estimated for each project and should be weighed against the benefits of protecting or enhancing stream uses.

The following operational schemes are discussed relative to their effectiveness in solving water quality problems with respect to the practicability, difficulties, drawbacks, and costs of each scheme.

Maintaining a Small, Constant, Minimum Discharge--Requirements for maintaining a small, constant, minimum flow will vary from project to project depending on downstream uses to be protected or enhanced. This type of operational change is generally applicable to dams from which zero discharge occurs periodically under the present mode of operation.

Among the advantages of this operational change are that it helps avoid some of the more rapid temperature fluctuations, while reducing the impact on dissolved oxygen concentration through natural reaeration in the tailrace, and that it provides a continuously wet substrate that provides a better fishery habitat and increases opportunities for river recreation.

This method does, however, involve a loss of flexibility in peak-power operation and a decrease in turbine efficiency. Discharges too small to allow operation of the existing turbines may have to be sluiced, leading to a complete loss of the energy potential of this water. In such cases, installation of a smaller turbine is an option that should be evaluated. In addition, reservoir levels may be affected, adding to the complexity of river management and flood control.

Limiting Discharge to a Certain Maximum Flow--Limiting discharge to a certain maximum flow reduces impacts on dissolved oxygen during the period of low concentrations in the discharges through natural reaeration in the tailrace. This method involves a loss of flexibility in peak-power generation and may place unacceptable constraints on flood control operations.

Altering the Rule Curves for Reservoir Operations--It would perhaps be possible after careful research to develop new "rule curves" for reservoir operations that would, to some extent, prevent a water quality problem before it develops. No detailed advantages or disadvantages of this method are yet well known. It can be expected that such major operating changes to enhance water quality would severely affect and limit the flexibility of the reservoir system regarding power and flood control as used today.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

Releases from Tennessee Valley reservoirs were evaluated with respect to their adverse impacts on water quality and related characteristics and on various uses of the water downstream. The water quality characteristics examined were temperature, dissolved oxygen, resolubilization of metals, streamflow, turbidity and suspended solids, and gaseous supersaturation. The downstream water uses examined were recreation, fisheries and other aquatic life, water supply, and assimilative capacity. Evaluations were based on available data on water quality and reservoir operations from 1970 through 1977 in conjunction with biological and engineering judgements of the significance of the impacts.

The most significant impacts of reservoir releases are associated with low concentrations of dissolved oxygen, short-term variations in temperature, and inadequate streamflows in the reaches below the dams. The adverse impacts of releases from individual reservoirs were categorized as having no impacts, potential impacts, or existing impacts. These categories were used to identify priorities for additional studies to evaluate possible mitigative actions.

In general, releases from main stream reservoirs have few adverse impacts on water quality or water uses. However, releases from many tributary storage reservoirs do significantly impact dissolved oxygen concentrations, temperatures, and streamflows and therefore, downstream water quality and uses.

Water Quality Impacts

Temperature

Releases from Cherokee, Douglas, Melton Hill, Blue Ridge, Ocoee No. 3, Ocoee No. 2, Ocoee No. 1, and Great Falls Dams have existing long-term impacts on temperature. The temperatures of these releases during the spring, summer, and early fall are marginal for the development of either a cold water or warm water fishery (too warm for cold water species and too cold for warm water species). The only option for improving long-term temperature conditions to favor viable fishery resources downstream from these dams would be to seek methods for increasing temperatures in summer and early fall to provide conditions more favorable for warm water species. For the Ocoee projects, however, there are overriding water quality conditions associated with upstream point and nonpoint source discharges from the Copper Basin area that now preclude the development of any viable fishery, regardless of long-term water temperatures.

Short-term (daily) temperature impacts are associated with the releases from 15 of the tributary projects (including three Alcoa projects) as a result of intermittent operation of the hydro units for peaking purposes, which causes a cyclic gradual warming and sudden cooling of the water in the tailwater reach during the summer and early fall. Establishment of an instantaneous minimum release from each of these projects is the principle option for reducing this adverse temperature impact. In some specific reaches, however, the use of habitat modification is another available option.

Dissolved Oxygen

Releases from 18 reservoirs (including two Alcoa projects) result in concentrations of dissolved oxygen that significantly deviate from numerical criteria. Releases from eight of these storage reservoirs (South Holston, Cherokee, Douglas, Fontana, Norris, Chatuge, Nottely, and Tims Ford) cause severe problems (concentrations of less than 1 mg/l). These eight reservoirs should be classified in the "priority" category for any future studies of options for mitigating dissolved oxygen problems. The specific option that might be best for any specific project would vary depending upon the other water quality characteristics and water uses to be protected. Releases from six reservoirs (Fort Loudoun, Watts Bar, Wilbur, Fort Patrick Henry, Apalachia, and Cheoah) are considered to be secondary problems, because low concentrations of dissolved oxygen in the inflows to these reservoirs contribute extensively to the low concentrations in their releases. Lesser dissolved oxygen problems are associated with the releases from Watauga, Boone, Blue Ridge, and Santeetlah.

Streamflow

Because streamflow needs depend directly upon both the water quality and water uses to be achieved or protected, no existing problems were identified separately for this water quality related characteristic. Any problems related to streamflow were identified with the specific water quality characteristic (short-term temperature, dissolved oxygen, iron, manganese, turbidity and suspended solids, and gaseous supersaturation) or water use.

Resolubilization of Metals

Mean concentrations of total iron in the releases from 26 reservoirs exceed the EPA guidelines. Although there are no known long-term problems associated with the releases from these reservoirs, the releases from eight of these reservoirs (Douglas, Chatuge, Nottely, Ocoee No. 3, Ocoee No. 2, Bear Creek, Normandy, and Santeetlah) should be considered as potential problems.

Mean concentrations of total manganese in the releases from 27 reservoirs exceed the EPA guidelines. Although there are no known long-term problems associated with the releases from these reservoirs, the releases

from 11 of these reservoirs (Cherokee, Douglas, Chatuge, Nottely, Ocoee No. 3, Ocoee No. 2, Ocoee No. 1, Great Falls, Bear Creek, Little Bear Creek, and Normandy) should be considered as potential problems.

High concentrations of iron in the releases from South Holston and high concentrations of manganese in the releases from South Holston and Tims Ford do cause existing problems. The problem at South Holston is associated only with flood control or maintenance operations that require sluicing water from the bottom of the reservoir. Mitigative measures have been taken to reduce this adverse impact; these measures can continue to be used and should prevent any significant adverse impact from future operations. The problem at Tims Ford is associated with both initial lake aging and reservoir operations. The present limitation on reservoir operations in conjunction with completion of initial lake aging should mitigate this problem.

Turbidity and Suspended Solids

Releases from Fort Patrick Henry, Ocoee No. 3, and Tims Ford cause problems with respect to turbidity and suspended solids. The problem at Fort Patrick Henry is unique. Hydraulic drag during peak generation in the summer and early fall uproots aquatic plants from the Holston River bottom. The disturbance of sediments and the subsequent washing of materials from the plant roots increases turbidity and suspended solids. This problem might be corrected either by limiting generation or by physically controlling the weed growths. Both options have significant adverse impacts, the evaluation of which is beyond the scope of this study. The problem at Ocoee No. 3 occurs when water is sluiced from the bottom of the reservoir to prevent accumulations of silt from damaging the hydro structure or closing the intake. There is now no alternative to this sluicing if operation of Ocoee No. 3 for power generation is to be continued. High rates of turbine releases at Tims Ford previously caused downstream flooding and erosion of river banks. Restrictions on releases from Tims Ford have mitigated this problem.

Gaseous Supersaturation

No significant problems of gaseous supersaturation are known to be associated with the releases from the reservoirs evaluated in this study. (This conclusion is substantiated by the results of investigations of fish kills and other fishery studies. No evidence has ever been encountered of gas bubble disease, which is caused by prolonged exposure of aquatic organisms, primarily fish, to supersaturated concentrations of total dissolved gases.) However, there is the potential for elevated concentrations of total dissolved gases in the spillway releases from the mainstream reservoirs.

Water Use Impacts

The adverse impacts of releases from individual projects were also evaluated and categorized for each of the downstream uses. In addition to the potential or existing impacts for each use, the specific water quality related characteristics of the release that contribute to the impact were also identified. When more than one contributing water quality characteristic was identified, correction would be required for each characteristic for successful mitigation of conditions for the specific use.

Recreation

Releases from 18 reservoirs cause problems with respect to recreational floating. The principal cause of these problems is lack of dependable streamflow high enough for recreational floating during the most desirable hours (10 a.m. to 6 p.m.) of the prime recreation season (May through September). Lack of such flows limits both use by individuals and development of commercial floating recreation. Although reservoir releases have been provided at Apalachia, Ocoee No. 2, Nantahala, Tims Ford, and Chilhowee to increase floating opportunities, such flows are not reliable enough to allow full development of commercial and public recreation. The only option for enhancing floating recreation is to adjust reservoir operations to provide the levels and scheduled dependability of streamflow needed.

Nantahala, Apalachia, and Ocoee No. 2 tailwaters are now receiving national interest as white water streams and should be given priority for future studies in relation to improving recreational opportunities.

Releases from 12 reservoirs adversely impact recreational fishing, primarily because streamflow is either above or below optimum during the prime fishing hours of the day (early morning and late evening). Conditions could be improved by establishing an adequate instantaneous minimum flow (to enhance production of fish and fish food) and scheduling releases to allow adequate periods for wading, bank, and float fishing.

Fish and Other Aquatic Life

Releases from 14 reservoirs impact the fisheries and aquatic life resources of tailwater reaches. In each case, the problem is caused by intermittent releases associated with peaking operations and by short-term changes in temperature. Establishing and maintaining minimum instantaneous releases from the individual projects would solve the problem of cyclic wetting and drying of the streambed, eliminate the cyclic daily temperature variations, and provide flows suitable for recreational fishing. Streamflow modifications alone would enhance the fisheries resource of the bypassed sections of the Nantahala River and of the Hiwassee River downstream from Apalachia Dam. The lower reach of the Apalachia tailwater is also critical, because it is the reach in which the snail darter has become established.

In addition to streamflow, existing low concentrations of dissolved oxygen in the releases from nine reservoirs (South Holston, Fort Patrick Henry, Cherokee, Douglas, Norris, Chatuge, Nottely, Apalachia, and Tims Ford) adversely impact tailwater fisheries resources. If these fisheries resources are to be protected or enhanced, the concentrations of dissolved oxygen in these releases must be improved. Further study would be needed to determine the specific technology that would be best for each project, which would depend, among other things, upon the characteristics of the projects and upon the other water quality characteristics and downstream water uses to be enhanced and protected.

In addition to streamflow and dissolved oxygen, seasonal temperature changes in the releases from six reservoirs (Cherokee, Douglas, Blue Ridge, Ocoee No. 3, Ocoee No. 2, Ocoee No. 1, and Great Falls) create marginal conditions in tailwaters that are not favorable for either cold or warm water species, especially during the spring, summer, and early fall. Any future studies of improvements for these tailwater reaches should evaluate providing warmer releases during the summer and fall to enhance the development of viable warm water fisheries. No studies of the Ocoee projects should be undertaken until other water quality characteristics have been improved and conditions for support of a viable fishery have been demonstrated.

The tailwater reaches downstream from South Holston, Fort Patrick Henry, Cherokee, Douglas, Norris, Chatuge, Apalachia, Blue Ridge, and Tims Ford should be considered as "priority" reaches for any future studies directed toward improving fishery resources.

Water Supply

Water supply is impacted by releases from South Holston, Fort Patrick Henry, and Tims Ford and could potentially be impacted by releases from Normandy. At South Holston, the adverse impact is related to both streamflow and to release of resolubilized iron and manganese during flood control and maintenance operations that require sluicing water from the bottom of the reservoir. Mitigative measures have successfully reduced the impacts of iron and manganese in the past and are expected to be effective as long as they are continued. At Fort Patrick Henry, initial releases of 400 ft^3/s minimum mean daily streamflow were insufficient to meet water supply requirements downstream. Consequently, Tennessee Eastman in the late 1960s contracted with TVA to raise the minimum mean daily flow to 750 ft^3/s. Subsequently, Eastman requested additional releases to provide flows of up to 1000 ft^3/s, but TVA denied this request because not enough water was available on a dependable basis consistent with the present operations of the upstream reservoirs. High concentrations of soluble manganese in the releases from Tims Ford have impacted downstream users, and those from Normandy could potentially impact downstream users. Improvements are expected in both cases when the process of initial lake aging is completed. The problem at Tims Ford had been compounded by high release rates that have not allowed sufficient reaeration and time for reoxidation of the soluble manganese before it reached a water intake downstream. Operating limits on the hydro unit at Tims Ford have reduced the potential for the reoccurrence of this problem.

Assimilative Capacity

Assimilative capacity problems are created by low streamflows and low concentrations of dissolved oxygen in releases from Fort Patrick Henry and Norris Reservoirs. In both of these tailwater reaches, dischargers either have been required or are expected to be required to provide levels of waste treatment beyond best practicable to protect water quality downstream. Establishment of instantaneous minimum streamflows and improvement in concentrations of dissolved oxygen would alleviate these problems.

Although no existing problems are associated with the releases from Chickamauga, Guntersville, Kentucky, Watauga, Wilbur, Cherokee, Douglas, Apalachia, Ocoee No. 1, Bear Creek, and Normandy, deviation from the minimum streamflows provided by present operations would result in existing problems. Therefore, they are categorized as potential problems.

Assimilative capacity is marginal downstream from Fort Patrick Henry, Norris (Melton Hill Reservoir), Cherokee and Douglas (Fort Loudoun Reservoir), Chickamauga, and Guntersville Dams. Unless streamflows and concentrations of dissolved oxygen are improved in the tailwaters below these projects, assimilative capacity will become one of the factors that will restrict development in areas along the reaches downstream.

The releases from Fort Patrick Henry, Cherokee, Douglas, and Norris should be given priority for any future studies in relation to improving assimilative capacity.

Generic Options for Reducing Impacts

Possible improvements at a specific project could involve both physical and operational changes. Specific changes must be evaluated and tailored directly to individual projects on a case-by-case basis, considering the impact to be corrected, the cost of implementing corrective actions, the present purposes of the project, present water uses both upstream and downstream, and the impact of any corrective action taken at projects located farther upstream. No single technology can be applied under all situations The application of one technology at a specific project may reduce or correct one adverse impact but compound another adverse impact. This report does not evaluate or propose specific actions for individual projects.

Physical Changes

Physical changes include installing processes or equipment or structurally modifying projects. Physical changes are generally required or most useful for improving dissolved oxygen and, to a lesser extent, temperature and streamflow. Physical changes may be broadly classified as (1) control of water quality within the reservoir, (2) selective withdrawal of reservoir water with acceptable quality, (3) aeration of reservoir

releases, or (4) habitat modification. For essentially all the methods investigated, more study is needed to develop adequate, detailed design criteria. To date, there have been no successfully demonstrated full-scale systems that have achieved consistently a dissolved oxygen concentration of 5 or 6 mg/l. In addition, the various methods need to be demonstrated to determine operational problems that inevitably arise in the process of developing new technologies.

Operational Changes

Some water quality and water use impacts associated with reservoir releases can be partially solved by changing present operating procedures. Operational changes are generally required or most useful for improving streamflow for downstream uses and for correcting problems of short-term temperature variations, concentrations of soluble iron and manganese, turbidity and suspended solids, and to a lesser extent, dissolved oxygen. It is doubtful that operational changes alone can mitigate water quality and water use impacts at all projects, especially those that involve severe dissolved oxygen problems or marginal long-term temperature problems. A combination of both physical and operational changes may be necessary to improve releases from some reservoirs.

Possible operational changes include (1) maintaining a constant, minimum discharge, (2) limiting maximum flow, and (3) altering rule curves for reservoir operations to prevent water quality problems. Such operational changes would severely affect and limit the flexibility of the reservoir system as it is now used for its primary statutory purposes of flood control, navigation, and power generation.

Recommendations for Further Studies

When a single water quality characteristic or water use is severely affected by releases from a specific project, it has generally been categorized as deserving top priority for any future studies that may be undertaken to seek solutions to that generic problem. Overall, however, there is a greater need to seek solutions to the compound problems that occur at projects where multiple water quality and stream uses are impaired.

Both water quality and downstream water uses are now or potentially could be affected by the releases from 14 reservoirs (South Holston, Fort Patrick Henry including Boone, Cherokee, Douglas, Norris, Chatuge, Nottely, Apalachia, Blue Ridge, Ocoee No. 3, Ocoee No. 2, Ocoee No. 1, Tims Ford, and Nantahala). Each of these could be classified overall as a "priority" reservoir, but for various reasons, further studies should not be initiated now at Nottely, Ocoee No. 3, Ocoee No. 2, Ocoee No. 1, or Nantahala. Although Boone is not a priority reservoir, because of its close operating tie with Fort Patrick Henry and its secondary impacts on Fort Patrick Henry releases, these two projects must be considered as a unit for any further studies relating to the releases from Fort Patrick Henry Dam.

Although water quality and streamflow limit use of the Nottely tailwater for a fishery resource and for recreation, other factors such as high turbidity, unfavorable substrate, and poor access also limit these uses. Studies to determine possible improvements would provide only limited returns for this reach in comparison to other reaches. Existing water quality problems resulting from point and nonpoint source discharges in the Copper Basin area limit biological productivity in the Ocoee River. Therefore, further studies to evaluate the releases from the three Ocoee projects should be deferred until improvements in overall water quality have occurred and it has been demonstrated that a viable fishery resource can be established. Although TVA schedules the operation of Nantahala Dam, it is owned and operated by Alcoa. Any studies relating to this project should be conducted jointly by Alcoa and TVA.

The following studies are recommended to investigate specific mitigative actions for the remaining nine priority reservoirs.

South Holston

Studies should explore methods for improving concentrations of dissolved oxygen and the streamflow regime of releases from South Holston Dam to solve the problem of short-term temperature changes, enhance uses of the stream for recreation and a fishery resource, and possibly eliminate any future problems for water supply.

Fort Patrick Henry - Boone

Studies should explore methods for improving concentrations of dissolved oxygen and the streamflow regime of releases from Fort Patrick Henry Dam to improve uses of the South Fork Holston River and the Holston River for recreation, fishery resources, water supply, and assimilative capacity.

Cherokee and Douglas

Studies should explore methods for improving concentrations of dissolved oxygen, seasonal temperature changes, and the streamflow regimes associated with the releases from Cherokee and Douglas Dams to improve recreational opportunities and the fishery resources in these tailwater reaches and increase assimilative capacity in Fort Loudoun Reservoir. With respect to long-term temperature changes, the possibility of providing warmer releases more favorable to warm water species should be investigated.

Norris

Studies should explore methods for improving concentrations of dissolved oxygen and the streamflow regimes of the releases from Norris Dam to improve uses for recreation and a fishery resource and to resolve the problem associated with use for assimilative capacity.

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Chatuge

Studies should explore methods for improving the concentrations of dissolved oxygen and the streamflow regime of the releases from Chatuge Dam to improve uses for recreation and a fishery resource.

Apalachia

Studies should explore methods for improving the streamflow regime of the releases from Apalachia Dam to improve uses for recreation and a fishery resource. Improved streamflow would also provide enhanced conditions for the snail darter population that has become established in the lower portion of this tailwater reach.

Blue Ridge

Studies should explore methods for improving the long-term (seasonal) temperature changes and the streamflow regime of releases from Blue Ridge Dam to improve uses for recreation and a fishery resource. With respect to temperature considerations, the possibility of providing warmer releases more favorable to warm water species should be investigated.

Tims Ford

Studies should explore methods for improving concentrations of dissolved oxygen and the streamflow regimes of releases from Tims Ford Dam to improve uses for recreation and a fishery resource and to reduce the potential for impacts on water supply.

Ranking of Overall Priority Reservoirs

The ranking for initiation of additional studies for these nine overall priority reservoirs is as follows:

1. Cherokee
2. Douglas
3. Norris
4. Fort Patrick Henry - Boone
5. Apalachia
6. Tims Ford
7. Chatuge
8. South Holston
9. Blue Ridge

Scope of Recommended Studies

The additional studies recommended for these nine projects cannot be limited to methods for improving the quality of the releases or enhancing downstream uses. The achievement of these objectives directly conflicts

with present uses of the tailwaters and upstream reservoirs. These important considerations must be included in the study. Thus, the studies must include engineering, biological, and economic considerations of present uses (upstream and downstream) and considerations of possible future uses (upstream and downstream). Any action recommended on the basis of these studies should reflect the best balance of all of the competitive uses for a given body of water.

Any modifications recommended for improving the quality of the releases to enhance downstream uses must be accompanied by an identification and recommendation of sources of funds for implementing the modifications.

Some improvements may be possible within the constraints of present project operations. Other improvements, which would require changes in project operations that would not be consistent with their primary statutory purposes, would require reevaluation of the project purposes and legislative action to authorize project reallocation. In addition, an environmental impact statement would be required if actions proposed for mitigating adverse impacts on water quality or water uses would result in basic alterations of major projects or programs that could cause significant environmental impacts.

TABLES

Table 1

SUMMARY OF WATER QUALITY IMPACTS IN THE RELEASES FROM INDIVIDUAL RESERVOIRS[a]

Projects	Temperature		Dissolved Oxygen	Streamflow	Resolubilization of Metals		Turbidity and Suspended Solids	Gaseous Supersaturation (Nitrogen)
	Long Term	Short Term			Iron	Manganese		
Main Stream Projects								
Fort Loudoun	N-W	N	E/S	N	N	N	N	P
Watts Bar	N-W	N	E/S	N	N	N	N	P
Chickamauga	N-W	N	N	P	N	N	N	P
Nickajack	N-W	N	N	N	N	N	N	P
Guntersville	N-W	N	N	P	N	N	N	P
Wheeler	N-W	N	N	N	N	N	N	P
Wilson	N-W	N	N	N	N	N	N	P
Pickwick Landing	N-W	N	N	N	N	N	N	P
Kentucky	N-W	N	N	P	N	N	N	P
Tributary Projects								
South Holston	N-C	E	E*	P	E-M/S	E-M/S	N	N
Watauga	N-W	E	E	P	N	N	N	N
Wilbur	N-C	N	N	P/S	N	N	N	N
Boone	N-W	N	E	N	N	N	N	N
Fort Patrick Henry	N-C	N	E/S	P/S	N	N	E/S	N
Cherokee	E-W	E	E*	P	N	P	N	N
Douglas	E-W	E	E*	P	P	P	N	N
Fontana	N-C	E	E*	P	N	N	N	N
Norris	N-C	E	E*	P	N	N	N	N
Melton Hill	E-W	P	N	P	N	N	N	N
Chatuge	N-W	E	E*	P	P	P	N	N
Nottely	N-C	E	E*	P	P	P	N	N
Hiwassee	N-W	E	E	P	N	N	N	N

Table 1 (Cont.)

Projects	Temperature		Dissolved Oxygen	Streamflow	Resolubilization of Metals		Turbidity and Suspended Solids	Gaseous Supersaturation (Nitrogen)
	Long Term	Short Term			Iron	Manganese		
Tributary Projects (Cont.)								
Apalachia	N-C	N	N	P	N	N	N	N
Blue Ridge	E-C*	E	E	P	N	N	N	N
Ocoee No. 3[b]	E-W*	N	N	N	P/S	P/S	E/S	N
Ocoee No. 2[b]	E-W*	N	N	N	P/S	P/S	N	N
Ocoee No. 1[b]	E-W*	N	N	P	N	P/S	N	N
Tims Ford	N-C	E	E*	P	N	E-M/S	E-M/S	N
Great Falls	E-W*	E	E	P	N	P	N	N
Nonpower Projects								
Bear Creek	N-W	N	N	N	P/S	P/S	N	N
Little Bear Creek	N-W	N	N	N	N	P/S	N	N
Nolichucky	N-W	N	N	N	N	N	N	N
Normandy	N-C	N	N	P	P-M/S	P-M/S	N	N
Aluminum Company of America Projects								
Thorpe	N-C	E	N	P	N	N	N	N
Nantahala	N-C	E	N	P	N	N	N	N
Santeetlah	N-C	E	E	P	P	N	N	N
Cheoah	N-C	N	E/S	P	N	N	N	N
Calderwood	N-C	N	N	P	N	N	N	N
Chilhowee	N-C	N	N	N	N	N	N	N

a. N = no impact
P = potential impact
E = existing impact
M = mitigative measures already implemented to offset all or part of impact
* = severe impact
S = potential or existing impact of a secondary nature
W and C = warm water or cold water fishery presently in the tailwaters of the releases

b. Poor water quality conditions resulting from point and nonpoint source discharges in the Copper Basin area preclude most stream uses.

Table 2

THERMAL STRATIFICATION IN INDIVIDUAL RESERVOIRS

Project	Extent of Thermal Stratification		
	Strong	Weak	Unstratified
Main Stream Projects			
Fort Loudoun		X	
Watts Bar		X	
Chickamauga		X	
Nickajack			X
Guntersville		X	
Wheeler			X
Wilson		X	
Pickwick Landing		X	
Kentucky		X	
Tributary Projects			
South Holston	X		
Watauga	X		
Wilbur			X
Boone	X		
Fort Patrick Henry		X	
Cherokee	X		
Douglas	X		
Fontana	X		
Norris	X		
Melton Hill		X	
Chatuge	X		
Nottely	X		
Hiwassee	X		
Apalachia		X	
Blue Ridge	X		
Ocoee No. 3	X		
Ocoee No. 2			X
Ocoee No. 1		X	
Tims Ford	X		
Great Falls	X		
Nonpower Projects			
Bear Creek		X	
Little Bear Creek	X		
Nolichucky			X
Normandy	X		

Table 2 (Cont.)

Project	Extent of Thermal Stratification		
	Strong	Weak	Unstratified
Aluminum Company of America Projects			
Thorpe	X		
Nantahala	X		
Santeetlah	X		
Cheoah		X	
Calderwood		X	
Chilhowee	X		

Table 3

AVERAGE NUMBER OF DAYS PER YEAR TEMPERATURES OF RELEASES FOR INDIVIDUAL PROJECTS EXCEEDED SPECIFIED TEMPERATURES (1970 to 1977)[a]

Projects	Average Number of Days Temperature Exceeded Specified Values >68°F	>74°F	>80°F
Main Stream Projects			
Fort Loudoun	NA	NA	NA
Watts Bar	NA	NA	NA
Chickamauga	NA	NA	NA
Nickajack	NA	NA	NA
Guntersville	NA	NA	NA
Wheeler	NA	NA	NA
Wilson	NA	NA	NA
Pickwick Landing	NA	NA	NA
Kentucky	NA	NA	NA
Tributary Projects			
South Holston[b]	0	0	0
Watauga[b]	0	0	0
Wilbur[b]	1	0	0
Boone	0	0	0
Fort Patrick Henry[b]	1	0	0
Cherokee	63	32	1
Douglas[b]	56	55	9
Fontana[b]	2	0	0
Norris[b]	4	0	0
Melton Hill[b]	43	0	0
Chatuge[b]	3	0	0
Nottely[b]	8	0	0
Hiwassee[b]	1	0	0
Apalachia[b]	9	0	0
Blue Ridge	10	1	1
Ocoee No. 3	109	0	0
Ocoee No. 2	NA	NA	NA
Ocoee No. 1	113	13	1
Tims Ford[b]	3	0	0
Great Falls	81	20	8
Nonpower Projects			
Bear Creek	NA	NA	NA
Little Bear Creek	NA	NA	NA
Nolichucky	NA	NA	NA
Normandy	NA	NA	NA

Table 3 (Cont.)

Projects	Average Number of Days Temperature Exceeded Specified Values >68°F	>74°F	>80°F
Aluminum Company of America Projects			
Thorpe[b]	3	0	0
Nantahala[b]	0	0	0
Santeetlah[b]	0	0	0
Cheoah[b]	0	0	0
Calderwood[b]	0	0	0
Chilhowee[b]	0	0	0

a. NA = data not available or not applicable
b. Reach downstream from the project is recognized as a cold water trout fishery.

Table 4

LIKELIHOOD THAT DAMS HAVE RELEASES WITH TEMPERATURE CHANGES OR RATES OF CHANGE EXCEEDING TEMPERATURE CRITERIA[a,b]

Very Likely	Likely	Unlikely	Very Unlikely
South Holston	Melton Hill	Fort Loudon	Nickajack
Watauga		Watts Bar	Guntersville
Cherokee		Chickamauga	Wheeler
Douglas		Wilbur	Wilson
Fontana		Boone	Pickwick
Norris		Apalachia	Kentucky
Chatuge		Ocoee No. 3	Ft. Patrick Henry
Nottely		Ocoee No. 1	Ocoee No. 2
Hiwassee		Cheoah	Bear Creek
Blue Ridge		Calderwood	Little Bear Creek
Tims Ford		Chilhowee	Normandy
Great Falls			Nolichucky
Thorpe			
Nantahala			
Santeetlah			

a. State of Tennessee temperature criteria of 5.4°F change and 3.6°F/hour rate of change used as guidelines.

b. In the absence of data for all projects, some reservoirs were categorized on the basis of their similarity to reservoirs for which data are available.

Table 5

SUMMARY OF SIGNIFICANT HYDRAULIC CONDITIONS FOR RELEASES FROM INDIVIDUAL PROJECTS (1972 to 1977)

Projects	Hydraulic Conditions[a]			
	Average Number of Days Per Year of Zero Discharge	Regulated Minimum Instantaneous Flow (ft^3/s)	Estimated Natural 7 day 10 year Minimum Streamflow (ft^3/s)	Tailwater Reach Condition
Main Stream Projects				
Fort Loudoun	0	0	2240	Impounded
Watts Bar	0	0	4610	Impounded
Chickamauga[b]	0	0	5710	Impounded
Nickajack	0	0	5950	Impounded
Guntersville	0	0	6630	Impounded
Wheeler	0	0	7570	Impounded
Wilson	0	0	7780	Impounded
Pickwick Landing[c]	0	0	8060	Impounded
Kentucky[d]	0.3	20,000	9440	Impounded
Tributary Projects				
South Holston	29.0	0	154	Open
Watauga[e]	45.8	0	114	Impounded
Wilbur	(similar to Watauga)[e]	0	119	Open
Boone	0.5	0	428	Impounded
Fort Patrick Henry[f]	0	0	446	Open
Cherokee[g]	45.8	0	650	Open
Douglas[g]	6.8	0	1060	Open
Fontana	5.8	0	725	Open
Norris	20.7	0	250	Open
Melton Hill	13.2	0	274	Open
Chatuge	62.2	0	86	Open
Nottely	76.6	0	NA	Open
Hiwassee	7.6	0	350	Impounded
Apalachia	3.3	0	370	Open
Blue Ridge	27.7	0	157	Open
Ocoee No. 3	1.0	0	290	Open
Ocoee No. 2	(similar to Ocoee No. 3)[h]	0	300	Open
Ocoee No. 1[i]	0	0	320	Open
Tims Ford	41.3	0	85	Open
Great Falls	33.3	0	NA	Open

Table 5 (Cont.)

Projects	Hydraulic Conditions[a]			
	Average Number of Days Per Year of Zero Discharge	Regulated Minimum Instantaneous Flow (ft3/s)	Estimated Natural 7 day 10 year Minimum Streamflow (ft3/s)	Tailwater Reach Condition
		Nonpower Projects		
ar Creek	NA	11[k]	12.7	Open
ttle Bear Creek	NA	6	2.3	Open
lichucky	NA	300	270	Open
rmandy	NA	40[l]	27	Open
		Aluminum Company of America Projects		
orpe	38.2	0	18	Open
ntahala	19.2	0	NA	Open
nteetlah	16.5	0	64	Impounded
eoah	1.5	0	740	Impounded
lderwood	0.5	0	860	Impounded
ilhowee[m]	0	1360	895	Open

Number of days of zero discharge means those days during which there was no discharge during the entire calendar day and does not reflect those days during which there was no discharge for only portions of the day.

Natural 7-day, 10-years minimum streamflow is the estimated streamflow at the dam site for seven consecutive days with a recurrence interval of one year in 10 years in the absence of any regulation.

Tailwater reach condition designations: open, means the release is to a free flowing stream reach; impounded means the release is to the headwater of a downstream impoundment.

TVA attempts to provide a minimum daily average flow of 6,000 ft3/s.

Maintain a minimum tailwater of elevation 355 for navigation. Requires some release when Kentucky headwater level at winter level, elevation 354.

Minimum daily average of 25,000 ft3/s, minimum hourly flow of 20,000 ft3/s for navigation

Watauga and Wilbur operated, when necessary, to supply minimum flow at Elizabethton of 112 ft3/s.

f. Ft. Patrick Henry operated to supply a minimum daily average of 750 ft^3/s by contractu agreement with Tennessee Eastman Company. This is accomplished by running one unit at approximately 3,100 ft^3/s every fourth hour with zero on remaining three hours when no operating at higher rates.

g. Cherokee and Douglas releases correlated to provide a minimum daily flow past Knoxvill of 2,000 ft^3/s.

h. Spill occurs whenever spill occurs at Ocoee No. 3 or when discharge from Ocoee No. 3 exceeds approximately 1,000 ft^3/s. All discharge spilled since use of turbine discontinued on September 1, 1976.

i. Apalachia and Ocoee No. 1 operated so that the sum of the two releases on a daily average is not less than 600 ft^3/s. (For water quality at Charleston).

j. Tims Ford operated when necessary to maintain a minimum flow of 106 ft^3/s at Fayettevi Special arranged schedule on weekends from Memorial Day through September for fishing, aquatic life, and canoeing.

k. Normally, the minimum flow actually released during normal operations of Bear Creek Dam is about 30 ft^3/s, which is obtained from the minimum standard opening (1.0 foot) of the water quality gate.

l. Normandy Dam is operated to regulate streamflow for water quality control at Shelbyville to ensure a minimum instantaneous flow of 155 ft^3/s across the spillway of the Shelbyville Dam, (river mile 221.4) plus releases for water supply, now averaging about 3 ft^3/s, but projected to increase to about 10 ft^3/s by the year 2000, thus increasing the total requirement to about 165 ft^3/s.

m. Chilhowee operated to supply minimum instantaneous flow of about 1,360 ft^3/s.

Table 6

AVERAGE NUMBER OF DAYS PER YEAR DISSOLVED OXYGEN CONCENTRATION IN THE RELEASES FROM INDIVIDUAL PROJECTS WERE LESS THAN SPECIFIED CONCENTRATIONS (1970 to 1977)[a]

Projects	Average number of days per year concentration was less than specified concentration			Distance below project required to reaerate to 5 mg/l under worst-case conditions[b] (miles)
	<5 mg/l	<3 mg/l	<1 mg/l	
Main Stream Projects				
Fort Loudoun	105	8	0	42
Watts Bar	45	1	0	30
Chickamauga	2	0	0	8
Nickajack	1	0	0	NA
Guntersville	1	0	0	NA
Wheeler	10	0	0	NA
Wilson	10	0	0	NA
Pickwick Landing	0	0	0	NA
Kentucky	8	0	0	NA
Tributary Projects				
South Holston	93	43	2	7.5
Watauga	49	4	0	1.8
Wilbur	13	0	0	2.0
Boone	54	5	0	9.6
Fort Patrick Henry	93	9	0	5.7
Cherokee	147	105	64	50.0
Douglas	119	81	27	49.8
Fontana	74	25	1	9.6
Norris	82	64	9	13.6
Melton Hill	8	0	0	NA
Chatuge	103	74	14	6.5
Nottely	88	60	2	2.3
Hiwassee	62	0	0	3.0
Apalachia	12	0	0	1.8
Blue Ridge	59	1	0	15.1

Table 6 (Cont.)

AVERAGE NUMBER OF DAYS PER YEAR DISSOLVED OXYGEN CONCENTRATION IN THE RELEASES FROM INDIVIDUAL PROJECTS WERE LESS THAN SPECIFIED CONCENTRATIONS (1970 to 1977)[a]

Projects	Average number of days per year concentration was less than specified concentration <5 mg/l	<3 mg/l	<1 mg/l	Distance below project required to reaerate to 5 mg/l under worst-case conditions[b] (miles)
Tributary Projects				
Ocoee No. 3	0	0	0	NA
Ocoee No. 2	0	0	0	NA
Ocoee No. 1	0	0	0	NA
Tims Ford[c]	102	78	65	NA
Great Falls	23	1	0	7
Nonpower Projects				
Bear Creek	3	0	0	NA
Little Bear[d]	0	0	0	NA
Nolichucky	NA	NA	NA	NA
Normandy[e]	0	0	0	NA
Aluminum Company of America Projects				
Thorpe	NA	NA	NA	NA
Nantahala	NA	NA	NA	NA
Santeetlah	49	0	0	NA
Cheoah	29	0	0	NA
Calderwood	4	0	0	NA
Chilhowee	0	0	0	NA

a. NA = data not available or not applicable

b. Worst-case condition means the concurrent occurrence of the minimum concentration of dissolved oxygen and maximum turbine release rate.

c. Based on weekly dissolved oxygen data for Tims Ford from 1972 through 1977.

Table 7

SUMMARY OF OBSERVED CONCENTRATIONS OF IRON AND MANGANESE IN RELEASES FROM INDIVIDUAL PROJECTS[a,b]

Projects	Iron Concentrations (μg/l)						Manganese Concentrations (μg/l)					
	Total			Dissolved			Total			Dissolved		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
Main Stream Projects												
Loudoun	1600	50	438	NA	NA	NA	330	20	65	NA	NA	NA
s Bar	900	210	436	150	50	74	160	20	72	90	10	38
kamauga[c]	1600	<20	415	120	<50	75	2300	20	86	50	<10	23
ack	1400	<20	450	130	<20	68	120	30	59	60	<10	30
ersville[c]	1200	140	443	NA	NA	NA	5900	30	213	NA	NA	NA
ter	1700	160	489	580	40	117	190	30	64	110	<10	30
son	1100	<50	328	NA	NA	NA	230	<10	48	NA	NA	NA
wick Landing[c]	1000	60	357	NA	NA	NA	60	10	32	NA	NA	NA
ucky[c]	1200	260	606	NA	NA	NA	110	20	53	NA	NA	NA
Tributary Projects												
h Holston[c]	320	20	79	NA	NA	NA	320	<10	48	NA	NA	NA
oga	300	50	149	NA	NA	NA	230	10	44	NA	NA	NA
ar	690	50	232	NA	NA	NA	240	10	48	NA	NA	NA
	1900	20	354	NA	NA	NA	240	<10	57	NA	NA	NA
Patrick Henry[c]	1400	100	413	NA	NA	NA	110	10	50	NA	NA	NA
okee	710	<10	271	NA	NA	NA	480	<10	90	NA	NA	NA
las	2000	170	630	50	50	50	340	20	76	40	20	30
ana	900	50	251	NA	NA	NA	160	<10	53	NA	NA	NA
is[c]	580	<50	175	NA	NA	NA	500	<10	61	NA	NA	NA
on Hill	860	140	367	NA	NA	NA	130	30	55	NA	NA	NA
age	2400	60	658	NA	NA	NA	490	10	113	NA	NA	NA
ely	2500	110	963	NA	NA	NA	320	<10	98	NA	NA	NA
ssee	870	<50	357	NA	NA	NA	260	<10	67	NA	NA	NA
achia	800	100	262	NA	NA	NA	120	<10	51	NA	NA	NA
Ridge	780	100	307	NA	NA	NA	170	<10	46	NA	NA	NA
e No. 3	3000	390	1005	220	<50	91	660	100	202	260	70	153
e No. 2	4100	200	785	70	<50	51	300	60	169	280	20	143
e No. 1[c]	2100	<50	206	1300	<50	108	8200	<10	1119	6900	<10	203
Ford[c]	860	<50	172	NA	NA	NA	1300	20	375	NA	NA	NA
Falls	1400	130	325	NA	Na	NA	640	40	94	NA	NA	NA
Nonpower Projects												
Creek	4200	260	1477	1000	<50	152	2400	50	294	2400	<10	263
le Bear Creek	1200	100	414	170	<50	75	1400	30	300	980	<10	155
chucky	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ndy[c]	1700	130	788	1500	60	699	1800	130	965	1600	30	964

Table 7 (Cont.)

Projects	Iron Concentrations (µg/l)						Manganese Concentrations (µg/l)					
	Total			Dissolved			Total			Dissolved		
	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
Aluminum Company of America Projects												
Thorpe	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nantahala	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santeetlah	1700	<50	804	NA	NA	NA	210	<10	64	NA	NA	NA
Cheoah	940	50	247	NA	NA	NA	160	<10	50	NA	NA	NA
Calderwood	940	50	266	NA	NA	NA	180	<10	49	NA	NA	NA
Chilhowee	490	50	208	NA	NA	NA	130	<10	46	NA	NA	NA

a. NA = data not available.
b. All tailwater reaches are classified for use as sources of water supply.
c. Existing water supply intake located in the immediate tailwater reach.

20-955 O—84——185

Table 8

CONCENTRATIONS OF TURBIDITY AND SUSPENDED SOLIDS[a] OBSERVED IN RELEASES FROM INDIVIDUAL RESERVOIRS (1974 to 1976)

Projects	Turbidity (JTU)			Suspended Solids (mg/l)		
	Max	Min	Mean	Max	Min	Mean
Main Stream Projects						
Fort Loudoun	26	1	6	16	<1	5
Watts Bar	9	1	5	14	2	5
Chickamauga	28	<1	6	19	<1	5
Nickajack	27	2	7	38	2	9
Guntersville	23	2	7	12	1	5
Wheeler	56	<1	9	58	1	7
Wilson	23	1	6	8	<1	3
Pickwick Landing	22	1	5	10	<1	5
Kentucky	30	4	10	19	<1	9
Tributary Projects						
South Holston	8	<1	1	15	<1	2
Watauga	10	<1	2	5	<1	2
Wilbur	10	<1	2	8	<1	
Boone	10	<1	4	19	<1	5
Fort Patrick Henry	30	<1	7	24	<1	6
Cherokee	15	2	5	10	<1	4
Douglas	50	3	12	23	2	6
Fontana	11	<1	4	5	<1	1
Norris	12	<1	3	6	<1	2
Melton Hill	17	1	7	18	<1	6
Chatuge	16	1	6	15	<1	5
Nottely	38	2	15	26	<1	7
Hiwassee	13	1	5	13	<1	2
Apalachia	11	<1	4	5	<1	2
Blue Ridge	22	1	5	18	<1	3
Ocoee No. 3	25	2	8	22	<1	5
Ocoee No. 2	NA	NA	NA	41	<1	5
Ocoee No. 1	75	1	9	41	1	5
Tims Ford	NA	NA	NA	NA	NA	NA
Great Falls	40	1	6	39	2	6
Nonpower Projects						
Bear Creek		NA			NA	
Little Bear Creek		NA			NA	
Nolichucky		NA			NA	
Normandy		NA			NA	

Table 8 (Cont.)

Projects	Turbidity (JTU) Max	Min	Mean	Suspended Solids (mg/l) Max	Min	Mean
Aluminum Company of America Projects						
Thorpe		NA			NA	
Nantahala		NA			NA	
Santeetlah	6	1	2	14	<1	2
Cheoah	7	1	4	10	<1	2
Calderwood	10	<1	3	24	<1	2
Chilhowee	10	1	3	5	<1	2

a. NA = data not available.
b. Data for 1976 only.

Table 9

AVERAGE NUMBER OF DAYS PER YEAR OF SPILLING RELEASES[a] FROM INDIVIDUAL PROJECTS (1972 to 1977)

Projects	Number of Days Per Year of Spill[b]			
	Spillway	Sluiceway	Other	Total
Main Stream Projects				
Fort Loudoun	27.7	0	0	27.7
Watts Bar	66.0	0	0	66.0
Chickamauga[c]	99.5	0	0	99.5
Nickajack	109.2	0	0	109.2
Guntersville	108.6	0	0	108.6
Wheeler	41.7	0	0	41.7
Wilson	62.2	0	0	62.2
Pickwick Landing[d]	88.0	0	0	88.0
Kentucky[e]	137.2	0	0	137.2
Tributary Projects				
South Holston	0	0	10.7[f]	10.7
Watauga	0	0	0	0
Wilbur	NA[g]	NA	NA	NA
Boone	0	0.2	0	0.2
Fort Patrick Henry	1.5	0	0	1.5
Cherokee	0	2.5	0	2.5
Douglas	0	9.8	0	9.8
Fontana	NA	NA	0.8[h]	0.8
Norris	NA	28.0	1.5[h]	29.5
Melton Hill	6.8	0	2.2[i]	9.0
Chatauge	0.7	0	0	0.7
Nottely	0.6	0	0	0.5
Hiwassee	0.5	0	0	0.5
Apalachia	34.5	0	0	34.5
Blue Ridge	6.3	0	0	6.3
Ocoee No. 3	NA	NA	98.0[h]	98.0
Ocoee No. 2	NA	NA	NA	NA
Ocoee No. 1	46.8	0	0	46.8
Tims Ford	21.8	25.9	0	47.7
Great Falls	120.8	0	0	120.8

Table 9 (Cont.)

Projects	Number of Days Per Year of Spill[b]			
	Spillway	Sluiceway	Other	Total
Nonpower Projects				
Bear Creek	NA	NA	NA	NA
Little Bear Creek	NA	NA	NA	NA
Nolichucky	36.5	0	0	36.5
Normandy	NA	NA	36.5[f]	36.5
Aluminum Company of America Projects				
Thorpe	NA	NA	0.8	0.8
Nantahala	NA	NA	23.3	23.3
Santeetlah	NA	NA	21.7	21.7
Cheoah	NA	NA	27.7	27.7
Calderwood	NA	NA	33.5	33.5
Chilhowee	NA	NA	9.7	9.7

a. Spilling releases include all releases other than through the turbines.
b. Spill may have occurred for all or part of a day.
c. TVA attempts to provide minimum daily average flow of 6,000 ft^3/s.
d. Maintain a minimum tailwater of elevation 355 for navigation. Requires some release when Kentucky headwater level at winter level, elevation 354.
e. Minimum daily average of 25,000 ft^3/s, minimum hourly flow of 20,000 ft^3/s for navigation.
f. Howell-Bunger Valve releases.
g. NA = data not available.
h. Spillway and sluiceway discharge.
i. Lock culvert discharge.

Table 10

SUMMARY OF IMPACTS FROM INDIVIDUAL RESERVOIR RELEASES ON DOWNSTREAM USES AND RESOURCES[a]

Projects	Recreation		Fishery and Other Aquatic Life	Water Supply	Assimilative Capacity
	Floating	Fishing			
				Main Stream Projects	
Fort Loudoun	N	N	N	N	N
Watts Bar	N	N	N	N	N
Chickamauga	N	N	N	N	P-M (DO, flow)
Nickajack	N	N	N	N	N
Guntersville	N	N	N	N	P-M (flow)
Wheeler	N	N	N	N	N
Wilson	N	N	N	N	N
Pickwick	N	N	N	N	N
Kentucky	N	N	N	N	P-M (flow)
				Tributary Projects	
South Holston	E (flow)	E (DO, flow)	E (DO, flow)*	E-M/S (metals, flow)	N
Watauga	N	NA	NA	N	P (flow)
Wilbur	E (flow)	E (flow)	P (flow)	N	P/S (flow)
Boone	N	NA	NA	N	N
Fort Patrick Henry	E (flow)	E (DO, flow)	E-M (DO, flow)*	E-M/S (flow)	E-M/S (DO, flow)*
Cherokee	E (flow)	E (DO, temp, flow)	E (DO, temp, flow)*	N	P-M (DO, flow)*
Douglas	E (flow)	E (DO, temp, flow)	E (DO, temp, flow)*	N	P-M (DO, flow)*
Fontana	N	NA	NA	N	N
Norris	E (flow)	E (DO, flow)	E (DO, flow)*	N	E (DO, flow)*
Melton Hill	N	N	N	N	N
Chatuge	E (flow)	E (DO, flow)	E (DO, flow)*	N	N
Nottely	E (flow)	P (DO, flow)	E (DO, flow)	N	N
Hiwassee	N	NA	NA	N	N
Apalachia	E-M (flow)*	E (flow)	E-M (flow)*	N	P (flow)
Blue Ridge	E (flow)	P (temp)	E (flow, temp)	N	N
Ocoee No. 3[b]	E (flow)	P (temp)	E (flow, temp)	N	N
Ocoee No. 2[b]	E-M (flow)*	P (temp, flow)	E (flow, temp)	N	N

Table 10 (Cont.)

Projects	Recreation: Floating	Recreation: Fishing	Fishery and Other Aquatic Life	Water Supply	Assimilative Capacity
				Tributary Projects	
Ocoee No. 1[b]	E (flow)	P (temp, flow)	E (flow, temp)	N	P-M (flow)
Tims Ford	E-M (flow)	E (DO, flow)	E-M (DO, flow)	E-M/S (metals)	N
Great Falls	N	NA	NA	N	N
				Nonpower Projects	
Bear Creek	E (flow)	NA	NA	N	P-M (flow)
Little Bear Creek	N	NA	NA	N	N
Nolichucky	NA	NA	NA	N	N
Normandy	N	NA	N	P-M/S (metals)	P-M (flow)
			Aluminum Company of America Projects		
Thorn	E (flow)	E (flow)	NA	N	N
Santeetlah	E-M (flow)*	E (flow)	E (flow)	N	N
Santeetlah	N	NA	NA	N	N
Cheoah	N	NA	NA	N	N
Calderwood	N	NA	NA	N	N
Chilhowee	E-M (flow)	E (flow)	N	N	N

a NA = not available or not applicable
N = no impact
P = potential impact
E = existing impact
M = mitigative measures already implemented to offset all or part of impact
* = priority impact
S = potential or existing impact of a secondary nature
( ) = water quality characteristic impacting use (dissolved oxygen, temperature, metals, or flow)
Poor water quality conditions resulting from point and nonpoint source discharges in the Copper Basin area now preclude most stream uses.

Table 11

APPLICABILITY OF VARIOUS AERATION METHODS UNDER VARIOUS DESIGN CONSTRAINTS[a]

	Group I Reservoir Aeration					Group II Selective Withdrawal			Group III Aeration of Reservoir Releases												
Possible Optional Constraints	Destratification	1. Mechanical pumping	2. Diffused air	Hypolimnion aeration	1. Diffused air	2. Diffused oxygen	Submerged weir	1. Inflexible	2. Flexible	Multi-level intakes	Turbine venting	U-Tube aeration	1. Compressed air	2. Oxygen gas	Mechanical aerators	Weir aeration	Side-stream supersaturation	Oxygen injection upstream	1. Penstock	2. Diffuser	3. Downflow bubble contact	Tailwater diffusers	1. Oxygen	2. Compressed air	Habitat modification
Warmwater tailwater	+	+		-	-		+	+		+	-		+	+	+	-	-		-	-	-		-	-	+
Coldwater tailwater	-	-		+	+		-	-		-	?		+	+	+	+	+		+	+	+		+	?	+
Tailrace deeper than 10 ft.											+						+						+	+	-
High DO increase	-	-		?	?		+	+		+	-		+	+	?	+	+		+	+	+		+	?	-
Fluctuating reservoir pool							-	+																	
No effect on power production	+	+		+	+		+	+		+			-	-	-	-	-		?	+	+		+	-	-
No increase in dissolved nitrogen	?	?		-	+		+	+		+	?		-	+	+	?	+		+	+	+		+	?	?
Low capital cost	+	+		-	-		-	-		-	+		-	-	-	-	-		+	+	+		+	-	-
Need improved reservoir water quality	+	+		+	+		+	+		-	-		-	-	-	-	-		-	-	-		-	-	-

a. + = relatively positive effect of the particular aeration method.
- = relatively adverse effect of the particular aeration method
? = unknown effect on the condition indicated.

Mr. ROE. Are there other questions?

The gentleman from Minnesota.

Mr OBERSTAR. Thank you very much, Mr. Chairman. And I would like to thank our TVA witnesses for the splendid presentation and thorough discussion of your experience. I think your summary, that a system of incentives, as you put it, tied to a cooperative effort is the most effective way to achieve sound land management practices. That is the thrust of the legislation I have introduced. I think it is the collective wisdom of the past decade in dealing with nonpoint-source problems.

And you then cite cost sharing and fertilizer incentives as essential to the commitment to implement best management practices. Have you had experience with a totally voluntary program, and what has that experience been?

Dr. BOND. Yes, sir; all of our agriculture program activities that we are involved in in the Tennessee Valley regional are voluntary. However, we have limited resources to conduct agricultural programs, and after the planning process is completed, if the farmer is not willing or does not feel that he would like to make the kind of investments that the plan calls for, we suggest that he not participate with us. We want to be sure we have a demonstration that other farmers can observe.

We do not have enough funds to just put out a program and say anyone that wants to participate can. Our resources are quite limited. So what I would have to comment on then involves the Soil Conservation Service and the ACP program, which is on a much broader basis and which is voluntary, and the comment I would make is that I think that is the way to go, but we have found that many farmers in the area do not avail themselves of the program.

So there has to be some other encouragement as well as just the fact that it is available.

Mr. OBERSTAR. When farmers have refused to participate, what has generally been the basis for that refusal?

Dr. BOND. In our region many of the farmers are fairly elderly and have reached the age where substantial borrowing of capital and large investments to do the kind of—to make the kind of changes in their land-use practices that would be necessary to increase their income flow—just does not seem as desirable as it does to a younger farmer. And basically that is usually the reason.

Mr. OBERSTAR. Where you have an older farmer who is planning retirement and does not have the financial resources; a younger farmer who can see a future return on his investment and perhaps with some financial incentive——

Dr. BOND. Will do that.

Mr. OBERSTAR [continuing]. Might be able to do that.

Dr. BOND. Yes, sir.

Mr. OBERSTAR. What experience, if any, have you had with the Executive order that replaced A-95, which was referred to by a previous witness, Executive Order 12372? Is TVA subject to that?

Dr. BOND. I do not think—I just was making sure, but I do not think we deal with that, sir, in the work we do.

Mr. OBERSTAR. Thank you very much.

Mr. ROE. I want to thank the gentleman from Minnesota. We want to thank you very much for your testimony. It has been very

helpful. I think the one point that we want to develop further, one of many, is the fact that if we are going to pursue the nonpoint source issue, then we have to look to the issues of water—the relationship of water quality thereto. That is not called for at the moment, is the point you made. That is a very important point.

Now, we want to thank you for being with us, and we appreciate your testimony.

Dr. BOND. Thank you.

Mr. OBERSTAR. I would ask one more question.

Mr. ROE. The gentleman from Minnesota.

Mr. OBERSTAR. I have one more question that I would like to ask for the record here. We heard from Mr. Ruckelshaus that he fears a new nonpoint-source-grant-assistance program could lead to less rather than more water quality protection. It might tend to inhibit voluntary nonpoint-source-control efforts. Based on your experience in TVA, will you comment on this potential problem?

Dr. BOND. I guess our position would be somewhat different, having been involved with conducting educational program activities where farmers have participated and where there have been incentives. When I was talking about disincentives, I was—I am concerned with the fact that we may have two or three Federal programs where one will be in a sense encouraging the farmer to make various kinds of economic decisions that in turn might be contrary to the long term goals of the Clean Water Act.

I think that sometimes that happens, and I think the Government should be sure that it is consistent in what it lays out. And if a farmer does not want to meet the best management practices, he should not be able to avail himself of other incentives that would be contributing to degradation.

We have not found that incentives made available to farmers in a demonstration program kept them from going ahead and other farmers from making the same kind of investments and carrying out the same kind of management practices as long as it was demonstrated that those investments were increasing incomes and they could see that.

Mr. ROE. I want to thank you very much for your testimony.

Now, the committee has decided that we are going to break until 1 o'clock and then the first witness up will be the Wisconsin Department of Natural Resources, Ms. Linda Bochert and Mr. John Konrad.

Now, may I suggest to the witnesses, we have a very fine day in the sense that we love you dearly, but be that as it may, we are going to be running back to that floor on a number of occasions because there are that many bills up. So it looks to me like our schedule this afternoon will be longer than we had originally anticipated. Many of you have come a long distance to participate. There is no intent of the committee in hurrying anybody along because we happen to believe that the testimony involved today is extremely important to the overall implementation of the Water Quality Act.

So if you have early plans to make or whatever, I suggest you take another look at your schedule if you are going to be testifying today because there is nothing we can do about it. We will just labor through our efforts.

So thanks so much, and we will see you back at 1 o'clock. The subcommittee stands recessed until 1.

[Whereupon, at 12:17 p.m., the committee recessed to reconvene at 1 p.m. that same day.]

AFTERNOON SESSION

Mr. ROE. The subcommittee will reconvene.

Our first witness of the afternoon is Ms. Linda Bochert, from the Wisconsin Department of Natural Resources, accompanied by Mr. John Konrad, chief, Nonpoint Source Section, Bureau of Water Resources Management. And we also have our distinguished member from Wisconsin, Mr. Moody.

Mr. MOODY. The Department of Natural Resources in my State is very good, and I am sure the testimony will be clearly valuable for our committee records.

Mr. ROE. Splendid.

Ms Bochert, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF LINDA BOCHERT, EXECUTIVE ASSISTANT, WISCONSIN DEPARTMENT OF NATURAL RESOURCES MADISON, WIS.

Ladies and gentlemen, members of the Committee, thank you for the opportunity to appear before you today on a matter of considerable significance to the long-term health of our nation's lakes and streams.

My name is Linda Bochert. I appear on behalf of the Wisconsin Department of Natural Resources and its director, Secretary C. D. Besadny. I am the Executive Assistant to the Secretary of the Wisconsin DNR. The Wisconsin Department of Natural Resources has broad environmental protection and resource management responsibilities ranging from managing parks, forests, fish and game, to administering air pollution management, solid waste management, water quality management, and municipal treatment plant construction grants programs. Among our water quality responsibilities is the administration of the Wisconsin Nonpoint Source Water Pollution Abatement Program.

First, I would like to share with you some of our expertise gained from Wisconsin's nonpoint source control program. In 1978, Wisconsin became the first state to enact a state-funded nonpoint source water pollution abatement program. Today it is still the nation's most progressive and comprehensive nonpoint source control program. Wisconsin has gone beyond the stage of talking and conceptualizing into actual implementation of the program.

Second, I would like to comment on both the proposed House bill sponsored by Representative Oberster and the Senate bill which I testified on last July 19th.

In addition to my comments, I am submitting written testimony which decribes Wisconsin's program in greater detail and further discusses our concerns with the proposed bills.

BEGINNINGS OF WISCONSIN'S NONPOINT SOURCE PROGRAM

As mentioned earlier, in 1978 Wisconsin became the first state to enact a statewide nonpoint source water pollution abatement program. Although initial efforts in Wisconsin's water pollution abatement program were directed at the control of point source pollution, it soon became apparent that there was a need for a parallel nonpoint source control program. The Legislature and Governor recognized this need for a comprehensive point source/nonpoint source water pollution abatement approach and enacted the Wisconsin Fund grant program which provided state funds to cost share both point and nonpoint source control projects. Since 1978, Wisconsin has appropriated over 21 million dollars for the nonpoint source control program. The program is administered by the state's water quality agency—the Department of Natural Resources.

NATURE OF WISCONSIN'S NONPOINT SOURCE WATER QUALITY PROBLEMS

Wisconsin is internationally known for its numerous high quality recreational lakes and streams. This is due, in part, to the aggressive and long standing point source control efforts. As a state we take great pride in the water pollution abatement progress we have made through the control of point source discharges.

Wisconsin is also internationally known for its high quality agricultural products. You may be surprised to learn that Wisconsin's 44,000 dairy operations have more dairy cows than any other state. We are located in the northern corn belt, and also have several sizable urban areas. As a result of these factors, we estimate that about 40 percent, or 130 out of 330 delineated waterheads in Wisconsin, are in need of nonpoint source control projects.

These 130 watersheds shown on the shaded area of the attached map include many of Wisconsin's trout and smallmouth bass streams; over 60 large, deep inland lakes located in the heavily populated southeastern part of the state; and the majority of the drainage area to Lake Michigan. Most of these lakes and streams are not degraded by point sources while some are degraded by both point sources and nonpoint sources. In these cases, despite our achievements with point source controls, the water pollution clean up will not be complete until the nonpoint sources are controlled as well. The types of nonpoint sources we are dealing with include eroding construction sites in urbanizing areas; polluted stormwater runoff from existing urban areas; eroding stream banks; eroding croplands; and manure from barnyards and farm fields.

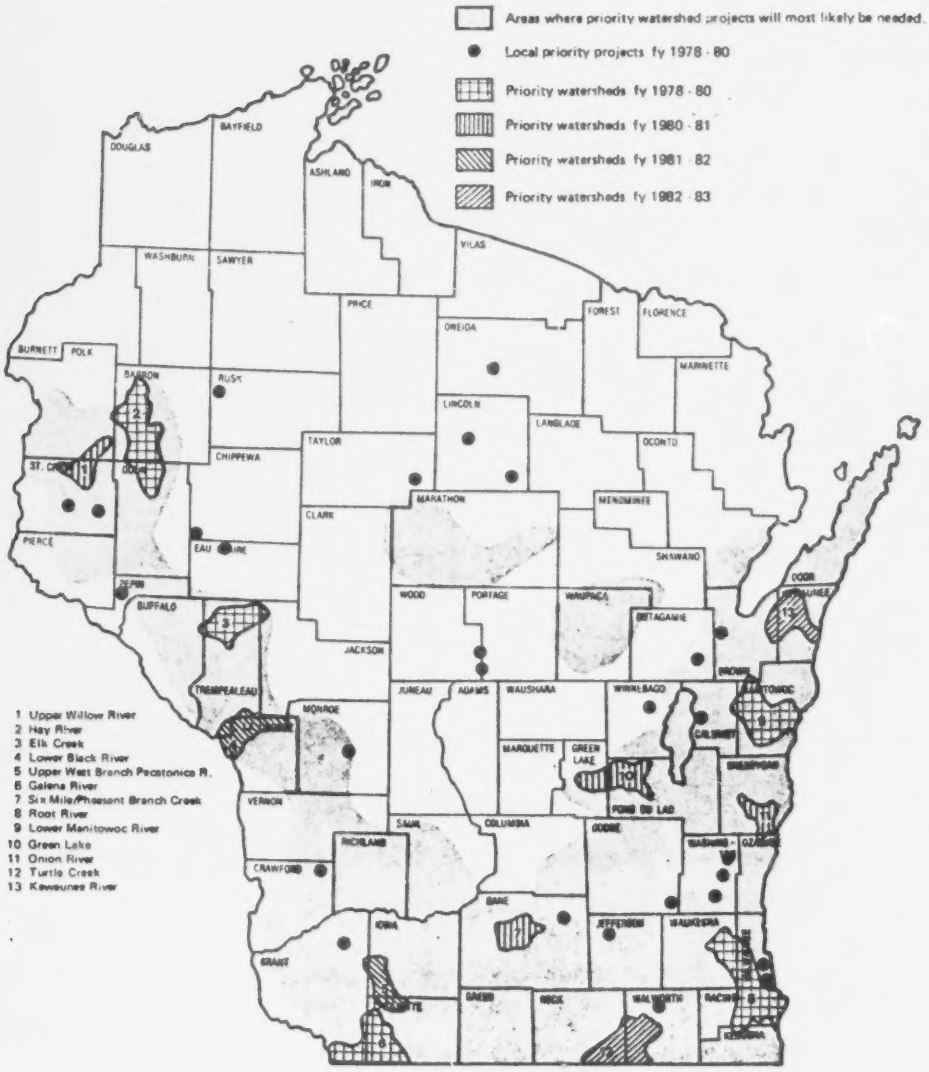
The following examples are cited to illustrate Wisconsin's nonpoint source water quality problems, particularly effects on fisheries. In the last 15 years, the fishery in some of Wisconsin's (and the Midwest's) best smallmouth bass streams has degraded to a point where the streams are no longer viable. In the steeply sloped agricultural section of southwest Wisconsin, stream monitoring on Pat's Creek found dissolved oxygen levels and ammonia levels considered unsafe for fish during and after some rainfall runoff events. In Livingston Branch, another bass stream, where 1,000 bass per stream mile were found in a 1964 survey, a 1980 survey found no bass at all.

Nor are the problems restricted to small streams. In 1980 and 1981, the dissolved oxygen in 65 miles of the Wisconsin River was nearly depleted during spring runoff. Although there are a number of municipal and industrial point source discharges to the river, wasteload modeling specialists estimated that manure runoff from farm yards and fields was the major cause of the problem.

Problems are not restricted to agricultural areas. In Milwaukee, monitoring of urban streams has found high levels of lead and other heavy metals from runoff from city streets.

In the last few years, we have only begun to understand the nature and severity of groundwater problems caused by nonpoint sources. In scattered areas of Wisconsin, manure entering creviced bedrock has resulted in high nitrate levels in private wells rendering them unhealthful for some human consumption.

Locations of current nonpoint source abatement projects and the critical nonpoint source areas.



1983 Priority Watershed Projects
1 Fall—Bear Grass—Bridge Creeks
2 Crossman—Little Baraboo Rivers
3 Oconomowoc River
4 Little River
1
2
3
4

DESCRIPTION OF WISCONSIN'S STATE FUNDED NONPOINT SOURCE PROGRAM

The Wisconsin Nonpoint Source Water Pollution Abatement Program is comprehensive in nature, in that it addresses both urban and rural nonpoint sources and provides state funds for financial, technical, and educational assistance. Landowners, land users, and municipalities are all eligible recipients of cost share funds.

The program uses a priority watershed project approach. The priority watersheds average about 100,000 acres in size. Grants are made for the implementation of Best Management Practices in watershed projects with critical water quality problems caused by nonpoint sources. Financial assistance is limited to those identified priority management areas which are contributing most significantly to the water quality problems.

The Wisconsin Department of Natural Resources, a state agency, is responsible for administration of the program. The implementation of projects, however, is carried out by county level agencies including county boards and the county land conservation committees.

This approach combines the water quality and fishery expertise of the state agency with the land management expertise of the county level agencies. A detailed plan for each watershed is prepared jointly by the Department and the county. Preparation of this plan requires a comprehensive assessment using computerized models. This assessment identifies pollutant loadings, critical sources, the quantities and types of nonpoint source control practices needed, and the costs of the practices. Along with this land management assessment, data on water quality, fish populations, fish habitat and potential for improved recreational uses are analyzed. The plan also identifies who will be responsible for the various implementation tasks, and lays out a schedule for the installation of practices. The plan guides the 6 to 8 year implementation phase of the particular project.

The priority watershed projects are selected by the Department of Natural Resources. The selection process involves recommendations from the general public, county elected officials, and representatives of federal, state, and local agencies and interest groups.

PROGRESS AND PROJECTED NEEDS

To date, eleven priority watershed projects are being implemented, two more will start shortly, and recently, an additional four were selected and watershed assessments have begun, for a total of 17 watershed projects. One of the projects is being funded jointly with the Experimental Rural Clean Water Program. Another is jointly funded with the Soil Conservation Service's Public Law 566 program.

A total of $21 million in state funds has been committed to these 17 watershed projects and 27 smaller-scale projects through fiscal year 1984–85. About $19 million is being used to cost share the installation of nonpoint source control practices and about $2 million to support county-level technical assistance and educational activities. The state's program funding has grown from $1.3 million in 1978–79 to over $5.5 million in 1984–85. The total projected need for nonpoint source projects in Wisconsin is about $250 million (1981 dollars). About $200 million of this projected need is for financial assistance and about $50 million is for technical assistance, education assistance and local administration activities.

COMMENTS ON PROPOSED FEDERAL LEGISLATION

Based on Wisconsin's 5 years of experience in developing and implemenmting a comprehensive nonpoint source water pollution abatement program, I would like to comment on major aspects of a nonpoint source program and the proposed House bill.

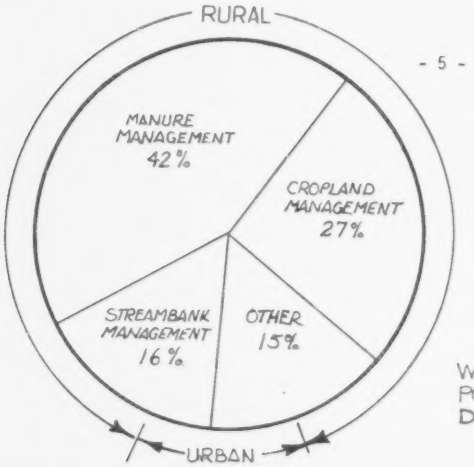
1. Wisconsin strongly supports the creation of a federal, comprehensive, urban and rural nonpoint source abatement program aimed at aggressively dealing with the water quality problems. It is our belief that a program is necessary since for many streams, point source control efforts will not be successful until nonpoint source controls are also in place. In most of our lakes and the rest of our streams, water quality problems do not involve point sources at all.

We encourage the House to pass a bill that specifically includes the control of all major urban and all major rural nonpoint sources. Although eroding cropland and rangeland are significant nonpoint sources, manure from dairy farms, eroding streambanks, and the variety of pollutants from urban areas have an equal or greater impact on the fisheries and recreational use of our lakes and streams. Ignoring those nonpoint sources other than cropland and rangeland will severely limit the accomplishments of a nonpoint source abatement program.

2. We believe funding available through a federal program should be sufficiently flexible to meet the state's needs. In Wisconsin's nonpoint source control program, implementation plan development, cost sharing, technical assistance, educational activities, and local administration are all important components.

The proposed House bill provides the flexibility to potentially fund all of these components. The Senate version, covering only technical assistance and demonstration projects, does not. Technical assistance and demonstration projects alone may work in some states. However, in dairy-based agricultural, Wisconsin and states such as New York, Pennsylvania, and Minnesota technical assistance and demonstration projects alone are not enough.

Wisconsin has already spent 12 million dollars just to cost share the installation of urban and rural nonpoint source controls. Of this amount, 42 percent has gone for manure management, primarily for barnyard runoff control. Cropland practices—primarily grassed waterways—have received 27 percent. Urban areas and urban and rural streambank erosion controls have received 20 percent. The remaining 11 percent has been spent for rural practices other than those for croplands.



WISCONSIN NONPOINT SOURCE WATER POLLUTION ABATEMENT PROGRAM DISTRIBUTION OF EXPENDITURES

The proposed House Bill is comparable to the Wisconsin program in that it would provide funds to states for technical, educational, and administrative assistance. We are concerned about the Senate version which would limit federal funds to technical assistance and demonstration plots. Based on the actual cost figures from the Wisconsin program, we project only a portion of our cropland practices needs would be met. The structural manure management, streambank, and urban practices which comprise 80 percent of our costs would not be installed.

3. The U.S. Environmental Protection Agency (EPA) should be the lead federal agency in this program. As the agency responsible for national water quality programs, EPA has the technical expertise for the establishment of water quality standards which are the foundation of the program. EPA can best provide the necessary integration with point source control, toxics management, groundwater, and clean lakes programs. It is the agency which has played a lead role in the pollution abatement for the Great Lakes. It is the only agency which can meet comprehensive program needs.

Recently, we have heard proposals where EPA would pass responsibilities to the U.S. Department of Agriculture (USDA) through a memorandum of agreement. We disagree with this proposal's shifting of responsibilities. In our experience with the Rural Clean Water Program, we found the state's role to be hindered by federal program policies. For a program to be effective, it needs the expertise of the state's water quality agency so that it truly reflects water quality objectives. USDA has not built strong ties with states. This shift would decrease the potential for coordination with ongoing water quality programs as well as with new programs for groundwater and toxics. Also it could cause urban nonpoint sources to be overlooked since they lie outside of USDA's areas of emphasis and expertise. In essence, this proposal would result in a federal program parallel rather than supplemental to state water quality programs.

This is not to say that USDA agencies should not be involved. In Wisconsin, the Soil Conservation Service plays a major role in assisting counties. Involvement of the Soil Conservation Service and other U.S. Department of Agriculture agencies is an aspect which can be negotiated by the state or designated management agencies. It should not be an involvement which is structured or mandated at the national level.

4. Based on our experience with Wisconsin's priority watershed project approach, we are convinced that concentrating watershed assessments, education activities, and implementation dollars into specific projects is successful and cost effective. This approach allows management of all aspects of the program, including selection of project areas, identification of critical sites, and identification of design standards for nonpoint source controls, to be based on water quality objectives. Also, it provides for integration with federal and state water resources programs such as inland lake rehabilitation, point source permit and grant programs, and fish management.

Neither the proposed House or Senate bills requires a watershed approach to be used. While work to be conducted under the House version would be based on water quality parameters to be identified in state plans, a concept we support, the bill does not identify any specific implementation approach in controlling nonpoint sources. We are concerned that the omission of a specific watershed approach in the bill could allow limited funds to be used in an inefficient, haphazard and scattered manner.

5. We believe funding levels and allocations should be based on need. From our perspective, the Senate version's funding level and allocation formula are inadequate and not based on actual needs. The $887,000 that would be allocated to Wisconsin for 1985 would be far short of the two million dollars needed to fund one of our priority watershed projects. The projected 1985 need in Wisconsin, based on a 25 year strategy is $8.8 million. State funds can only meet part of the need.

The formula based on cropland, rangeland, and forestland ignores important aspects such as the types of receiving water and significant sources such as animal waste. For example, additional emphasis should be given to the Great Lakes. They are of particular importance for two reasons. First, approximately one-third of the nation's fresh water resource is located in these lakes. Second, extensive documentation exists on the nonpoint source contributions to these lakes. In Wisconsin, and very likely in New York, Pennsylvania, and Minnesota, animal wastes particularly from dairy operations are of equal or greater importance than cropland erosion. There are 44,000 dairy operations in Wisconsin alone. We believe if any formula is used, it should incorporate livestock operations which do not come under the National Pollutant Discharge Elimination System. We believe data is available to include this factor in an allocation formula.

The proposed House bill, on the other hand, has the potential to allocate funding based on actual need and at the same time allow each state's program to be tailored to its particular situation. We believe that a formula, if included, should be based on actual water use impairments and realistic costs.

6. All states should be required to develop and implement a nonpoint source control program. Unless states are required to participate, there is no assurance that interstate or downstream waters will be cleaned up. Thus, the efforts of one state may not achieve their objectives due to a lack of effort by another state. Additionally, in some situations, point source control efforts may not achieve their objectives without nonpoint source control efforts.

The equity issue should also be considered. If we are asking a farmer or municipality to bear a portion of the costs to control their nonpoint sources, we should expect others in identical situations, but in other states, to do their share as well. For example, without equal responsibility throughout the entire dairy industry, it is likely Wisconsin's dairy farmers will bear an unfair burden.

In summary, I strongly suggest that a federal nonpoint source abatement program be developed with the following features:

(a) It deals with both urban and rural sources.

(b) It provides funds for cost sharing, technical assistance, education, and administration.

(c) It assists and supplements state programs.

(d) It is flexible enough to meet the needs in the different parts of the country.

(e) It allocates funds based on actual water use impairments and actual costs.

(f) It has adequate funding.

(g) It involves all states.

Of the two versions, the House version most closely fulfills the needs of Wisconsin and probably states such as New York, Pennsylvania, and Minnesota.

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We support these efforts to establish a federal nonpoint source control program. It is an effort that is long overdue. While Wisconsin is certainly no stranger to the role of leader in environmental programs, we believe we have stood alone in this particular field long enough. We invite the rest of the nation to join us in controlling the nonpoint sources of pollution to our nation's waterways. Thank you very much.

Mr. ROE. Please proceed.

TESTIMONY OF LINDA BOCHERT, EXECUTIVE ASSISTANT TO THE SECRETARY, WISCONSIN DEPARTMENT OF NATURAL RESOURCES; ACCOMPANIED BY JOHN KONRAD, CHIEF, NONPOINT SOURCE SECTION, BUREAU OF WATER RESOURCES MANAGEMENT

Ms. BOCHERT. Thank you for the opportunity to appear before your subcommittee this afternoon on a matter of considerable significance to the long-term health of our Nation's lakes and streams.

As you know, my name is Linda Bochert. I appear on behalf of the Wisconsin Department of Natural Resources and its director, Secretary C. D. Besadny. I am the executive secretary to the secretary of the Wisconsin DNR. The Wisconsin Department of Natural Resources has broad environmental protection and resource management responsibilities ranging from managing parks, forests, fish, and game, to administering air pollution management, solid waste management, water quality management, and municipal treatment plant construction grants programs. Among our water quality responsibilities is the administration of the Wisconsin nonpoint source water pollution abatement program.

First, I would like to share with you some of the expertise gained from administering Wisconsin's nonpoint source control program for the last 5 years. Second, to comment on the proposed House bill sponsored by Mr. Oberstar, and the current version of the Senate bill, on which we had the opportunity to testify in July.

In 1978, Wisconsin became the first State to enact a Statewide nonpoint source water pollution abatement program.

Although initial efforts in Wisconsin's water pollution abatement program were directed at the control of point source pollution, it soon became apparent that there was a need for a parallel nonpoint source control program. The legislature and the Governor recognized this need for a comprehensive point-nonpoint source water pollution abatement approach, and enacted the Wisconsin fund grant program, which was established to provide State funds to cost-share both point and nonpoint source control projects.

Since 1978, Wisconsin has appropriated over $21 million for the nonpoint source control program. The program is administered by the State's water quality agency, the Department of Natural Resources, and it is implemented by county-level agencies, including county boards and country land conseration committees.

Wisconsin is internationally known for its numerous high-quality recreational lakes and streams. This is due in part, we believe, to our aggressive and longstanding point source control efforts. Wisconsin is also internationally known for its high-quality agricultural products. Wisconsin's 44,000 dairy operations have more dairy

cows than any other State. We are located in the northern Corn Belt, and we also have several sizable urban areas.

As a result of these factors, we estimate that approximately 40 percent, or 130 out of 330 delineated watersheds in the State of Wisconsin are in need of nonpoint source control projects. These 130 watersheds include many of Wisconsin's valuable trout and smallmouth bass streams. They include over 60 large, deep inland lakes located in our heaviest populated area, the southeastern part of the State, and the majority area to Lake Michigan.

Most of these lakes and streams are degraded, not by point sources, but only by nonpoint sources. We also have areas where there is degredation suffered by the water body caused by both point and nonpoint sources. In all of these instances, as a consequence, despite our best achievements with point source control, the water pollution cleanup will simply not be completed until the nonpoint sources are controlled as well.

The types of nonpoint sources we are dealing with, and I believe that this will be important in later parts of the testimony, include not only rural concerns. They include eroding construction sites in urbanizing areas. They include polluted storm water runoff from existing urban areas. They include eroding stream banks, they include eroding croplands, and manure from barnyards and farm fields.

The problems are not restricted to small streams. In 1980 and 1981, the dissolved oxygen in 65 miles of the Wisconsin River was nearly depleted during the spring runoff. Although there are certainly a number of municipal and industrial point source discharges to that river, those point source discharges are controlled. Our wasteload modeling specialists estimated that the manure runoff from farmyards and fields, that is, the uncontrolled nonpoint sources, were the major sources of this dissolved oxygen depletion problem.

Nor are the problems restricted to agricultural areas. In Milwaukee, the largest urban area in Wisconsin, monitoring of urban streams has found high levels of lead and other heavy metals from runoff from city streets.

The Wisconsin Nonpoint Source Water Pollution Abatement Program is comprehensive in nature. It addresses both urban and rural nonpoint sources, and provides State funds for financial, technical and educational assistance. Landowners, land users, and municipalities are all eligible recipients of cost-sharing funds.

The program uses a priority watershed approach. To date, 11 priority watershed projects are being implemented, 2 more will start shortly, and recently an additional 4 were selected and watershed assessments have begun, for a total of 17 watershed projects. In all $21 million in State funds have been committed to these 17 projects, and 27 smaller-scale projects through fiscal years 1984-85.

A part of that $21 million, $19 million, is being used to cost share the installation of practices and $2 million is going to support county-level technical and educational assistance activities. The State's program funding has grown from $1.3 in 1978-79 to over $5.5 million in 1984-85. The total projected needs for nonpoint source projects in Wisconsin is almost $250 million. Of that amount, we estimate that $200 million of this projected need is nec-

essary for financial assistance, and that $50 million is necessary for the technical, educational, and local administration activities.

Based upon our 5 years of experience in developing and implementing a comprehensive nonpoint source water pollution abatement program, and our review of the proposed bills, we offer six points for your consideration in regard to this legislation.

First, Wisconsin strongly supports the creation of a Federal comprehensive urban and rural nonpoint source pollution abatement program aimed at aggressively dealing with water quality problems. A program is necessary because for many of our streams and lakes point source control will not be succesful until nonpoint source controls are also in place. We encourage passage of a bill that specifically includes the control of all major urban and all major rural nonpoint sources. Although eroding cropland and rangeland are certainly significant nonpoint sources, manure from dairy farms, eroding stream banks and the variety of pollutants from urban areas have an equal or greater impact on the fisheries and recreational use of our lakes and streams. To ignore these other nonpoint sources will severely limit the accomplishments of a nonpoint source abatement program.

Second, funding available through a Federal program must be sufficiently flexible to meet the State's needs. In our program, implementation plan development, cost sharing, technical assistance, educational activities, and local administration are all-important components. The proposed House bill provides the flexibility to potentially fund all of these components. The current Senate version, which covers only technical assistance and demonstration projects does not.

Technical assistance and demonstration projects alone may be sufficient in some States. However, in dairy-based agricultural Wisconsin, technical assistance and demonstration projects alone are simply not enough.

Third, the U.S. Environmental Protection Agency must be the lead Federal agency in this program. EPA is responsible for national water quality programs. It has the technical expertise to establish water quality standards, which are the foundation of these programs. Only EPA can provide the essential integration with point source controls, toxics management, ground water, and clean lakes programs. It is the agency which has played a lead role in the pollution abatement for the Great Lakes. It is the only agency which can meet comprehensive program needs.

We understand that there is a proposal that EPA would pass responsibility for this program on to the U.S. Department of Agriculture through a memorandum of agreement. We disagree with this approach. Nonpoint source water pollution control is only a piece of the overall puzzle of water polution control. For a nonpoint source program to be effective, it needs the expertise of the Federal and State water quality agencies, so that it truly reflects water quality objectives. To shift responsibility to USDA would decrease the potential for coordination with ongoing water quality programs, as well as with new programs for ground water and toxic management. It could also, we fear, cause urban nonpoint sources to be overlooked, since we understand that they lie outside the area of USDA's emphasis and expertise.

Fourth, based upon our experience with Wisconsin's priority watershed approach, we are convinced that concentrating watershed assessments, education activities and implementation dollars into specific projects is both successful and cost effective. This approach allows management of all aspects of the program, including selection of project areas, identification of critical sites, and identification of design standards for nonpoint source controls to be based on water quality objectives.

It also provides for integration with Federal and State water resource programs such as inland lake rehabilitation, point source permit and grant programs and fisheries management. Neither the proposed House nor Senate bills requires a watershed approach to be used. While work to be conducted under the House version would be based on water quality parameters to be identified in State plans, which is a concept we support, the bill does not identify a specific implementation approach in controlling nonpoint sources.

We are concerned that the omission of a specific watershed approach in the bill could allow limited funds to be used in an inefficient, haphazard and scattered manner.

Fifth we believe funding levels and allocations should be based on need. From our perspective, the Senate version funding level and allocation formula are inadequate and not based on actual need. The $887,000 that would be allocated to Wisconsin for 1985 would fall far short of the $2 million needed to fund one of our priority watershed projects.

The projected need in Wisconsin for 1985 alone is $8.8 million. The total projected need is $250 million. State funds can only meet a part of that need.

The Senate bill formula based on cropland, rangeland, and forestland ignores important aspects of the nonpoint source problems, such as the types of receiving water and significant sources like animal waste. In Wisconsin, animal waste, particularly from dairy operations, are of equal or greater importance than cropland erosion.

The proposed House bill, on the other hand, does have the potential to allocate funding based on the actual need and, at the same time, allow each State's program to be tailored to its specific situation.

Sixth, all States should be required to develop and implement a nonpoint source control program. Unless States are required to participate, there is no assurance that interstate or downstream waters will be cleaned up. Thus the efforts of one State can fail to achieve its objectives due to a lack of effort by another and, as I stated earlier, point source controls will not achieve their objectives without nonpoint source control.

We believe it is a question of equity. If we ask a farmer or municipality in Wisconsin to bear a portion of the cost to control their nonpoint sources, we expect others in like situations but in other States to do their share as well. Without equal responsibility throughout the entire dairy industry, for example, Wisconsin dairy farmers will bear an unfair burden.

In summary, we urge that a Federal nonpoint source water pollution abatement program be developed with the following fea-

tures: (1) Deal with both urban and rural sources; (2) provide funds for cost sharing, technical assistance, education, and administration; (3) assist and supplement States programs; (4) be flexible enough to meet the needs in the different parts of the country; (5) allocates funds based on actual water use impairments and actual costs; (6) have adequate funding; and (7) involve all of the Statess.

Of the two versions, the House version most closely fulfills the needs that we view in the State of Wisconsin.

We commend and support these efforts to establish a Federal nonpoint source control program. It is an effort that is long overdue. While Wisconsin is certainly no stranger to the role of leader in environmental programs, we believe we have stood alone in this particular field long enough. We invite the rest of the Nation to join us in controlling the nonpoint sources of pollution to our Nation's waterways.

Thank you very much.

Mr. ROE. Thank you for your comprehensive testimony.

The Chair recognizes the gentleman from Wisconsin.

Mr. MOODY. Thank you, Mr. Chairman.

It is very good testimony, and it certainly is music to the ears of us who have been, along with the Chairman, have been raising questions of most of the witnesses about nonpoint, and it is excellent to have a State that has shown some leadership come before us and explain what their points of view are.

When Mr. Ruckelshaus was here yesterday, he singled out Wisconsin for special praise on nonpoint source pollution, and I think deservedly so.

I have several questions, Ms. Bochert. When you get right down to it, what is the justification for Federal funding? Mr. Ruckelshaus and others pointed out that if the Federal funding commitment was extensive, we would just about break the bank on this program alone, because it could be potentially so vast and so expensive. What is the conceptual justification for Federal funding as opposed to State funding on these programs?

Ms. BOCHERT. I think there are really two questions there, if I might. One is why need there be a Federal role at all and, second, why should there be money attached to that.

Mr. MOODY. Right.

Ms. BOCHERT. I think we need a Federal role for several reasons. First of all, as we have indicated, we consider it a question of equity among the States. The State of Wisconsin has aggressively pursued its own nonpoint source program, but we have many interstate bodies of water. We also have industries, municipalities, and agricultural operations in Wisconsin which compete with like operations of like kind in other States. If we are to ask of our people to pursue this and attack nonpoint source pollution as a problem, we believe it is appropriate that other States ask the same.

In order to do that, we believe that it is necessary to have a Federal presence and a Federal role in the program to insure that there is a similar request being made of all of the States. We think the role that EPA can provide is one of assistance, one of encouragement. We think that they can be a clearinghouse function for technical information in terms of best management practices that are successful in one States or another in terms of dealing with

nonpoint source pollution, and we believe that their presence enables the Congress to articulate a national goal, so that the problems that are indeed interstate in nature can be addressed.

We also think that financial assistance is appropriate, and I know that it is difficult in these budget times, and the State of Wisconsin has certainly been through difficult budget times as well, to look anyone straight in the eye and say: "That's a great idea, but we need more money in order to do it." Nonetheless, we think that that is the case.

Our experience has been that contrary to the belief I think some may have that dealing with nonpoint source pollution is basically a problem of going to the farmer and convincing him to adjust some technique that he is using, which is a relatively low-cost, inexpensive thing for him to do. Our experience has been that the practices that are required to actually effectuate some water quality improvement are largely structural, and consequently are largely costly.

And in addition, because basically these practices are directed to controlling a water pollution circumstance, to improving water quality, unlike some of the soil erosion programs where the benefit of the program inures to the individual farmer, or the individual landowner and is in fact a site-specific benefit, to a great extent nonpoint source controls inure to the benefit of the public, because you are improving water quality, and it is a problem of asking someone to improve water quality for his neighbor downstream.

We think that those arguments are sufficient to justify what the State of Wisconsin has done in terms of providing cost sharing to our nonpoint source program, and because we believe that it is appropriate for there to be a Federal role, we similarly think that those arguments are sufficient to justify Federal funding.

Mr. MOODY. Thank you. Did you hear the Department of Agriculture's testimony earlier today?

Ms. BOCHERT. I heard part of it.

Mr. MOODY. They would seem to argue an opposite approach regarding your watershed, your selecting a priority watershed approach. The assumption under your—or our, I should say since I am from Wisconsin—the program is that you can identify the source of pollution within a watershed and go after them and do something about it.

Their testimony is to the effect that it is so vague, it is so diffuse, it is so hard to trace, that they really don't think that is the way to go. Can you comment on that?

Ms. BOCHERT. I would be happy to. Our experience in the 5 years that we have been administering this program is that indeed we can identify the sources of the nonpoint source pollution, that we have been able to identify them and to develop management practices to deal with them, and we have not found it problematic in terms of administering the program.

What we have found is that the watershed approach, which basically identifies a priority watershed for cleanup, and then within that watershed all nonpoint source contributors are a part of the solution, only than selecting certain practices to be a part of the solution. That has been the only effective way to actually get water quality improvement.

So I could only say, based on our experience, we do not share the judgment of the USDA in that regard.

Mr. MOODY. How do you handle the problem of a very high polluter in a nonpriority area? If it is not a priority watershed, and yet you have some real bad actor, you don't go after him?

Ms. BOCHERT. We have other tools available to us, although to the extent that this is a voluntary program, which means that it is not regulated within the State, people can participate on a volunteer basis, that is to an extent a problem with the approach that we have right now. We do have other authority in our State statute, if a case can be built to show pollution in those circumstances which will enable us to address that.

Mr. MOODY. Finally, back for a second to the funding question and the Federal role question: Could you imagine applying a priority watershed approach nationwide and, if so—it is implicit in your testimony—the funding, as you say, would have to follow need, and not formula by State or population, for example. Would there be some way to arrange the watersheds into some kinds of priorities nationwide and then work down from the top so that you could cut it off when the funds ran out, even though they might be very strongly distributed in some areas? Can you envision a way of doing that?

Ms. BOCHERT. I am sure you could do that. I think what we would recommend instead is that to the extent that the priorities are developed, they be developed against national criteria, but that actually they are prioritized within the State, so that you would start out with some rough formula that gave each State an opportunity for a fund, and then against a set of national criteria they would prioritize the watersheds within their own States. I think that way you maximize the advantage of participation by each State rather than, for example, pitting California's No. 1 watershed against Wisconsin's No. 1 watershed on a national scale.

I use a formula similar to what has been used for the construction grant program, for example, on an approach of that kind.

Mr. MOODY. Thank you, Mr. Chairman.

Mr. ROE. I have some additional questions I want to ask, but we will have to recess for 10 minutes to go vote, and then come back and resume.

Ms. BOCHERT. Fine.

[Recess.]

Mr. ROE. We're waiting for another member to come back, but I think we can go ahead and finish up the questioning that I had in mind.

First of all, I think your testimony was excellent because you've given us an insight from a State's point of view and you're not just theorizing. You're doing it. So that you are to be complemented on.

The thought occurred to me as we were going through the dialog with many of our witnesses in testimony that we speak of, other than municipal sewer plants or industrial plants, as being point source. But I'm not so sure that when we start to unfold your observations in the area in which you've already worked that we have, for example, a feed lot or something. That really isn't a nonpoint source, in a manner of speaking.

I think the Agriculture Department testified this morning to the point of view where they had invested some incentive money with one of the farmers to build a manure containing unit so to speak that was advanced technology which also created a point source.

Ms. BOCHERT. Right.

Mr. ROE. So I'm just wondering if there should be some relationship to, when we put together and bulk everything together in the nonpoint source area and we identify within the nonpoint source area point source discharges. If they shouldn't be classified, if they can be identified having originally fallen into this broad category, and if they couldn't be identified as point source discharges.

Ms. BOCHERT. To the extent that the solution to a nonpoint source problem is to create a controlled point source, which I think is what you're saying.

Mr. ROE. I'm thinking hot-spot type of thing.

Ms. BOCHERT. Right. It seems to me that what you have is sort of in the lawyer's world something changing form because it's been manipulated.

In other words, it started out life as a nonpoint source problem, but when you brought a solution on it, you brought it under control as a point source. And we have some of that experience.

Mr. ROE. Well, let me deal with that a minute. I don't think this is so far afield. The thought occurs to me, you made a very solid point, and you had your charts included, where you spoke to the issue that you've broken your State down over a 5-year period, and you're dealing in watersheds.

Ms. BOCHERT. Right.

Mr. ROE. In a State such as mine, which is the most urban in the Nation, that's difficult to do unless we're dealing in a river basin approach. And I think you might find that to be so in most of the urban States, northeastern, and some of the midwestern States.

But in effect we have bulked everything that wasn't considered to be a municipal or regional sewage plant disposal as point source, and industry per se as point source. Everything else has been maybe directly or indirectly bulked in as nonpoint source.

Ms. BOCHERT. Sort of by exclusion.

Mr. ROE. By exclusion. So in effect if a State such as yours through the 208 program, and together with your own efforts that you have promulgated in your own State, you have been able to now start to break down and to not necessarily prioritize but categorize within the broad blanket, the recepticle, if you like, of a nonpoint source. You've now been able to identify which was one of the points that the people that testified from Agriculture. They said we thought it would be too difficult to identify. You took umbrage with that, or you disagreed with him because you've been able to do it.

Ms. BOCHERT. Yes.

Mr. ROE. Simply because you intensify in your head.

So I'm just wondering if we should not give some consideration while we're trying to unfold the nonpoint source issue. We could say well yes, if States have identified through 208 their farm or—I'm thinking for example of tailings in the mining industry, acid mines that are identifiable within a watershed or river basin, and really, truly are point source. And therefore, when the State has

identified a list of point sources in the nonpoint source category grouping, should that then not be classified into the point source area.

Ms. BOCHERT. And consequently treated under the national pollution discharge elimination system permit program.

Mr. ROE. Precisely. See the wisdom I'm trying to express here?

Ms. BOCHERT. I do.

Mr. ROE. Let me digress, if I could interrupt you.

Ms. BOCHERT. Certainly.

Mr. ROE. The pressure not to provide any funding is enormous. I happen to agree that if we're going to be honest with the American people we've got to tell them where the pollution is coming from, and if they want to invest in it, fine. If they don't, that's up to them or to Congress to decide.

But to take a blanket approach that nonpoint source is not going to be eligible for any funding which everybody has testified, from the administration on down, we could be flapping our wings again.

But if we can say that we've identified some of the point source issues that fell in the broad-based category of nonpoint source and therefore should be classified as eligible under the grant program, is that not something we should look to?

Half a loaf is better than none.

Mr. KONRAD. Maybe I could try to respond.

Mr. ROE. Go ahead.

Mr. KONRAD. I think I agree with you and agree with your logic. I think something that is an assumption that is falsely made and a statement which you hear very often made is that nonpoint sources are diffuse sources and therefore you can't identify the source.

I think that is an incorrect statement; technically it is incorrect. Nonpoint sources have definable sources as much as point sources do.

What makes them a nonpoint source is the effect that they have on the receiving body of water where you cannot make the nice cause and effect type of relationship you can with a pipe.

But I think that you're right in that many of these things that we call nonpoint sources when we start to separate them out, they in fact become point sources.

Mr. ROE. You're identifying them.

Mr. KONRAD. Right. A barnyard, for example, can be either a point source or a nonpoint source depending on the type of water quality problem that it creates. And what we're really looking at is the most effective means to try to control that particular problem no matter where the technical funding comes from.

Mr. ROE. Well, what I'm trying to get at is look at this in a broader sense. The Agriculture Department testified this morning that they were observant of the point of view that the acceptable, the newly redefined water quality standards by EPA which was a fierce battle fought last year, as you know, has now been redefined. And therefore, everybody smiles and says, well, chalk up one for our side. Now we really shouldn't put that into the law. It's been done by administration. That's another flap that we've got to deal with.

Many members want to write that into the law. The Agriculture Department comes back this morning and says well that's fine

without their saying it in those words, but really the water quality standards that we've promulgated for point source discharge do not speak to the issue of nonpoint source. And then they elucidated and they said, well we have involved a nonpoint source. We have an accumulation of nutrients; we have acid runoff. We have soil erosion; we have sedimentation and so forth.

I made some notes to myself. If we're going to set up a broad-based standard to start to attack the nonpoint source and those issues have to be dealt with. And I think that's a fair commentary.

Then they spoke to the issue of cumulative effect, which again is not new to this committee, because we've talked about that for years. We are saying that the upper reaches of a stream versus the middle reaches and the lower reaches, if you accumulate it who's responsible, a broad-based interest, and so forth and so on.

Some people are taking an easy way out and they're throwing their hands up in dispair and saying that for us to deal with a nonpoint source situation is of such extraordinary cost that we can't possibly deal with it or it would be 100 years before we would be able to achieve it.

Therefore, we're saying that unless we deal with a nonpoint source that we're fooling the American people. No matter how much money we spend on the Chesapeake Bay, unless we deal with the nonpoint source going into the Chesapeake Bay, we are not going to solve the problem.

So it seems to me that if we have—you're making a number of succinct points, because of your experience over 5 years. You've been able to take the geographic area of your State and break it down into watersheds. That happens to be indigenous in part to the terrain of your State. That's not true in other States.

Therefore, river basins, nee watersheds, could be a measure that we could deal in so that you're dealing in a systems approach to the nonpoint source as we're trying to deal with in the point source.

Is that a reasonable statement of fact so far?

Ms. BOCHERT. Yes.

Mr. ROE. Now we go back and we had testimony from TVA and from Agriculture, saying that as you got into the nonpoint source issue, and you started in the case of TVA to talk about mine waters and so forth, you've got back into the land use issue, that is, the following.

We go back to yesterday's testimony, everybody fell off the chair, my gosh and we are going to have Big Brother now telling people what they should do with their land, States rights, home rule, the whole bag.

But nevertheless, if the States don't control their political subdivisions, their zoning and planning, then they are allowing these issues to occur, such as strip mining.

Should a permit be issued for strip mining for energy needs and so forth if in turn it's going to have an effect upon receiving water someplace?

Or should the whole country now be responsible through the Water Resources Development Bank go back and spend half a billion dollars to clean up the situation in West Virginia vis-a-vis the point of the acid mine waters is what we're trying to get at.

Therefore, what has been your experience in the attitude of the people coming back in Wisconsin when you set up your regional and watershed areas in reference to, or has there been any relationship to land use involved?

Have you run into that issue?

Mr. KONRAD. We ran into that issue very early in the development of the program, mainly in negative concern over how much of a land use program this was going to be.

I think we have effectively defused that concern with the experience that we have in the watershed projects.

Mr. ROE. How did you defuse it?

Mr. KONRAD. I think that by experience and by education; I think that the landowners and land users have realized what we're really talking about is land management, not land use.

There is a subtle difference.

Mr. ROE. It's more than a subtle difference.

Mr. KONRAD. And what we're looking at are effective ways to manage a land within a particular land use. And we're not looking at changing that land use.

Mr. ROE. Well, you may not be in Wisconsin, and I don't mean this critically, but that's not the experience we're getting in other States.

In other words, part of the testimony had to do with, on the 404 permit section. If you're familiar with that we're controlling filling primarily, dredging and filling. But when it came to draining the swamps or people excavating humus and so forth from the swamps, that was not covered by a 404 permit. And there was a little criticism that came up yesterday vis-a-vis the point of the confrontation between the Corps and EPA who effect. They do have joint jurisdiction.

So what I'm simply trying to get at is maybe we have to take an interim step. If we strengthened the law and began to mandate that States, above and beyond what they're doing in their point source treatment, had to now start to implement their 208 program as it related to nonpoint source. And if they had to get incentives going, et cetera, perhaps with the first point to identify within the nonpoint source, without rehashing that, the points, the areas that could then be determined to be, other than sewer plants, point source. Thus creating a point source issue as an interim step, making them eligible for grant and aid funds under the ongoing grant program, and then mandating over a 2-year period that they implement on a stronger basis the 208 program.

And then come back with some incentives, like you were speaking to the point that in implementing your plan for one of your identifiable issues, one watershed, that would run about $2 million as I recall the figure.

Ms. BOCHERT. Right.

Mr. ROE. So that some funding may be able to be made available without going overboard. Because we won't be able to sell it; we'll never be able to raise the money—in such a way that the States that are more advanced, such as yourselves, could start to implement as demonstration programs.

Does that make some kind of sense?

Ms. BOCHERT. I think it does. I think the experience we've had in Wisconsin is pertinent on several points.

First of all, in the early part of my testimony I make the statement that the Wisconsin legislature created a single Wisconsin fund grant program and divided it into point source and nonpoint source grant moneys.

So essentially what we've done is look at it as the universe of water quality insults, if you will. What is it on the land surface and what are the human activities which go on, which can impact on surface water.

And we've treated them as a unit. I think one of the reasons we've been successful in overcoming the "this is nothing but a land use program in disguise" concern—which was a very real concern at the outset of our program, and is a longstanding issue in Wisconsin, particularly in relationship to my agency—one of the reasons we've been successful in overcoming that is because our entire orientation is that this is a water quality improvement program.

And to the extent that achieving water quality improvement means that you affect the way that the land adjacent to that water body is used, it is the same thing as to say that by improving water quality you are doing nothing inappropriate because you are telling a paper mill how it must arrange its budget for the next several years in order to construct a sewage treatment facility.

Or you are inappropriately imposing your wishes on municipal government by telling them that they must treat as a high priority the construction of a sewage treatment plant, which may not be what they want to do with their local budget.

It seems to me that that is as appropriate or as inappropriate, depending on your perspective, as saying to a property owner, you must arrange your land use techniques in such a way as to improve this water quality.

So we've always begun from the issue of water quality and focused our efforts there—the watershed approach is a technique for doing that—to the extent that that ripples back into affecting the way people carry out their activities, it does have land use concerns. It has budgeting concerns. It has corporate decision making concerns, but they are anchored in that initial premise that it is a water quality program. It's not just Government coming out and saying we don't like the way you're running your farming operations you have to change it.

I think that orientation has been very helpful to use in Wisconsin in order to sell this program.

Mr. ROE. Because in the point source area many States have invoked no build restrictions unless they met their particular needs, and therefore that did control and does control the land use of the area.

Ms. BOCHERT. Precisely, we have a similar relationship in Wisconsin between municipal compliance with the point source requirements and the addition of sewer extensions to the treatment plant.

And we have prohibited construction in many communities until such time as they were in compliance which is effectively managing their growth for a water quality objective.

So we've basically just taken the position that our objective is water quality improvement and that whatever needs to be done to do that is an appropriate thing to affect.

Mr. ROE. And it took you time to educate the State.

Ms. BOCHERT. And there has been a tremendous emphasis on education. I can't emphasize how important that is.

Mr. ROE. I think it's critical.

I have no further questions. I think your testimony and your response have been excellent. I really do.

Ms. BOCHERT. Thank you very much.

Mr. CLINGER. Thank you very much for your testimony.

Mr. ROE. Thank you very much for being with us.

Ms. BOCHERT. Thank you.

Mr. ROE. Now let me tell the folks what we're doing. There is an hour of some ceremonial presentations taking place on the floor in respect to the anniversary of President Kennedy's death. And then we're going to go into some more legislation; 17 or 18 suspensions which will be voted on. A good portion of them will.

We have with us now, for example, the National Association of Counties who have been waiting since yesterday, and the National League of Cities who are kindred soles, I would think in part there. Would you have any objection—we're prepared to sit here all night. Would you have any objection if we were to merge a couple of these groups together.

There are some that lean toward the conservation, natural resource area. Some lean towards governmental responsibility in the field. If we would merge you together and took you as groupings would that be satisfactory? Because many of the questions would be related.

Is there anyone who would object to that?

[No response.]

Mr. ROE [continuing.] All right. Suppose we now take as our next witnesses the National Association of Counties and the League of Cities and the National Association of Conservation Districts together.

If that's so, then we have Hon. Neal Potter, council member from Montgomery County, Md., representing the National Association of Counties; we have Hon. Walter Rockenstein, city council member from Minneapolis, Minn.; and we have Mr. Neil Sampson, executive vice president, National Association of Conservation Districts.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT BY HON. NEAL POTTER, COUNCIL MEMBER, MONTGOMERY COUNTY, MD., ON BEHALF OF THE NATIONAL ASSOCIATION OF COUNTIES

Mr. Chairman and members of the committee: I am Neal Potter a member of the county council of Montgomery County, Md., appearing today on behalf of the National Association of Counties[1] to present our recommendations for amending the Clean Water Act.

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[1] NACo is the only national organization representing county government in America. Its membership includes urban, suburban and rural counties joined together for the common pur-

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America's counties have strongly supported Federal water pollution control legislation since its enactment in 1972. Since 1980, however, we have witnessed a trend towards reducing the Federal commitment to counties and cities responsible for complying with Federal treatment requirements and State water quality standards. This has markedly shifted the cost and compliance burden to the local level and we are concerned that it will make us unable to meet national public health and environmental goals.

To regain the momentum toward achieving national water quality objectives, NACo recommends:

First, a major increase in the authorization for the wastewater construction grants program; and

Second, directing that increase toward assisting those local governments having critical water quality problems or facing immediate enforcement action by the Federal Environmental Protection Agency or their respective states.

THE NATIONAL WATER QUALITY COVENANT

In 1972, the Congress broke with longstanding tradition and established national goals and a detailed system for achieving those goals under the Federal Water Pollution Control Act. That system included a covenant establishing shared responsibilities among Federal, State, and local governments. The purpose of that covenant was to clean up this Nation's rivers in order to achieve basic public health needs, provide for recreational use, protection of fish and wildlife, and enhancement of environmental quality.

The covenant among Federal, State, and local governments contained two essential elements:

First, the Federal Government mandated that as a matter of national priority publicly owned treatment works must provide secondary treatment and comply with state water quality standards, the current deadline for which is 1988. These requirements have and will continue to impose major costs on county governments, cities and other local agencies owning and operating treatment works.

Second, in return, for compliance with Federal treatment requirements, the Congress pledged to assist local governments by establishing the Federal wastewater construction grants program providing up to 75 percent of the cost of building publicly owned treatment facilities. In 1981, the Congress reduced the Federal share to 55 percent and eliminated some of the construction costs eligible for Federal assistance.

Federal treatment requirements and the mandate to comply with State water quality standards imposed new and major costs on sewer customers. These costs would be met entirely by sewer rate payers but for the existence of the Federal wastewater construction grants program and a few states which have agreed to pay part of the local share of that program. Many persons, businesses, recreational areas, farmers, and other interests receive the benefit of wastewater cleanup but would never pay for those benefits but the existence of the wastewater construction grants program supported by Federal revenues.

The wastewater construction grants program enjoyed a consistent level of support through fiscal year 1979. Beginning with fiscal year 1980, however, it has suffered major reductions. The chart which is attached to our statement graphically demonstrates the sharp reduction in the Federal commitment in the 10 year history of the program.

Unless the Congress commencing with the current fiscal year strengthens its commitment for assisting local governments to comply with Federal treatment requirements, the demand for weakening or eliminating the Federal mandate to achieve water quality and public health goals will increase as the deadline now scheduled for 1988 approaches.

The National Association of Counties strongly supports a revitalization of the covenant first established in 1972 by returning the annual authorizatotion to not less than $5 billion. In our judgment this step should be taken during fiscal year 1984 for one very important reason: Wastewater treatment plants are very sophisticated and complicated facilities. Their construction must follow detailed specifications. If

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pose of strengthening county government to meet the needs of all Americans. By virtue of a county's membership, all its elected and appointed officials become participants in an organization dedicated to the following goals: improving county government; serving as the national voice for county government; acting as a liaison between the nation's counties and other levels of government; and achieving public understanding of the role of counties in the federal system.

localities are to comply with the 1988 deadline, construction of these facilities must begin during the next 3 years.

The number of facilities and financial support needed for compliance with Federal treatment requirements and State water quality standards have been well documented. The Environmental Protection Agency's 1982 national needs survey reported a total Federal exposure under the 1981 amendments of $37.5 billion in grant eligible costs. Of that amount, $30.2 billion has been reported by EPA as backlog needs for compliance with Federal requirements and abatement of existing water pollution.

Counties and other local agencies are less able to meet that financial burden imposed by Federal law than they were in 1972. Even with the 1981 amendments, the Federal exposure is far greater than the annual appropriation of $2.4 billion for the next five fiscal years would provide to meet the Federal deadline. Renewing the Federal commitment is the single most important step toward preserving local government support for national water quality goals. It is certainly necessary if the Congress intends to enact so called antiback-sliding provisions contained in H.R. 3282 which would freeze stream use designations to those now in existence.

To meet the Federal exposure reported by the Federal Governments own needs survey, the National Association of Counties recommends that the construction grants program authorization be returned to its historic level of no less than $5 billion per year for the next 5 fiscal years, coincident with the period in which local governments must initiate construction to meet the 1988 deadline.

Our recommendation is consistent with amendments to the Clean Water Act proposed by Chairman Howard as H.R. 3282. That proposal would authorize $4 billion for fiscal year 1984; $4.5 billion for fiscal year 1985; and $5 billion annually for fiscal year's 1986 through 1988.

Counties are aware that the 1988 deadline is drawing near and in view of the fact that fiscal year 1984 is the last year in which the Federal Government will provide up to 75 percent of the cost of constuction, there is as strong likelihood that the full $2.4 billion appropriated this summer will be obligated before the end of fiscal year 1984. With careful planning by EPA, the States and local governments, an additional $1.6 billion could be committed in the next 12 months.

In addition, to further encourage the States to obligate funds appropriated in the out years, we recommend that the Congress shorten the obligation period from 24 to 18 months and add an additional 5 percent to the Federal matching share for those States which are able to obligate their annual allocation within a 12-month period.

PRIORITY WATER POLLUTION PROBLEM AREAS

In 1981, Congress declared in section 216 of the act that projects funded by the wastewater construction grants program "shall be projects which in the estimation of the State, are designed to achieve optimum water quality management, consistent with the public health and water quality goals and requirements of the act". Implementation of this policy has been left to the States. Since that time there has been growing interest in directing Federal assistance to the most critical water pollution problem areas. In addition, many counties and other communities are now facing enforcement action and EPA's draft municipal policy would focus enforcement action on those areas with the worst pollution problems.

States have had essentially 2 fiscal years in which to devise their approach to implementing section 216 to achieve optimum water quality management with Federal assistance. The Environmental Protection Agency has reviewed and approved State project priority systems which should implement that policy. Tempering the policy outlined in section 216, however, was the establishment of the State discretionary fund for major sewer system rehabilitation, new collector sewers, new interceptors, and correction of combined sewer overflows.

The net result of 216 in achieving optimum water quality management is not clear and should be carefully reviewed by this subcommittee. To what extent have the States focused Federal assistance on water pollution problem areas? To what extent has the use of the State discretionary fund hampered cleanup of the most polluted water bodies? What further direction should be given to EPA and the States to direct scarce Federal resources to the most significant water pollution problem areas?

These issues should be carefully studied as part of the current review of Clean Water Act amendments. We also recommend that consideration of approaches for further directing waste water construction grants to those areas with the greatest pollution problems or those local governments facing Federal and State enforcement action be an integral part of this evaluation.

There are essentially two approaches which have been identified to give priority to assistance under the Wastewater Construction Grants Program:

First, a separate track of grants to local governments discharging to the most polluted water bodies or requiring the greatest degree of abatement. Grants would be made based on prior approved implementation plans for certified projects. This separate track would be supported by a separate authorization and appropriation to meet construction schedules for each fiscal year.

The separate track would: result in faster obligation of Federal funds; establish a schedule for obligating those funds and complying with treatment requirements; and direct Federal resources to those areas with the greatest pollution problems.

A second approach to achieving optimum water quality management would require the States to allocate the major portion of their federal funds, perhaps as much as 75 percent to those areas and local governments where the greatest amount of cleanup can be achieved. This approach would retain the current formula for alloting funds to the States and the State grant process while requiring States to focus primarily on major pollution sources.

The National Association of Counties supports consideration of these and other approaches and pledges to work closely with the subcommittee to develop a solution for concentrating assistance to achieve the greatest cleanup possible for the resources invested.

CONCLUSION

The National program for achieving improved water quality is at a distinct crossroads. If Federal support for construction of wastewater treatment facilities is maintained at current or lower levels, local government compliance with the 1988 deadline and achievement of national water quality objectives in the near future will not be realized. The impact of this loss of momentum on industrial compliance with the Clean Water Act should be of major concern to the Congress.

We cannot lose sight of the fact that water pollution abatement is a matter of public health with major benefits for environmental quality, recreation, wildlife protection and those economic uses which depend on clean water. A major increase in the wastewater construction grants program along the lines we have recommended must be among the highest priorities.

Thank you very much for the opportunity to present our views and recommendations

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STATEMENT OF WALTER ROCKENSTEIN, CITY COUNCIL MEMBER, MINNEAPOLIS, MINN., FOR THE NATIONAL LEAGUE OF CITIES

Mr. Chairman, members of the subcommittee; I am Walter Rockenstein, City Council Member from Minneapolis, Minnesota. I am testifying today on behalf of the National League of Cities and the 15,000 cities of all sizes it represents.

It is an honor to be here this morning to support reauthorization of the Clean Water Act and suggest positive changes in this legislation. I would first like to summarize NLC's general position on the Act and then comment on specific provisions of existing law that we think should be revised.

PUBLIC HEALTH AND LOCAL ECONOMIC GROWTH

Protection of public health and encouragement of urban economic development are two of the highest priorities of the National League of Cities. The need to balance these two priorities and our concern that the protection of one not diminish the other guide our position on reauthorization of the Clean Water Act.

First, there can be no question that the Clean Water Act has resulted in significant improvements in water quality and public health. Passage of the Act has also contributed to the economic vitality of cities. The improvement in water quality in our major urban areas has made these cities more attractive places to live and work. And the growth of the water pollution control industry has added jobs in many cities.

Second, NLC underscores the importance of uniform and enforceable national clean water standards. Although states and local governments have the primary responsibility for protecting public health and safety, the federal government plays an essential role in assuring clean water. Without uniform and enforceable national clean water standards, states and local governments would be tempted or forced to reduce local water pollution standards to attract new industrial development. Without such standards, distressed areas would have little alternative but to seek the

short-term promise of economic development by compromising the long-term public health of the community. Only national standards can ensure that long-term national health interests will not be traded away in the day-to-day competition for community economic development.

Third, NLC believes that the cost of compliance with the Clean Water Act, while large, represents a cost-effective investment in the Nation's future. We acknowledge that some of the legislative provisions and regulations are overly complicated. Cities know that firsthand, and we will suggest specific improvements here today.

Despite this, the League knows that this cost cannot be avoided: either today to protect the health of our constituents and the vitality of our communities, or in the future, as dirty water causes burgeoning health costs and forces rescue missions to revitalize distressed cities.

Let me now turn to the League's position on specific provisions of the act which we believe should be considered for revision.

FUNDING FOR THE CONSTRUCTION GRANTS PROGRAM

As you are well aware, funding for this program has been reduced by 50 percent since 1978. Further and more damaging, the federal share of construction costs for publicly owned treatment works [POTW's] will drop from 75 percent to 55 percent beginning in fiscal year 1985. We continue to oppose this change.

The ability of municipalities to comply with any clean water program is contingent upon adequate funds for building treatment facilities. We support Mr. Howard's proposal which recognizes this relationship by providing for increased funding for this vital program.

We recognize the budget constraints facing the federal government, but those same constraints exist at the state and local level as well. If federal funds are not available to support the requirements and objectives of the act, timetables for meeting these requirements should be extended substantially.

We also believe that cities must be encouraged to proceed toward water quality objectives regardless of the current status of federal funding. Therefore, to encourage municipal self-help, cities that pre-finance water pollution control programs must be assured priority for reimbursement of local funds advanced.

PRETREATMENT

The National League of Cities believes that Congress should authorize EPA to establish pre-treatment standards only for those industries EPA has classified as major polluters and only for those classes of toxic pollutants which are known to be widespread and which may be causing human health and aquatic life problems.

Concurrently, EPA should have authority to exempt from the pre-treatment program those POTW's which can demonstrate that they are not interfering with the designated use of the receiving water.

The Administration proposed such a pre-treatment provision in its clean water bill. It has since reversed its position, claiming there are inadequate resources for effective implementation. Since States already have the option to enforce the National Pollutant Discharge Elimination System (NPDES)—in effect, accepting responsibility for end of the pipe discharges—our membership is considering support for granting the States a beginning of the pipe enforcement responsibility as well. This, it seems to us, would obviate EPA's concern about inadequate enforcement capability.

Allowing owners/operators of POTWs to substitute local standards for categorical standards to meet specific environmental circumstances and assure protection of water would be cost-effective and not resource-intensive. However, such local standards should not become a loophole for avoiding national requirements. Therefore, any such amendment should require: (1) compliance with National Pollutant Discharge Elimination System (NPDES) conditions; (2) development and implementation of local standards that are in the aggregate equivalent to national standards; and (3) maintenance of an adequate local monitoring and reporting program to protect the receiving waters.

LEVELS OF TREATMENT

NLC recommends that the statutory requirement of "secondary treatment" should be defined as a desired level of water quality and not restricted to any one particular process. The desired treatment level required of municipalities should be defined to prevent expenditures for unnecessary and expensive facilities. Moreover,

the least expensive solution should be favored, such as low flow augmentation when such a solution is the most economically efficient solution.

NONPOINT SOURCE POLLUTION

Over $30 billion in Federal grants has been invested in POTWs. Industry and State and local governments have contributed an equivalent sum for controlling point sources of water pollution. To date, there is no effective program for the control of non-point sources of water pollution under the Clean Water Act. Yet, we know that urban stormwater drainage, construction, agriculture and mining activities, and seepage from individual wastewater disposal systems are major contributors to water quality problems.

NLC believes Congress and the administration should proceed expeditiously—through expanded research and development, technical and managerial assistance, and funding—to aid the efforts of local and state governments in the control of nonpoint sources of water pollution.

In addition, Section 201 of the Act should provide for the funding of localized nonpoint source-abatement measure identified as priorities in approved and certified Section 208 plans.

FEDERAL COMMON LAW AND THE ACT

The interaction of federal common law and the Clean Water Act remains a confusing legal tangle for most municipal officials. Last year, we reviewed the issue from the perspective of the injured party and the injuring party. We believe no municipality injured by a willful or negligent violation of federal or State law should be deprived of a remedy if one exists under the Federal Water Pollution Control Act or other appropriate laws.

Further, where the violator presents as a defense, acting "in good faith" or in compliance with EPA and state permits, the injured municipality should be able to make EPA a party in the lawsuit.

WATER QUALITY STANDARDS

When our Steering Committee met last April, the outcome on the controversy over the proposed changes in Water Quality Standards was very unclear. While it appears thats the Senate and EPA have reached agreement on this issue, we are still uncertain about the final resolution of this matter. Accordingly, NLC's Steering Committee recommended that we adopt a policy prohibiting states from downgrading or revising standards where designated uses have been attained; permitting a revision of the standards if a state can demonstrate that the existing designation is unattainable because of (1) natural background, (2) irretrievable man-induced conditions or (3) because attainment of the designated use would result in substantial and widespread adverse economic and social impact.

Further, we believe that where water quality exceeds the level necessary to maintain a designated use, a state should have the option to allow lower water quality for that stream because of necessary and justifiable economic or social development for which there is no feasible alternative. In no case should the degradation of water quality interfere with or become injurious to existing instream use. Before a state exercises such an option, it should be required to hold public hearings and coordinate with all affected governmental agencies.

TOXIC SLUDGE

Ironically, the statutory requirements designed to alleviate water pollution are so successful that they are now producing second generation problems. New treatment plants are generating mountains of sludge to be disposed of, some of which is highly toxic.

While the League of Cities is only now in the process of developing a detailed policy on the use and disposal of toxic sludge, our current policy calls for EPA to support research of the problems arising from the management of wastewater treatment facilities.

We also believe innovative and alternative treatment technologies have not been used to their fullest potential, and that federal research, development and public education concerning these technologies should be expanded.

CONCLUSION

We believe these suggestions will speed attainment of the Clean Water Act's important goals. I appreciate the opportunity to present NLC's views before the committee and would be happy to answer any questions you have.

TESTIMONY OF NEIL SAMPSON, EXECUTIVE VICE PRESIDENT, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

Mr. Chairman, members of the subcommittee: I am Neil Sampson, Executive Vice President of the National Association of Conservation Districts, a private nonprofit organization representing the nearly 3,000 soil and water conservation districts of America. It is a privilege to come before you today to represent the views of those districts and the 17,000 men and women who guide their daily work.

We believe that the farmers and ranchers of America, if given the proper incentives, are fully ready to take major steps to reduce the nonpoint source pollution that can occur from agricultural and forest production.

Ten years ago, the major problem facing conservation districts and local governments was that they simply did not know how much of a problem nonpoint sources of pollution really were, and had little notion of how to address them after they were identified. Today, the problem is the apparent apathy on the part of the Federal Government as to whether those problems are important or not.

In the past few years, the 208 program in the Environmental Protection Agency has virtually dried up. Over at USDA, where clean water programs proliferated in the late 1970's, a new set of priorities for the conservation programs completely ignores water quality, focusing instead on soil erosion on cropland, water supply, and flood control. Programs directed at water quality are continuing in 44 States, as Appendix I illustrates, but that seems to be the result of local people who recognize that clean water is no less important today than it was a few years back. It certainly cannot be attributed to any significant encouragement from the Federal Government.

This is why NACD strongly supports H.R. 4037 and urges the subcommittee to include it in the Clean Water Act Amendments.

We feel H.R. 4037 addresses an important issue at a critical time. The ongoing implementation efforts that have emerged from a decade of 208 planning activity needs aid and encouragement right now. If the Clean Water Act were to be amended today without mention of nonpoint Source implementation programs, we would find ourselves 5 years from now with even more serious water pollution problems, but little if anything in the way of institutional capability to deal with them. That capability exists today, in state and local governments, conservation districts, and agricultural organizations. It will wither and die, however, unless we continue to give those people the signal that the problems they are addressing are of enough importance to the Nation to merit continued effort.

It is important that we address agricultural nonpoint source pollution in the correct fashion. Other forms of water pollution have been addressed by regulatory programs, but agricultural nonpoint source pollution can not be handled in this fashion. It is simply impossible to regulate the wind, the rain, and the daily activities of millions of people who work the agricultural lands of America. In addition, political realities dictate that the imposition of a regulatory program—or even the threat of one—engenders violent opposition from the very people upon whom we must depend for cooperation—the well-meaning farmers and ranchers of America. It is, therefore, vital that Congress design a program that encourages the voluntary coopertion of these land users. Without that cooperation, we simply will not get the pollution reduction that is needed.

In our opinion, the type of program outlined in H.R. 4037 meets that criteria, and its passage would result in a significant reduction in water pollution stemming from nonpoint sources. Our assessment of the situation in rural America is that there are many potential water quality programs eagerly awaiting the funds that will give them the chance to operate.

Those funds that are needed, while they are vital, are not overwhelming in amount. Conservation districts in many localities are operating water quality demonstration projects that are greatly reducing the amount of soil erosion, water runoff, and pollution from agricultural activities.

Conservation districts have used local funds, state water quality agency funds, [illegible] programs, and EPA demonstration grants over the past decade, and the variety of approaches that have been tested are numerous. One thing stands out, however. In all these programs, success has been proportional to the amount of local in-

volvement, initiative and commitment that was incorporated in the program design. That can be recreated if the federal program that emerges is one of education, incentives and assistance.

We are aware that others feel strongly that more direct and drastic measures are needed. A program that is largely voluntary, they argue, will not reach those people who willfully destroy the land and pollute the water for their personal profit.

Sadly, that assessment is too often true. Today's economic climate has encouraged land speculation and abuse that attracts the kind of pepole to whom the future means little, and conservation means nothing. So we are baraged by examples of land abuse, and conservation districts find some of these abusers almost impossible to reach.

But we must not let the "headline" stories of soil abuse and erosion lead us to be lieve that this type of behaviour is common in rural America. It is not. Most farmers and ranchers are simply looking for ways to survive in business, during some terribly difficult economic times, and build or maintain the quality of their land in the process. It is to this vast majority that we must appeal in any nonpoint source pollution control program. By winning their cooperation, we have much to gain, both in terms of public understanding and support for improving water quality, and in the quality of the water itself.

Conservation districts have demonstrated that locally-directed programs, with only modest funding, can accomplish this goal. It is to this end that the Nation must address its nonpoint source control efforts, and H.R. 4037 represents the right way to begin the process.

We have compared H.R. 4037 with S. 431, the proposal that has emerged from the Senate Committee on Environment and Public Works, and would like to offer some observations about specific issues that will need to be addressed.

Section 319. (a)(1) of H.R. 4037 gives the state only 9 months to produce a report on nonpoint sources of pollution and (b)(1) gives the same amount of time to submit a plan which the State can implement over the next 4 years. Such a schedule seems difficult, if not impossible, for most states to meet. It seems unlikely that EPA could even have regulations guiding the submissions in less than 6 months, which would leave the states to develop their programs largely in the dark.

We have no inclination to promote another long, expensive round of planning, but would suggest that a more reasonable time frame might be a year to 18 months. We think it is possible that the longer time frames could result in more effective programs that would accomplish more and cost less than if they were the result of a hasty job done to meet an impractical deadline.

We support the requirement in (b)(1)(A) that requires the state to develop its plan in cooperation with local agencies and organizations who have expertise in nonpoint source control. Again, this will mean consulting with many organizations, representing a wide range of interests and geography, and makes the 9-month time limit seem even more difficul

Section (b)(1)(B) addresses the federal consistency issue by suggesting that somehow, within 9 months, a State can indentify all the federal activities that might impact on their water quality program over the next 4 years. That seems impractical. This is not an easy issue to address, but the Senate approach that encourages States to identify specific programs and projects as part of the ongoing implementtion of Executive Order 12372 seems a more workable approach which we would encourage the Subcommittee to consider.

We support the requirement in section (b)(1)(C) for a State-established schedule of implementation. There have been proposals for a federally-mandated time limit, but the wide variety of situations encountered around the country makes such a deadline impractical.

There are differences between H.R. 4037 and S. 431 in several areas having to do with funding the proposed nonpoint implementation programs. H.R. 4037 would authorize up to $150 million a year to be appropriated for the program. We support that level of funding.

S. 431 allows federal cost-sharing to the extent of 75 percent of the cost; H.R. 4037 is limited to 50 percent. S. 431 would distribute two-thirds of the funds on a formula basis and one-third on the basis of merit for those States willing to address difficult or serious problems, test innovative methods, or tackle interstate problems. H.R. 4037 allows for special grants to States willing to address interstate problems, but limits grants to any one State to a maximum of 15 percent of the amount of the appropriation. Neither way is either clearly superior, in our view.

One area that we find particularly well-conceived in H.R. 4037 is the ability of the Administrator to fund local projects in those States where the State has not been willing or able to undertake a statewide program. (Subsection f)

Mr. Chairman, we commend the Subcommittee on this legislation, and urge its passage. We have attached a statement of general principles to this testimony as Appendix 2. These principles were the outcome of a great deal of cooperative work on the part of many organizations this summer. We are in full support of them, and feel that H.R. 4037 does an adequate job of adhering to them.

We appreciate this chance to bring our views on this important legislation to the Subcommittee, and will be pleased to answer any questions you might have.

APPENDIX

A telephone survey was conducted by NACD the week of July 4, 1983 to gather information on 208 activities. Responses to questions and a brief summary of the activities currently in progress are highlighted in the succeeding pages.

These are examples of various projects being undertaken in the States, but may not be all inclusive.

208 SURVEY

The following questions were asked:

(1) Did the State ever get a 208 statewide plan that includes an agricultural element approved by EPA?

(2) Is the State soil conservation agency and/or districts designated as the implementing agency for the agricultural nonpoint phase?

(3) Are you doing anything right now?

Summary

Question No. 1.—44 States responded in the affirmative; 6 States responded in the negative—California, Colorado, Delaware, Indiana, Massachusetts, New York.

Question No. 2.—47 States indicated that the State soil conservation agency and/or districts is the designated implementing agency; 3 States indicated that other agencies are the designated agency—Maine, New Hampshire, Pennsylvania.

Question No. 3.—44 States responded in the affirmative; 6 States responded in the negative—North Carolina, Texas, Iowa, Nebraska, Maine, Massachusetts.

State	Question No. 1	Question No. 2
Alabama	Yes	S&W Conservation Committee.
Alaska	Yes	Soil Conservation Subdistricts.
Arizona	Yes	State Land Department, Division of Natural Resources Conservation
Arkansas	Yes	S&W Conservation Commission.
California	No	Some RCD's designated.
Colorado	No	Soil Conservation Board.
Connecticut	Yes	Council on S&W Conservation.
Delaware	No	Conservation Districts.
Florida	Yes	Bureau of S&W Conservation.
Georgia	Yes	S&W Conservation Committee.
Hawaii	Yes	Conservation Districts.
Idaho	Yes	Soil Conservation Commission and Districts.
Illinois	Yes	Division of Natural Resources and Districts.
Indiana	No	S&W Conservation Committee and Districts.
Iowa	Yes	Soil Conservation Committee and Districts.
Kansas	Yes	Conservation Commission and Districts.
Kentucky	Yes	S&W Conservation Commission.
Louisiana	Yes	S&W Conservation Committee.
Maine	Yes	State Planning Agency.
Maryland	Yes	Soil Conservation Committee.
Massachusetts	No.	None.
Michigan	Yes	Soil Conservation Committee and Districts.
Minnesota	Yes	S&W Conservation Board and Districts.
Mississippi	Yes	S&W Conservation Commission.
Missouri	Yes	S&W Districts Commission and Districts.
Montana	Yes	Department of Natural Resource and Conservation and Districts.
Nebraska	Yes	Conservation Districts.
Nevada	Yes	State Conservation Commission and Districts.
New Hampshire	Yes	Water Supply and Pollution Control Commission.
New Jersey	Yes	Soil Conservation Committee.
New Mexico	Yes	S&W Conservation Commission and Districts.

State	Question No. 1	Question No. 2
New York	No	S&W Conservation Committee and Districts.
North Carolina	Yes	S&W Conservation Commission.
North Dakota	Yes	Soil Conservation Committee and Districts.
Ohio	Yes	S&W Conservation Commission and Districts.
Oklahoma	Yes	State Conservation Commission.
Oregon	Yes	Department of Agriculture through Division of Conservation and Conservation Districts.
Pennsylvania	Yes	Water Quality Commission.
Rhode Island	Yes	Conservation Committee.
South Carolina	Yes	Land Resources Conservation Commission.
South Dakota	Yes	Conservation Districts.
Tennessee	Yes	Conservation Committee.
Texas	Yes	S&W Conservation Board.
Utah	Yes	Conservation Districts.
Vermont	Yes	Natural Resources Conservation Council with provision to farm out work to other agencies.
Virginia	Yes	S&W Conservation Commission.
Washington	Yes	Conservation Commission and Districts.
West Virginia	Yes	Soil Conservation Committee.
Wisconsin	Yes	Land Conservation Board and Districts.
Wyoming	Yes	Conservation Commission.

SUMMARY OF 208 ACTIVITIES

SOUTHERN R[illegible]

Note: In some cases the plan states that the Dept. of Agric. is lead agency but have contracted with state committee to be lead agency.

Alabama.—Preparation of an '83 supplement to their statewide plan (agricultural portion) which will bring them up to date.

Arkansas.—Training program for district directors, employees and working with cooperators.

Florida.—Have had a $60,000 grant which they have been using and working out Memorandum of Understanding between Bureau, Dept. of Envt. Regulations, SCS and districts—all but 1 district has executed M of U.

Georgia.—Have a full time 208 man. Had some money that came through DNR and in '82 and '83 put on 25 demonstrations of BMPs which have been seen by 20,000 people. Also, water quality displays that ½ million people have seen.

Kentucky.—S&W Cons. Comm. lead agency, not only for agricultural but also for construction. Have prepared and distributed a BMP manual for construction and are currently preparing a BMP manual for agriculture. Documents that there is a noticeable increase in BMP particularly in construction.

Louisiana.—Have a couple of projects on lakes—trying to pin down what is polluting the lakes. Not much else.

Mississippi.—Are carrying out an extensive educational program which includes such things as distributing water quality brochures and showing slide shows.

North Carolina.—Not much going on.

Oklahoma.—Have identified 10 watersheds with nonpoint problems which are being surveyed to pin down exactly what problems exist. Will then develop management plans to solve problem and look for someone to help them out financially. Sediment has been the only thing identified as polluting—not herbicides or insecticides.

South Carolina.—Not much going on other than conservation tillage as a BMP.

Tennessee.—Have been diligently updating their agricultural portion of statewide plan. Conducting no till clinics and have been talking BMPs at district meetings—slide shows.

Texas.—Not much going on.

Virginia.—Have documented that there are 750,000 acres increase in cropland that is being adequately tried to cut down on sediment. Istigated a filter strip program. Districts in Piedmont are increasingly active in water quality. Districts have purchased and made available 25 no till seeders as BMP.

PACIFIC REGION

Alaska.—State Dept. of Envt. Conservation has allocated funds to soil conservation subdistricts for their review of conservation plans developed in the districts—checking to see whether BMPs are included. They pay the district $40 for each plan they review.

California.—Some RCDs were designated but basically develop theirs on selected basis. Work being done in selected areas through specifically identified RCDs.

Hawaii.—Plan is being implemented and Hawaii Assn. chairs a nonpoint committee monitoring 208 type programs. Hawaii Assn. president serves as chairman with various representatives from state agencies.

Idaho.—Commission is completing their planning phase. Eight projects identified and each has an implementation project underway. One being funded under RCWP and 7 under the state water quality cost share program. Need planning funds to proceed further.

Nevada.—Have salinity nonpoint program down by Las Vegas.

Oregon.—Have an RC&D project on dairy waste. Certain areas have irrigation water quality program and 7 state grants to districts for projects relating to water quality.

Washington.—Three projects—irrigated, dryland and dairy waste. Reporting all activities regarding water quality. Four projects underway being financed with public bonds—2 dairy waste, 1 dryland, 1 irrigated.

NORTH CENTRAL REGION

Indiana.—Note: Nothing but using section 108 money for demonstration projects.

Illinois.—Have a state soil erosion and nonpoint committee that is developing a long range plan, priority watershed committee, have a state cost share program but no money—using whatever federal funds they have.

Ohio.—Has similar program to Illinois. Note: Using Section 108 money for demonstration projects—44-48 counties involved.

Minnesota.—Good state plan—problem is that it is in their state water quality agency. No funds but good plan.

Michigan.—Nothing. Note: Using Section 108 money for demonstration projects.

Wisconsin.—Gary Williams, EPA, says Wisconsin has best program. Has $1 million plus in nonpoint program. Also have priority watershed program which involves land conservation committees. Going strong!

Missouri.—Instructed by water quality agency to secure funding for erosion control.

Iowa.—Do not have any particular program set up for nonpoint.

WESTERN REGION

Arizona.—Working on groundwater quality. It was ignored in other plans. Anticipated permit program relative to groundwater pollution. Surface water is not serious problem—reuse their water.

Colorado.—As direct result of 208 program, had planning regions approved by EPA—had a watershed project, project on irrigated land to cut water loss and stop salinity. Basically a concrete ditch lining project.

Kansas.—In process of reviewing the agriculture runoff portion of the 208 plan after five years of operation. Being assisted by EPA employee on loan for 90 days. Will report where they are in their plan: accomplishments, where they need to go and what needs to be done. This report will be given to the legislature in 1984.

Montana.—Funds are limited now. Have several streambank stabilization projects in operation. Crop production involving 15 districts, water quality and sediment control involving 2 districts. Every district has signed an agreement with water quality department, EPA and DNR.

Nebraska.—Nothing doing.

New Mexico.—Most contracts have been completed. One contract is still in effect involving toxic waste studies. Have booklet on sedimentation and erosion on forest land. Univ. of New Mexico was involved in element on BMPs on rangeland. Tracking system for implementation of conservation practices.

North Dakota.—Have 3 targeted watershed areas. State Health Dept. has an agreement with CDs to help finance ¾ of the cost of manpower to supply information of the BMPs to the area (involves 4 districts). State Health Dept. is designated water quality agency.

South Dakota.—Have 208 money available. Have 7 CDs involved. Money is used to hire a coordinator who contacts people and number 1 priority is lake restoration

techniques; also contact people about selling story of soil conservation, conservation tillage, any other information about conservation programs. ASCS also gives support. Are going to give statements and issue letters for July 19 hearings. Have learned that ASWIPCA leaning heavily towards issue. NALMS will also give testimony.

Utah.—208 plan is now called 205(j). Money has been distributed in grants to 6 agencies including Dept. of Agric. to implement and carry out their plan. All area of plans are the nonpoint implementation and all plans are oriented towards agriculture. Dept. of Agric. is very involved in nonpoint issue.

Wyoming.—Priority is stream water quality assessment with CDs. Not called 208—water quality management. Work on a 15 mile creek which is a tributory to Big Horn River. Another project—Final Water Quality Assessment on Salt River—involves Star Valley CD, SCS, Wyoming Fish and Game Dept. and ASCS. Another one—Bitter Creek water quality assessment involving 2 counties—and another at Big Sandy River.

NORTHEAST REGION

Connecticut.—Agric. enforcement activities. Requirement for permits. Groundwater management program. Erosion and sediment control program.

Delaware.—No, but working on it. New Castle Dist. has an approved plan but not a statewide plan. Have hired a specialist under 208 who works with DNR and Extension Service.

Maine.—Nothing going on.

Maryland.—Agric. plan has critical areas designated: RCWP project, clean lakes program. Each county has their own critical area where they target their emphasis. ACP special project and reactivating 208 technical team to tackle Chesapeake Bay.

Massachusetts.—Nothing going on.

New Hampshire.—Voluntary compliance with BMPs for normal agric. activities. Education and conservation advice to farmers. Maintain water pollution control.

New Jersey.—Ongoing ACP program, 2 PL 566 land treatment projects, increased emphasis on large soil loss areas.

New York.—Whole thing was not approved but agric. portions were approved. Looking to find out reason for non-approval and get it going.

Pennsylvania.—As of September 1979. Assessment of nonpoint agric. pollution involved with erosion and sediment control evaluation program. Develop plans to carry out first agric. assessment on nonpoint.

Rhode Island.—No new projects other than the existing programs—watersheds and CO-1.

Vermont.—P.L. 566 project underway, RCWP and RC&D.

West Virginia.—Not one big statewide project. Broken down into 4 areas: agric., forestry, conservation and mining. State committee in charge of agric. portion. Emphansis by CDs has been to increase the BMPs by 10 percent each year for the last 3-4 years and are still working on this. Also have watershed projects.

PRINCIPLES ON THE CONTROL OF NONPOINT SOURCE POLLUTION

1. While Encouraging Progress Has Been Made to Date in Controlling Nonpoint Source Pollution, Additional Effort Is Needed to Work Toward Achieving the Goals of the Act

The Clean Water Act's Section 208 planning process was instrumental in fostering the development of state programs to address nonpoint source pollution. As a result of this effort, much attention has been focused, since passage of the Act in 1972, on devising programs and practices to control nonpoint sources. Nevertheless, on many water bodies nonpoint source pollution remains a significant problem. Consequently, additional federal and state emphasis should be placed on the control of nonpoint source pollution.

2. Completed and Approved Section 208 Plans Should Serve as the Springboard for Additional Efforts to Control Nonpoint Source Pollution

State plans developed through the Section 208 process in most cases represent the most comprehensive available assessment of: (1) nonpoint source problems; (2) needed controls; and (3) viable institutional arrangements for implementing these controls. While the Section 208 data base will need to be updated, augmented and, in certain areas, modified, any new initiatives designed to address nonpoint sources should build upon what we have already learned through the Section 208 planning process.

3. Primary Responsibility for Developing and Implementing Nonpoint Source Controls Should Continue to Reside at the State and Local Levels

One important finding of the Section 208 effort is that the nature and variability of nonpoint source problems and needed control measures, dictate that control programs must be developed and implemented at the state and local level. Resource, personnel, and technical limitations make direct federal implementation of nonpoint source control programs infeasible. Consequently, even in cases where states are, for some reason, unwilling or unable to act, direct federal imposition of specific controls is not viable.

4. States Should Be Afforded Broad Flexibility in Developing the Types of Nonpoint Source Control Programs that Address the Particular Problems in Each State

Because of the variability of nonpoint source problems from state to state (and within states), EPA has adopted a policy of providing the states with considerable flexibility in controlling nonpoint source pollution. Important components of this policy include the flexibility to develop: (1) different types of control programs, both regulatory and nonregulatory; (2) schedules for achieving implementation milestones that reflect the necessary differences in control programs; and (3) economically and technically feasible best management practices that will be applied in a site-specific fashion. This policy is an essential element of any new initiatives to address nonpoint sources. States should not be bound to: (1) a particular type of program; (2) a uniform, national compliance schedule that is not keyed to the state program; or (3) a specific set of practices that are not site-specific in application.

5. The Federal Government Does Have an Appropriate Role in Fostering the Development of Nonpoint Source Control Programs

While the implementation of nonpoint source control programs should remain a state and local responsibility, there is an appropriate role for the federal government in this process. EPA should: (1) continue to review and approve state nonpoint source control programs; (2) provide financial support to states to assist in the implementation of nonpoint source controls on those water bodies where nonpoint source pollution is causing water quality problems; (3) serve as a "clearing house" for the transfer of information on successful implementation programs at the state level; and (4) assess the progress being made and keep Congress abreast of needed changes to the federal strategy for dealing with nonpoint sources, including recommendation of appropriate sanctions or remedies where nonpoint source controls are not being implemented. The U.S. Department of Agriculture should also provide technical assistance, where appropriate, to assist state implementation of nonpoint source control programs. All federal agencies should work with states to make their programs consistent with state nonpoint source control efforts.

6. Federal Financial Support Is Necessary To Encourage the Implementation of Nonpoint Source Controls

Given the current limitations on resources at the state and local levels, federal financial assistance will be essential to: (1) help states refine implementation plans, where necessary; (2) implement education, training, technology-transfer, and other programs designed to get best management practices implemented on the ground; and (3) in some cases, cost-share the implementation of best management practices.

7. Positive Initiatives, Rather Than Financial Sanctions Against Nonpoint Sources, Will Have the Greatest Impact on Improving Water Quality

The element of compulsion injected by proposals for financial sanctions conflicts with current EPA policy under Section 208 to foster cooperative programs to implement nonpoint source controls. Experience with the Section 208 program suggest that an approach which emphasizes education, training, and incentives—both financial and institutional—offers the best chance of success, especially in dealing with rural nonpoint source problems. A controversial sanctions program may make states reluctant to honestly identify problems and develop control programs. Any additional initiatives should thus, emphasize incentives rather than sanctions.

8. New Efforts to Deal With Nonpoint Soruce Polution Should Concentrate First on Implementation to Address Known Problems

There is still much to learn about the relationship between the implementation of best management practices and improvements in measures of ambient water quality. Data gaps also exist in determining natural background levels of some nonpoint source pollutants, and quantifying the impact of long-range transport of pollutants as part of the bedload that already exists in most stream systems. New nonpoint source initiatives should be designed to assist states in implementing best manage-

ment practices to deal with known nonpoint problems on priority water bodies. The positive thrust of initial implementation efforts should not be confounded by attempting to address issues where insufficient decision-making data exist, such as: (1) nonpoint source compliance with water quality standards; and (2) resolving interstate conflicts over long-range transport of nonpoint source pollutants.

Mr. ROE. We'll hear first from Mr. Potter who has waited for 2 days to testify. I think you've earned that right.

TESTIMONY OF HON. NEAL POTTER, COUNCIL MEMBER, MONTGOMERY COUNTY, MD., ON BEHALF OF THE NATIONAL ASSOCIATION OF COUNTIES; HON. WALTER ROCKENSTEIN, CITY COUNCIL MEMBER, MINNEAPOLIS, MINN., ON BEHALF OF THE NATIONAL LEAGUE OF CITIES; AND NEIL SAMPSON, EXECUTIVE VICE PRESIDENT, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

Mr. POTTER. Thank you very much, Mr. Chairman. We've been very patient because it's very important to us, and I have observed at length your patience, diligence, and knowledge of the subject, and I appreciate it deeply.

Mr. ROE. Thank you. May I make this statement: All of your statements will appear in full in the record; if you choose to summarize them, that will be fine.

Mr. POTTER. I had assumed that, and we will submit our statement for the record, and therefore I will try to summarize the main points that have concerned us so much.

Basically we've been strongly in support of the clean water legislation since 1972. We've been very active and have tried to supply every support we could in Congress and in working with the EPA.

Since 1980, however, we have been discouraged by a trend toward diminished support for the construction grants program in the face of inflation; the appropriations have gone way down throwing a heavy burden on our taxpayers and ratepayers.

We feel that the national commitment can be maintained only through a major increase in the authorization above present levels, and second, in order to economize in a tight period in financing, to focus the effort on the critical problems where there are immediate enforcement actions threatened by EPA or where other monitoring has indicated a severe problem.

That focus could save a lot of money and do a lot for the water quality problems about which we are all worrying.

We feel that in 1972 there was basically a covenant, a declaration of national purpose in which Federal enforcement was accepted but that a shared responsibility was recognized as part of living up to that national commitment. That recognition of a problem that had existed and gotten more severe through the decades.

And we feel now that the Federal Government is withdrawing from that covenant, and unless the enforcement process and the deadlines are to be waived, as they may be if we go on at present levels of support, we're into deep trouble.

We feel that it cannot all be put on the ratepayers. Water and sewer rates can triple; in fact in some cases I think they have increased tenfold to the point where people were failing to pay their bills, were simply disconnecting. They would rather bring in the

water in buckets than try to pay for the cleanup which is imposed by Federal standards at this late date in the growth of our areas.

We also feel that it is fair to have a national tax support, financial support for the improvement. I think the lady from Wisconsin indicated some of the reasons very well. There are downstream people. It's community wide benefit, and a communitywide neglect that has led us to the present situation.

But we also want to emphasize the deadlines that are now in the law. The 1988 deadline for meeting water quality standards is virtually upon us, and unless we can increase the annual Federal commitment to the $5 billion level, then EPA's own inventory of EPA responsibilities, which come to about $30 billion in recognized problems, $5 billion a year would be a minimum to get close to it in 1988.

We don't feel it can start in 1985 because these are large, slow moving public works projects in many cases, and if you start in 1985 and 1986 there is no way you're going to make it by 1988.

Five billion dollars a year starting as quickly as possible is a minimum commitment to achieve accepted obligations.

Our recommendation, we feel, is consistent with the amendments to the Clean Water Act proposed by Chairman Howard in H.R. 3282. That would authorize $4 billion for 1984 which we feel is barely enough; $4.5 billion for fiscal year 1985; and $5 billion for fiscal year 1986 through 1988.

And we hope it can at least do that.

We are also saying that you might look at the degree to which the States have been focusing their efforts in commiting the funds allocated to them in an expeditious manner to meet these deadlines.

We feel that section 216 responsibilities may not have provided enough focus; you may want to examine that.

We also feel that you may want to look at the problem of directly providing Federal funds to some local problems. I think this could supplement the State efforts, provide a better focus in some cases than the States may provide, because these are often interstate waters, or the State may not have enough to devote to the problems that are most critical on a national basis.

Finally, I would like to say that we're very worried about the enforcement actions as well as the quality of the water. And we feel that therefore, the Congress should recognize that unless the funding is greatly increased, EPA is going to move into some enforcement actions, or Congress is going to have to withdraw EPA's powers and commitments to the improvements that we have all accepted.

We don't want to get into a position of having to urge postponement of those deadlines or removing of those commitments, and yet in terms of our financial capacity and the increased burdens that are involved in trying to come anywhere near these deadlines, we feel that would inevitably grow out of a failure to commit more funds this year to the needs that we all have.

Let me say also that postponement means dying rivers, lakes and of special concern to us in this area, a dying bay. You must have seen some of the articles I've heard mention today concerning the situation in Chesapeake Bay.

If we simply postpone these things, the bay is going to die. It's in critical condition in many areas already as you have no doubt read, where the fish habitat is getting lost, the fish population is getting lost, and a very important national natural resource is in deep trouble. And postponement can only bring it past the point of no return for a long, hard restoration process.

Now, I've emphasized very much the sewage treatment plant grant program. I don't want to imply in that that they are the only source of the problem. In Chesapeake Bay it is by no means the only problem.

But I have emphasized this because it is an ongoing program, a commitment, and we're faced with enforcement actions if we don't enlarge that program, that whole business of the commitments and the construction schedules are going to be hopelessly lost.

But we certainly do support greater effort on the nonpoint source program.

The immense studies which EPA and others have gone into on Chesapeake Bay in the past half dozen years have indicated that nonpoint sources are probably a majority of the problem. They're by no means all, but we have certainly got to work on both areas of the problem if we are to achieve water quality goals and, indeed, save the bay from a sad state of decay.

I guess that's enough summary. Thank you very much for all you're doing on these problems.

Mr: ROE. Mr. Rockenstein?

Mr. ROCKENSTEIN. Thank you, Mr. Chairman. I am Walter Rockenstein, a council member from Minneapolis, Minn., testifying on behalf of the National League and the 15,000 cities it represents.

I, too, am going to summarize my written statement, and thank you for the opportunity to have that in the record in its entirety.

I would like to first summarize the league's general position on the act and then comment on specific provisions.

First: We don't think that there can be any question that the Clean Water Act has resulted in significant improvements in water quality and public health.

Second: We want to underscore the importance of uniform and enforceable national clean water standards.

Third: We believe that the cost of compliance with the act, while large, represents a very cost effective investment in the Nation's future.

I will now turn to the specific provisions of the act which we believe should be considered for provision.

First: Funding for the construction grants program. As you are well aware, and in fact as the previous witness has pointed out, the funding for this program has been reduced by some 50 percent since 1978. Further and more damaging, the Federal share of construction costs for publicly owned treatment works will drop from 75 percent to 55 percent beginning in fiscal year 1985.

We continue to oppose these changes. The ability of municipalities to comply with any clean water program is contingent upon adequate funds for building treatment facilities. We support Mr. Howard's proposal which recognizes this relationship by providing for increased funding for this vital program.

We recognize the budget constraints facing the Federal Government. Those same constraints exist at the State and local level as well. If Federal funds are not available to support the requirements and objectives of the act, then timetables for meeting these requirements should be extended substantially.

We also believe that cities must be encouraged to proceed toward water quality objectives regardless of the current status of Federal funding. Therefore, to encourage municipal self-help, cities that prefinance water pollution control programs must be assured priority for reimbursement of the local funds advanced.

Turning to our second specific position, the National League of Cities believes that Congress should authorize EPA to establish pretreatment standards only for those industries EPA has classified as major polluters and only for those classes of toxic pollutants which are known to be widespread which may be causing human health and aquatic life problems.

Concurrently, EPA should have the authority to exempt from the pretreatment program those POTW's that can demonstrate that they are not interfering with the designated use of the receiving water.

However, such local standards should not become a loophole for avoiding national requirements. Therefore, any such amendments should require, 1, compliance with the national pollutant discharge elimination system conditions; 2, development and implementation of local standards that are, in the aggregate, equivalent to national standards; and 3, the maintenance of an adequate local monitoring and reporting program to protect the receiving waters.

On the specific issue of nonpoint source pollution, the National League believes Congress and the administration should proceed expeditiously through expanded research and development, technical and managerial assistance and funding, to aid the efforts of local and State governments in the control of nonpoint sources of water pollution.

In addition, section 201 of the act should provide for the funding of localized nonpoint source abatement measures identified as priorities, in approved and certified 208 plans.

Turning to the Federal common law in the act, frankly, the interaction of Federal common law and the Clean Water Act remains a confusing legal tangle for most municipal officials.

Last year, we tried to step away from this and review the issue from the perspective of the injured party and the injuring party. We ended concluding that no municipality injured by a willfull or negligent violation of Federal or State law should be deprived of a remedy if one exists under the Federal Water Pollution Control Act or other appropriate laws, and that further, where the violator presents as a defense acting "in good faith" or in compliance with EPA or State permits, that the injured municipality should be able to make the EPA a party in any lawsuit it should choose to bring under the act or under Federal common law.

On the issue of toxic sludge, the League of Cities is only now in the process of developing a detailed policy on the use and disposal of toxic sludge. Our current policy calls for EPA to support research on the problems arising from the management of waste water treatment facilities in general.

We also believe innovative and alternative treatment technologies have not been used to their fullest potential, and that Federal research, development and public education concerning these technologies should be expanded.

On the water quality standards issue, the NLC Energy Environment and Natural Resources Steering Committee is recommending to the National League a policy that parallels the provisions of H.R. 3282; namely, the steering committee is recommending that we prohibit States from downgrading or revising standards where designated uses have been attained, permitting a revision of the standards of the State can demonstrate that the existing designation is unattainable because of natural background, irretrievable man-induced conditions, or third, because attainment of the designated use would result in substantial and widespread adverse economic and social impact.

We hope these suggestions would speed attainment of the Clean Water Act's important goals. Again, I appreciate the opportunity to present the National League's views before the committee.

Mr. ROE. Mr. Sampson.

Mr. SAMPSON. Thank you, Mr. Chairman.

My testimony will be around agriculture nonpoint sources, H.R. 4037.

Rather than read my statement or summarize it, I would like to digress from the written statement and talk about some issues that have come up in front of the committee today.

It seems to me that in the agricultural nonpoint area, how one perceives the problem will dictate how one perceives the approach to solution.

If, as we've done under other aspects of this law in the past, we perceive the problem as one of being a clientele in the States, local agencies, and the agriculture community that is reluctant to move ahead, then you move one way. If, on the other hand, you perceive that there is a tremendous desire built up out in the countryside to get at the implementation of some of the clean water practices that have been identified over 10 years, then obviously you can use another tool.

I'm here today to tell you that we perceive the issue in the latter fashion. We find a great deal of desire in rural American to get on with the water quality projects that have been identified in 10 years of looking at this issue.

In 44 States, as the appendix to our testimony shows, there is some activity going on. It's funded from a variety of sources. It exists in a variety of forms.

But this is a tremendous amount of activity, it seems to me, in the face of a lackadaisical, almost nonexistent push from the Federal Government in the last 3 to 4 years on this issue.

I think that speaks to another question. It's my understanding that Mr. Ruckelshaus has exhibited some reluctance about including cost-share as a part of this program on the basis that anticipation of some cost-share would essentially cause people to stop and wait until the funds became available.

A look at the record argues against that. In 1977 this committee put section 208(j) in the Clean Water Act, which promised cost-sharing for the installation of agricultural nonpoint source control

practices across this country. The appropriations process did not agree, and to this point we've had no funds for this program.

But tremendous activity is under way in conservation districts, local municipalities, counties, agricultural organizations, and other organizations to address nonpoint source implementation in the last few years, and this has happened in spite of the fact that that anticipation for cost-sharing was there, and was never met.

So the existence of cost-share promises, and the fact that there's never enough money to go around, and that somebody's always waiting, has not, slowed this up.

As to whether or not there needs to be cost-sharing, I think the record is fairly clear. The localities and the States that have been moving ahead have almost universally seen the need for some cost-sharing as a part of this.

But, we don't have to buy rural America. The amounts of money are not staggering. It is unfortunate that we have people saying that if we were to start from zero and put everything on the land that was needed that we would need multibillion-dollar commitments. That may be true if you decide to operate that way, but you don't have to operate that way.

Right now, we have demonstration projects funded in the range of $50,000 for an entire county that are making significant impacts on water quality. These projects are encouraging such things as conservation tillage, better management practices on the part of agricultural producers, and some specific water cleanup efforts that need to be made after other good management has been applied.

There's a very important point to be made here. If there were not an active soil conservation program in this country you couldn't afford nonpoint source pollution control no matter how you went about it.

Nonpoint source pollution control has to piggyback onto a good active soil conservation program. By the same token, let's be very honest about something. A good soil conservation program that deals with agricultural productivity and soil erosion may not do enough for water quality. It may not do the right things for water quality and it may not do enough.

So it takes both. It takes a good active soil conservation program, but it also takes an emphasis on water quality. So it seems appropriate for the Clean Water Act, through EPA, and through State water quality agencies, to give that last impetus to communities, conservation districts, and counties, to tack water quality practices on the top of their other good management programs.

Mr. Chairman, there was one other issue that came up and this was the nonpoint source versus point source debate.

In my personal judgment, that issue cannot be decided on the basis of whether or not you can find the source of pollution. Clearly we can locate nonpoint sources, and we can both measure their degree of contribution to water problems and identify what needs to be done to alleviate or prevent them.

The difference is whether that is a pollution source that is in its essence most likely to be best handled by treatment or most likely to be best handled by prevention.

Nonpoint sources, as we find them, are almost always best handled by preventive methods. We simply can't regulate the wind and the rain and the activities of all those people out there.

We have to educate and provide the incentives so those people will apply the kind of preventive conservation management that gives us the best chance to keep high quality water as one of the parameters in the rural environment.

We appreciate the chance to come here. We appreciate all the work that you've done, and we strongly support H.R. 4037. We've listed two or three specific points for possible charges that we would bring to your attention. We thank you for that opportunity.

Mr. ROE. I want to thank you all for your testimony and again I regret that we didn't have enough time to go into more depth.

It's ironic in a way, because Mr. Sampson, when you speak of the soil conservation, that has a connotation of rural. Mr. Potter and Mr. Rockenstein are speaking to the issues of the urban. So the urban runoff has specific relationships that we've discussed with other witnesses.

What do you think about the idea where States have been making advances under the 208 work and were able to break down in what was previously considered to be nonpoint sources. They have been able to identify where they in effect had a conversion into a point source. What do you think about the idea of making them eligible under the basic program? Giving the States more latitude in that direction?

I would consider those primarily to be hot spots that could be cleaned up.

Mr. SAMPSON. That's been a pretty difficult issue. You may recall some of the earlier problems we had over irrigation waters, whether they were a point or a nonpoint source.

The problem arises because of the preventive versus the treatable thing.

Mr. ROE. But we have both to deal with.

Mr. SAMPSON. Absolutely. I have a feeling, though, that given the 10 year or more history on those issues with the agricultural and forestry communities, there would be a great deal of uneasiness about the ability for a State to sort of arbitrarily start grouping what were formerly nonpoint source pollution sources. If they could find enough of them in one place or group them in some way, and then say, they're a point source that come under the permit system or another regulatory program, our people would object.

Mr. ROE. No, we're trying to break new grounds. There are one or two directions to take on this bill. We can either fool the American people and make the extension for 2 years and add a lot of other jibberish and so forth and so on. Money is the issue that Mr. Potter spoke to. If we get enough money in there we'll be able to get the job done. That's one approach.

But we know from a factual point of view that unless we make some substantive readjustments along the line, we're not going to clear up the pollution. We know that's so.

When we talked about the Chesapeake Bay issue earlier and went through that, we know that unless you deal with that nonpoint source issue, it's not going to clear up the Chesapeake Bay. It's that simple.

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So therefore, we can isolate, we can come and say let's do more research and study. We spend $35 million on that bay and now we've got a special tack-on to the legislation for Naragansett Bay because Senators are powerful in those areas, and whatever. That is not going to solve the problem.

What I'm trying to come back and do, for example, and I don't want to take all of your time, but we know that in the city of Patterson which is in my district—I know it like the back of my hand and every alley and bypass that exists in that city, and 99 percent of the people—that unless you eliminate the combined sewers we are wasting our money.

Now, for some reason that's a hangup to people in the Senate. And for that matter, some people in our own area, in the House.

But we know that that's a thing that ought to be decided by that city and ought to be decided by that county and ought to be decided by that State. Because that is not an indigenous thing throughout the Nation; it is peculiar to older cities. They were built that way.

So I fight vehemently and vigorously and intend to do all I can to see that Washington gets out of the way of that issue and says to New Jersey and the cities, Boston, and Massachusetts, and so forth, if that is part of your nonsource problem, then you have the right to deal with that and correct it as part of a system. Because that's what it is.

But if we say the same thing, now, when we developed to the water resources development bill, some members from West Virginia came in and said well we ought to be considering cleaning up of the acid mine sites as part of a public water resources project.

They're not all wrong, just as much as somebody comes in from California or Florida, and says, we have a flood control program. We built on the flood plain, the whole bit. This litany goes on and on and on.

And then we try to discern and some of the members here, including myself, got a little bit annoyed with that issue. We said well why should, after a private enterprise has come in and has exploited the country, exploited the lands. They're strip mined or they went into their—you know, took out all their coal and so forth, then left the scarred Earth for the rest of the population to clean up. They took the profits out of it.

But when we're done with all that emotion, that doesn't solve the problem. So therefore I have to admit to you that I have tempered my emotion on that issue. I'm trying to get at a point that if we can identify in the rural relationship of mine tailings and if we can identify that within an agricultural area there's been some mining that's gone on and there are some point source. If we know that its point source, and we know that we've got a problem emanating from that area, would it be so wrong for us to have States under the 208 program identify those particular items as hot spots, and contributing more than 1,000 acres of farmland? And could we not treat them under the grant program?

If we go back—and then we're treating both urban and rural issues, getting some kind of a balance.

Mr. SAMPSON. If I could, I think what you have done is define the question in a way that I can't argue with. My home State of Idaho, for instance, passed legislation to allow rural nonpoint projects to

compete against urban point source projects for the State construction grants program, and they've now put $7 million into rural nonpoint source projects by simply making them eligible to compete.

Mr. ROE. Has EPA approved that?

Mr. SAMPSON. That's State raised money.

Mr. ROE. Not Federal money?

Mr. SAMPSON. It's State money. It's the way they've treated their State money.

Mr. ROE. If the gentleman would yield. Are you saying that that is the grant money going into Idaho?

Mr. SAMPSON. It's the State's portion.

Mr. ROE. The Federal portion of the State's grant money?

Mr. SAMPSON. It's the State's portion.

Mr. ROE. But it's Federal money?

Mr. SAMPSON. It's State match money. It's the State appropriated money that matches the Federal grant.

Mr ROE. That came out of the State money.

Mr. SAMPSON. Yes.

Mr. ROE. So it's not Federal money yet.

Mr. SAMPSON. Not yet, but there's no reason why it couldn't be. What you said is that you've given them the latitude to treat it under a different portion of the program; not that you've redefined a certain pollution area from nonpoint to point, which is what I thought you said to start with.

Mr. ROE. No, no, no. I'm saying by having followed what they have been talking about in Wisconsin and other witnesses, they have advanced their work in the 208 area. They have determined now that yes, we can identify 3 or 4 or half a dozen or 10 items within that nonpoint source universe, that yes, are point sources. Why should they not be eligible?

And you're coming back and saying the State of Idaho has recognized that and has used some of their State money in turn.

Let me ask another question. Anybody who wants to answer may. We're talking about what happens, and a lot of the testimony has come through from Mr. Ruckelshaus and citizens and groupings, when the Federal Government gets into the act, vis a vis the financing aspect of it. That is a deterrent to the program, in their observation, because people then wait and say well, we're waiting for ourselves to come up on the priority list. We're waiting for the Federal money before we move ahead.

There is nothing in the law—albeit the point of view that the 75 percent grant, the 60, and then the governors can establish a uniform 55 percent—that mandates that the States have to put up a representative share of the money.

That could all come from local. Some States don't have, as I understand it, any State program. Should we be coming back and either providing a bonus or something of that nature for States that implement and provide State money for matching money back to their counties and their cities?

Mr. POTTER. I think that could be helpful. I think that the States have generally opted out of this, although my own State of Maryland has provided good matching funds.

Mr. ROE. My State, too.

Mr. POTTER. I think when the percentages are as low as in the case of the Federal Government, 55 percent next year, that the incentive for waiting, particularly when we're faced with these near deadlines of compliance, is not very great.

I think that there are two responses that the legislation might make to deal with the problem of waiting. One is to require that funds be committed quickly and the other is cut the eligibility list but provide for repayment where advance commitments are made. I think one of the previous witnesses has mentioned that that could only be fair, and it would diminish the incentive to wait.

Mr. ROE. I didn't miss that point in your testimony. You see, there's a section in the law that provides for that now, but regrettably the Appropriations Committee would never allow it to be implemented.

In other words, we recognize that. We said, well why deter the States or cities from moving ahead? If they want to put up advance money on a commitment, covenant, somebody used the word, and advance some money and then pay them back over a period of time.

Well, the Appropriations Committee has never funded that, which is regrettable.

Mr. POTTER. It's most unfortunate, and that does encourage waiting for the Federal funds.

Mr. ROE. And you made a very telling point in the point of how much can the average citizen bear as far as sewer charges are concerned.

For some of our senior citizens' developments and so forth, the charges have gone to seven and eight hundred dollars a year. There's no way on social security they can pay that.

Mr. POTTER. And where you go to tertiary treatment standards in a small plant, as I said, it can increase the rates about ten fold, and very few people can afford it.

Mr. ROE. The gentleman from Minnesota.

Mr. ROCKENSTEIN. Mr. Chairman, I was going to say since we had already mentioned it in our testimony that the guarantee of repayment would be, I think, of considerable importance. And it is unfortunate that has never been funded.

The other problem that I think is affecting many of the cities, is whether those that had covenanted and gone ahead would be protected from the reduction of 75 to 55 percent?

If in the future that might go to 45 percent, why would you covenant and set up your bond schedules and all of that, and then have that percentage adjusted on you.

Mr. ROE. I don't fault you at all, sir. Having been a mayor of a community and headed up a county government, I know precisely what you speak to.

Regrettably, the attitude around here is, and this is no effrontery to our members, that quote unquote, no legislature can commit itself beyond its life. That's the general attitude.

Now, I don't know how anyone can make a covenant, looking down the future, and have we broken faith with the American people? Here was a dream to get to the Moon, but we put up the money to get there. But here is a dream to clean up our water

supply so it's safe for the people of the Nation—literally 90 percent of our bodies of water.

If I were king, I would ordain this tomorrow morning, and it would be done as the top priority of the Nation. But somehow we have to use all of the best brains we've got in this country, including yours, and say how do we build up that understanding in the Congress.

Let me say this, and pardon my emotion involved here. Every Member of this House is up for election next year and a third of the Senate. And one ought to come back and say to one's Representative, well, where do our priorities truly lie?

You understand what I'm trying to get at? That's something you can carry back home to your folks and say to your representatives, hey, look, we think—Mr. Sampson made that point in part, obliquely in a different way. You said that from your experience out in the field, you've been finding that the American people are saying to you what can we do? Let's get on with it. We want to do something about that.

The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman. I have a question for all of the members of the panel to respond to. The Administrator of EPA expressed concern that an incentive program of grants or other funding for nonpoint control might act as a disincentive to voluntary action. Folks would be more prone to get in line for the dollars and not act unless they got their share.

Would you please give us your perception of that problem and how it could best be dealt with? Or do you see it as a problem?

Mr. ROCKENSTEIN. Mr. Stangeland, I think that will very much depend, frankly, on the circumstances of a given city, because cities do have nonpoint source pollution problems.

I can think of Minneapolis where we have several of our lakes wholly within the city which are subject to nonpoint source pollution problems: the stormwater, drain runoff from our streets.

While we would dearly like to have Federal dollars to help us with that, they have not been available and we have proceeded.

We have programs underway. I don't think we are at this point simply going to cut those programs off if you provide some Federal incentive money.

We may at the time that it's appropriate take an additional step that we wouldn't otherwise have been able to fund, but we're certainly not going to step back from the steps that we've taken so far.

Those lakes in our city are too important to us. Over the last 20 years in our city, we've going so far as to separate our entire sewer system. We're 85 percent separated, in order to get at the problem of combined sewer outflow. Now, that's partly smart for us because then we don't have to treat all that water at the treatment plant. But it's creating a nonpoint source of pollution for the river, for the Mississippi River, which we will eventually have to deal with.

We are now looking at how do we deal with that nonpoint source of pollution. We are not going to stop because the Federal Government puts incentives out.

I guess I concur with the other witness. People want clean water. They are driving their representatives at the local level to clean

water. Simply because you offer a Federal incentive, I don't believe, we'll stop that drive for clean water. It may cause us to do different or better things because there are more funds, but it's not going to stop the drive for clean water, at least not in Minnesota. I think you would be very well aware of that.

Mr. POTTER. Let me add that. I agree with that, but I think it depends on the situation. In the case of the Chesapeake Bay, I think there's no question that Maryland feels the situation is so acute it must proceed. You perhaps have seen some of the Governor's statements. We'll have to have an increase in income tax to deal wtih this, among other problems.

But we're not as sure that Pennsylvania, for example, that doesn't have the problem internally, but is contributing to the problem enormously, would necessarily move ahead on that problem, and I think it probably has to be combined, not only the Federal commitment to some funding, but to some standards, that there has to be a program, as there is on the treatment plants to get on with the job for those who don't have the incentive on their doorstep.

Mr. SAMPSON. I testified earlier that you did in fact pass section 208(j) of this act in 1977 which did promise funding. That funding never materialized, and yet the tremendous activity we see around rural American today in terms of agricultural nonpoint sources has developed in the face of unmet anticipations.

So it seems to me that that record indicates that there is a desire and a commitment to move ahead.

From an agricultural nonpoint source point of view, I worry about people who think we're going to have to spend tremendous amounts of money in rural America. I think some money is absolutely necessary, and certainly some Federal incentive and policy priority is necessary.

We've got conservation districts running conservation tillage demonstration programs in your State and others today that are finding that farmers are perfectly willing to go ahead if they're given a chance to cut the risk of conversion by having some of the specialized machinery to rent, by having some of the real technical questions answered and available, and by having the encouragement that it takes to get into a new technology.

And we're finding runoff rates on those fields dropping 90 to 95 percent with commensurate drops in soil erosion and therefore the pollution that's associated with that soil movement. That's happening, not because we have all that much money to spend, but because it is good business. It's good business on the farm; it's good business in the community, and the fact that we're showing people that it's good business is having a salutory effect.

I don't want to pretend we can clean up every problem with demonstration projects. We truely can't. But we can make tremendous amounts of gains. Some cost sharing will be positive help. We'll never have enough money to do everything, no matter how big the appropriation. And I don't think that fact is going to be any deterrent to progress.

I think Mr. Ruckelshaus is wrong, in other words, on that assessment.

Mr. STANGELAND. Mr. Sampson, I would ask the same of you that I asked of the head of the Soil Conservation Service. Would you analyze the ACP programs, to determine how they could be better used towards conservation as opposed to production. A lot of ACP programs have been geared to production rather than conservation.

And perhaps you could give us your analysis in writing at a later time of some programs we might think about that could better utilize ACP moneys to be a more effective incentive to encourage farmers to participate in a program that will reduce nonpoint source pollution.

Mr. SAMPSON. I would be happy to provide that.

[Subsequently, the following was received from Mr. Sampson:]

NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS,
Washington, D.C. November 18, 1983.

Hon. ROBERT A. ROE,
Chairman, Water Resources Subcommittee, House Committee on Public Works and Transportation, Rayburn House Office Building, Washington, D.C.

DEAR CHAIRMAN ROE: At the hearing on November 16 relative to the Clean Water Act Amendments, we were asked to respond in writing to two questions.

First, we were asked for our ideas on how the regulation preparation process at EPA could be accelerated. This is a difficult question. One process which we have found to be helpful with other agencies is to hold open meetings with interested parties early in the preparation process way ahead of the publication for public comment. This gets outside input into the process early and allows an opportunity to resolve controversial issues ahead of time on a cooperative basis rather than on an adversarial basis. The process helps to preclude the possibility of the regulation writers working in a vacuum.

An important part of the regulatory process is the public comment period. We find that this period should be at least two months in length.

The second question posed to us was our thoughts of how the Agricultural Conservation Program (ACP) could be changed so that it would be more helpful in addressing agricultural nonpoint source problems.

As background, we would remind you that the ACP has already been significantly changed over the last decade to address nonpoint source problems. Five of the 26 practices in the national handbook are now designed for specific water quality benefits. These are either entirely new practices or re-designed conventional practices.

Additionally, it is estimated for fiscal year 1981 that 37 percent of ACP funds went into these five water quality practices. Many of the conventional ACP practices have water quality practices. Many of the conventional ACP practices have water quality benefits. For a program originally designed as an erosion control cost-sharing program, it appears that the shift to water quality purpose has already been significant.

Many of the ACP practices have been primarily improved management practices which are cost-shared at a very low rate as an encouragment to adoption for a few years. Once these management practices are fairly well accepted by farmers, the practice is dropped from the cost-share program and other priorities are addressed. This approach has been very successful with practices such as conservation tillage.

The real problem with ACP has been the funding. The appropriation has remained at $190 million for more than a decade. Therefore, the buying power of the program, and thus effectiveness, has suffered.

We hope this letter is responsive to the questions presented at the hearing.

Sincerely,

NEIL SAMPSON, *Executive Vice President.*

Mr. STANGELAND. Mr. Rockenstein, to what extent is nonpoint source pollution a problem in the cities, compared to point source pollution, in your estimation or in your experience in the Twin Cities?

Mr. ROCKENSTEIN. Representative Stangeland, I think it is the experience of our committee and members of our committee that the more pressing problem for most of us is the point source and that's because of the necessity to build the publicly owned treat-

ment works to separate sewers where they are combined. Those are clearly more expensive and more of a drain on our budget even with the 25 percent match than would be attacking the nonpoint source pollution problem.

But as we get better at that we're going to leave behind the nonpoint source pollution problem which cities will have to address. In Minneapolis-St. Paul we've got a good treatment works. We are—at least in our city—we're 85 percent separated, and as we finish our repaving projects, we'll complete that separation, and then we will be faced with the nonpoint source problem.

But in terms of immediacy and cost, it is point sources that are the most concern to cities.

Mr. STANGELAND. Minneapolis and St. Paul is a joint metropolitan sewer district?

Mr. ROCKENSTEIN. It's a seven county metropolitan sewer district with headquarters in St. Paul.

Mr. STANGELAND. We were questioning that yesterday when AMSA was testifying because we saw St. Paul listed but not Minneapolis, and I said I sure that was a combined situation.

Mr. ROCKENSTEIN. Yes, it's the Metropolitan Waste Control Commission, which is headquartered in St. Paul.

Mr. STANGELAND. I have no other questions for this panel. I just want to say that I'm sorry that I couldn't be here. I had to testify before another committee on Indian land claim matters, Mr. Rockenstein.

I just want to say that Mr. Rockenstein has been an extremely highly respected member of the Minneapolis City Council, recently retired.

Mr. ROCKENSTEIN. In December.

Mr. STANGELAND. Not retired; he will retire. And let me say that the Minneapolis Tribune is not disposed to speak highly of too many Republicans. But they did very much express concern at the loss of Mr. Rockenstein's expertise on that city council and his willingness to work with the majority in forming coalitions for the betterment of Minneapolis.

Mr. ROE. Are you becoming a Democrat now? [Laughter.]

Mr. ROCKENSTEIN. Mr. Chairman, no. I am returning to a more private approach to life.

Mr. STANGELAND. I thank the panel, and thank you, Mr. Chairman.

Mr. ROE. The gentleman from Minnesota.

Mr. OBERSTAR. Thank you, Mr. Chairman

I don't know whether Mr. Rockenstein is going to switch his party, but we do want to have people of his caliber on the other side. He's been a very well respected member of the Minneapolis City Council and has made a splendid contribution. He has great respect in the community and his testimony today is ample evidence of why he has had and enjoys such respect.

Congressman Martin Sabo asked to be remembered to you this afternoon. He is committed in the work of the Appropriations Committee this afternoon. He would have been here himself to welcome you.

Indeed, all of the testimony of all members of the panel is splendid, and I do want to thank you all for the very considerable effort that went into the preparation of your presentations.

In particular, the statement of Mr. Sampson dealing with the nonpoint source legislation, I found very enlightening. I think you made some good contributions and suggestions about particularly the timeframe for submission of the State plan.

You suggest on page 3 that EPA might not be able to have regulations prepared in 6 months or less. That's true, if they build a mountain out of a molehill. What we ideally would like to see is a streamlined body of regulations that wouldn't take very long to publish. I mean, it just seems to me that EPA ought not to be there and massage the paper over 6 months. I mean, they can shuffle it a little bit, but they needn't massage it.

Do you have some suggestions on how we might lighten the burden for the agency and make sure that they don't take an eternity to produce something that is workable? They ought to be able to write a simple declarative English sentence in less than 6 months.

Mr. SAMPSON. I'm afraid that therein lines the difference between hope and expectations on that matter. I'm mindful of the story that was told in the Safe Water Drinking Act, which, if memory serves me right, was something between one and two pages long. The first draft of regulations that hit Russ Train's desk was said to be 13 inches thick.

I certainly hope we don't have to go through that again. We certainly pledge our effort as a private organization to push for simple, straightforward, and very quick regulations.

But unfortunately, the wheels grind slowly, and 9 months from the date of passage of an act seems to slip away from us very quickly. That was the point I was making.

Mr. OBERSTAR. I have made a point in my opening statement, and throughout the development of the legislation to be mindful of the numerous deadlines set in the 1972 act, none of which were met, and not to be unrealistic about deadlines with respect to the NPS program that we want to get going, and since this is to be an implementation program, we would certainly like to get it off to an early start and get moving with it.

So, it seemed to me we're building on a history of experience. Whereas with the 1972 act much of what was being done or asked to be done was plowing of new ground, we won't be in that position with the nonpoint source program.

Mr. SAMPSON. If I could make a point, sir, your 9 month deadline, or whatever deadline, whether it be 9, 12 or 18, does not in fact, limit the more progressive States from coming before the EPA with a program. It simply is a cutoff for those who are less ready to get there.

That is tied to your funding proposal, which I find very constructive, because it does not wait until the last application is in to figure some sort of a sharing formula.

Rather, the funding, by its very nature, is an incentive for people to get on with it quickly, to be first in, to make an application and to move forward.

So all I'm basically saying is I think you need to look at deadlines, not in a way that would slow up the speeders, but in a way that allows more good programs to meet the cutoff. I just fear, from a practical point of view, that too many good State programs couldn't make it in under that short a wire.

Mr. OBERSTAR. That's a very good cautionary statement, and your suggestion of a longer timeframe, nonetheless, would not have the effect of dragging the process out. That is, States who are ready would be encouraged, because funds would be made available sooner, to come in at an earlier date.

Mr. SAMPSON. That would be the intent.

Mr. OBERSTAR. I didn't have any other questions. I just wanted to explore that. If you have some thoughts about how we might, by legislative language, tighten up this matter of regulation writing by the agency, I would certainly welcome your thoughts; how we might reduce the margin-for-error part of overzealous administrators.

I am very mindful, as is our subcommittee chairman, of that four line passage in 92-500 which EPA, exceeding the miracle of the loaves and fishes miraculously transformed into 36 pages in the Federal Register.

Mr. ROE. I remember that.

Mr. OBERSTAR. Yes.

Mr. ROE. The gentleman from California.

Mr. PACKARD. I come out of local government and I don't have very many opportunities to talk to men and women in local government that struggle with the same problems that we did for a long time, and I would like to ask two or three questions that relate to what local government is doing or can do to help alleviate the problem.

I sense that there has been a long-term attitude of looking to the Federal Government for solutions to these major water quality and other pollution problems. At the same time, cities are often pitted against each other and blame each other for the problems that they struggle with in their common body of water.

Really, one city's point pollution is another city's nonpoint pollution in many cases, and in my own case, I saw where we had a serious problem in one of our lagoons with a river running, or a creek running into it, and all the cities along that river stream became a part of the problem.

Yet, because the lagoon was in my city where I was serving as the mayor, it was our problem. And when we look to the other cities, of course, they did not feel that they had responsibility.

Until cities and counties begin to look to themselves to organize and to establish a program of solving some of their problems, I think that we're going to constantly be struggling with the problem.

And if they constantly look to the Federal Government to solve that major problem without any effort on their own, I think that it will be a disservice to the whole system.

Do you feel that options like associations of Governments or joint powers agreements established by and among groups of cities are being utilized adequately in order to help solve local problems with local organizations?

I'll ask Mr. Potter.

Mr. POTTER. We've had a good deal of that experience here in the Washington metropolitan area. The Council of Governments, of course, covers 18 local jurisdictions, I think it is, in three States, if you count the District of Columbia as a State.

And we have a weighted system of voting, and we'll take votes, but the decisions are only advisory. They have no governmental powers. There has been a great deal of resistance to metropolitan government.

Therefore, we have not been able to more than develop cooperative arrangements which sometimes work out but frequently do not when the cost or commitment is pretty heavy, especially on one or two members of that group.

In the case of water pollution control, it wouldn't work at all anyway because the sources of pollution are, as I indicated, for Chesapeake Bay or even the Potomac River, several States, and totally beyond the jurisdiction of the Council of Governments.

Now, we do have interstate compacts, but they don't yet involve all the States that are involved in the Chesapeake Bay.

So many of these things really are interstate problems, that even the Founding Fathers recognized the Federal Government has to have a function here.

Now, the National Association of Counties has long since tried to deal with the problem of overpayment, overcommitment by the Federal Government by saying the Federal commitment does not have to be to growth; initially the grants were made to cover expanded plants to deal with the growth of cities or counties. And we said take that out of it, and focus on the pollution problems where we have recognized a national problem, we've decided to clean up rivers that everybody's been relying on. And that is where we felt the Federal Government could properly provide a majority of the payments.

We were perfectly willing to take out that very advantageous money that was spent on expanding plants, and we feel that we have accepted our local responsibility in that respect, and hope the Federal Government will deal with the interstate pollution problems along with us.

Mr. PACKARD. Of course you're dealing with a lot different circumstance than the average community is dealing with when you're talking about this metropolitan area that does cover several States.

Mr. POTTER. Many are interstate, though.

Mr. PACKARD. Many of the problems are, and they, I recognize, would need to be dealt with at a different level.

But it would appear to be that cities, as they struggle with each other say within one county, they often become quite parochial in their own set of problems at the expense of solutions to the problem.

And I think that's what generated a lot of our environmental groups that out of default have felt that no one is really going to tackle the problem, so they get very much aroused and finally almost become as it were enemies to the cities when in fact they weren't intending to do that, but simply they have tried to find a

solution to the problem of parochial cities not being willing to work together to find a joint solution.

I probably come from a different background geographically than what we see right here in this area, or even in the Minneapolis area. Mine is more of a rural community or a rural county, but nevertheless we found that it became necessary to impose user fees, a portion of which were to be earmarked for new construction or future needs.

Is that being done adequately, do you think, in local jurisdictions? Both counties and local cities? I am speaking of user fees particularly on new development, whereby the new development helps pay for future needs as well as current operating needs?

Mr. ROCKENSTEIN. Mr. Chairman and Representative Packard, I would like to address both of those, I think, from the perspective of the National League.

If I can step back for a moment, the reason that the National League has been a consistent supporter of national standards is in an effort to get the local governments, and in fact local governments and States, if you will, to work out within their own intergovernmental processes a way to meet those standards.

You should have a national standard and then leave the State and local governments the flexibility to work that out where it is an intrastate problem. I think the appropriate role for the Federal Government is to make sure that the standards are met at the appropriate time.

Let State and local governments figure out the best way to organize themselves to do that.

The interstate problem is a different problem, and I can't speak to that as well as the intrastate problem. In Minneapolis-St. Paul, of course, we have one of the most elaborate, and I happen to think one of the most effective intrastate cooperative structures anyplace in the country.

We have a metropolitan council which has more than just advisory capacity. It has identified metropolitan systems and set down standards for those systems. The communities are expected to develop their land use plans and in those land use plans to acknowledge those metropolitan systems and to fit into them. Those include airport, sewer, transportation, hazardous waste, a whole host of systems. We have a separate metropolitan waste control commission which gathers up the particular problem that we're talking about. It has not only responsibility for the wastewater treatment but it has also run the 208 program for the whole 7-county area. There has been a great deal of metropolitan wide cooperation in our area.

And that is the way that Minnesota has chosen to approach the problem, to use a more metropolitan approach. We happen to think that has led to a more efficient and a more cost-effective answer.

I would hesitate, however, to say that that model should be imposed on some other State or some other region. Let them decide what they think is their most cost-efficient model. We believe ours has worked, and worked effectively.

There are a number of incentives, actually in both the Clean Water Act and in the Clean Air Act to foster intergovernmental cooperation and compacts.

I don't think all of those have been recognized by some local jurisdictions, but again the experience on our NLC committee is that most cities are involved in some type of intergovernmental cooperation with their neighbors on these problems.

It may be purely voluntary; it may be an association of governments; it may be something as formal as the metropolitan council, but there are very few who aren't involved in some way in a cooperative effort, either with their State or with another local government.

Mr. PACKARD. Even though they're involved in trying to solve their pollution problems, are they involved in the funding of those programs as strongly as they are in the other aspects of the program?

Mr. ROCKENSTEIN. Depending on the degree of the State match, for instance, in the grant program for publicly owned treatment facilities, it may be as high as 25 percent of local match if your own State does not provide any. In Minnesota the State does provide a portion of the match; but we provide a portion also.

In Minnesota, again I would give you the example of our Metropolitan Waste Control Commission, we not only pay a user fee which is given to the city which we then pass on to individual users on their water and sewer bills, but there is, going to your other question, there is a specific hookup charge for new development which is designed to carry most of the cost of new development.

So if a developer wishes to develop a parcel, and that parcel is in an area that is sewered under the plan for the metropolitan area, then he will be expected to pay those hookup charges for new development. Indeed, if the city of Minneapolis takes a parcel on which there are 15 units and we take down those 15 units, we are given a credit for having taken 15 units off the system.

But if we put back 45, we will have to pay for 45 units. Either we will have to pay for it, or the developer will have to pay for it. And they leave that up to us to decide with the developer.

So again, in our area, and I think in many other areas, we are trying to address the issue that my colleague spoke of, that growth is essentially our problem. If you look back on the changes that were made in the grants program, the league is concerned about the fact that you took out combined sewers and rehabilitation and inflow and infiltration, but it's not a part of our policy to say that you ought to put the growth incentives, or the growth match back in.

That, we believe, is a legitimate cost of local government and should be addressed by local government. And, at least in my State, and I know from experience with other people on our steering committee and other States, it is being addressed by differential charges in the areas where growth is occurring.

Mr. PACKARD. Thank you very much.

Mr. ROE. We want to thank you very much for your testimony. It's been most helpful to us.

Our next panel will be the American Paper Institute, National Forest Products Association, Mr. Dale McGreer, who is a forest hydrologist with the Potlatch Corp., and the National Audubon Soci-

ety, Ms. Hope M. Babcock, who is deputy counsel; and the Conservation Foundation, Dr. Edwin H. Clark, who is a senior associate.

The reason we're grouping you together is because we are concentrating in large measure today on the nonpoint source issue.

We want to welcome you all to our committee, and I know you've had a chance to listen to a lot of the testimony today.

We would appreciate your working summary to the points that you want to specifically make.

The full text of your prepared statement will appear in the record at this point.

[The statement referred to follows:]

STATEMENT FOR THE RECORD OF DALE MCGREER, FOREST HYDROLOGIST POTLATCH CORP.

I. INTRODUCTION

Good morning. I would like to thank Chairman Roe and the members of this Subcommittee for allowing me to testify this morning on behalf of the American Paper Institute and the National Forest Products Association (API/NFPA) with the respect to control of silviculture nonpoint sources of water pollution.

My name is Dale McGreer. I am a forest hydrologist employed by the Potlatch Corporation in Lewiston, Idaho. I also serve on the API/NFPA Nonpoint Water Quality Committee. API/NFPA are national trade associations representing over 2,000 member companies who own and manage forest lands and manufacture pulp, paper, and solid wood products. API/NFPA members have a direct interest in the effective implementation of nonpoint source pollution control programs.

For the past five years I have been involved in the development of nonpoint source control programs on a national basis for my company. In addition, I have coordinated our company's participation in the development of programs in Idaho, Arkansas, and Minnesota to address silviculture nonpoint source pollution under Section 208 of the 1972 Federal Water Pollution Control Act. From 1974 to 1979, I worked as a research scientist studying the relationships of watershed management to erosion, sedimentation, water temperature, and fisheries resources.

I have also participated in designing industry research programs on silviculture nonpoint source problems, working with the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI). NCASI is the environmental, technical studies arm of the forest products industry. Since 1977, NCASI has conducted industry-sponsored research projects on the water quality impacts of forest management activities, the effectiveness of improved management practices to control silviculture nonpoint source pollution, and the implementation of Federal and State silviculture nonpoint source control programs.

Much of the interest in the water quality impacts of forestry activities has been focused, in recent years, through the Clean Water Act's Section 208 program. Through Section 208 EPA fostered active programs in a number of States to: (1) assess the impacts of forestry activities on water quality; and (2) devise management practices and control programs, where necessary, to achieve water quality goals.

The results of State Section 208 planning efforts have shown considerable variation in programs from State to State. This variability makes it very difficult to draw any generalizations about the 176 areawide and 49 State Section 208 planning programs. However, based upon the data accumulated as a result of the Section 208 planning process, we believe that a general perspective of the water quality impacts associated with silviculture activities has been gained by EPA, the States, and the forest industry.

A summary of the impact of forestry activities on water quality was provided by the API/NFPA statement for the record at the Subcommittee's November 2 hearing. In addition, attached to this statement is NCASI's "1982 Review of the Literature on Forest Management Practices, Hydrology, and Water Quality Protection and Management." (Attachment 1).

The results of such surveys—based on existing water quality data (which in many cases are admittedly still incomplete)—suggest that silvicultural activities have not been considered a major, overall, nationwide water quality management issue. In most cases, sediment is considered the primary source of pollution from forestry activities. However, the 1978 study report of the Society of American Foresters' Clean Water Act Task Group indicates that sediment from forest lands is estimated to be

less than 4 percent of the total man-caused sediment in the Nation's waters. This is particularly significant considering that there are 718 million acres of forested land in the United States, constituting approximately one-third of the total land area.

In the balance of this statement, I will review our involvement in the Section 208 process with States that have been active with the silviculture category of nonpoint sources. The data base for this review is provided by NCASI's January 1983 report, "Summary of Silviculture Nonpoint Source Control Programs—1982." A copy of this NCASI report is also attached. (Attachment 2).

Through our review of State Section 208 programs, we have found three basic principles that appear common to the varied State efforts to address water quality problems from forestry activities. These principles include: (1) site-specific application of nonpoint source controls; (2) flexibility in developing control programs; and (3) utilization of existing expertise in nonpoint source control.

II. GENERAL PRINCIPLES FOR THE DEVELOPMENT OF STATE SECTION 208 PROGRAMS

A. Site-specific application of nonpoint source controls

Because of the variability in the nature and types of nonpoint source problems, efforts to address nonpoint source pollution have been focused at the State level. Control of nonpoint source pollution requires solutions that can be applied in a site-specific fashion. EPA's current regulations and guidance laudably recognize the need for this type of focus in the Section 208 program.

EPA's approach to developing Best Management Practices (BMP's) to protect water quality has fostered the concepts that: (1) States, as opposed to Federal agencies, determine whether a practice is indeed a BMP; (2) alternative practices must be examined; and (3) such practices must be technologically and economically practicable before they are adopted. EPA's approach has also supported the notion that the application of Best Management Practices must be tailored to site-specific conditions. BMP's have, therefore, varied from site to site depending on the nature of particular silvicultural activities and related potential water quality problems.

B. Flexibility in developing control programs

In addition to the need for site-specificity in the development of control practices, EPA has laudably provided the States with the option to implement a broad spectrum of control programs. We strongly support EPA's policy of providing the States with sufficient flexibility to consider a variety of alternative control programs for dealing with silviculture as well as other potential nonpoint sources of pollution. In the same way that specific silviculture practices (and any related nonpoint source pollution problems) vary from State to State, so have the control programs that the States are implementing.

For example, a number of States have developed programs emphasizing education of—and training programs for—landowners and forestry operators. This type of program is well adapted to many of the southern States because of the predominance of small, private, non-industrial landowners in these States. In the south, 70 percent of the forest land base is held by non-industrial landowners. The nonregulatory approach, with the subsequent utilization and improvement of existing extension, education, training, and incentive programs is the msot effective way to assure the implementation of Best Management Practices on the ground. In the south, particularly, this approach has proven successful in encouraging good forest management.

In other states, other types of approaches have been developed. The West Coast states have adopted state forest practice acts which are regulatory programs designed to control various aspects of forest management, including water quality impacts. In some of the northeastern states, licensing programs for forest operators and loggers have been implemented as a result of the Section 208 planning program. States should continue to be allowed to evaluate and utilize a wide variety of possible nonregulatory and regulatory programs for the control of nonpoint source pollution.

C. Utilization of Existing Expertise in Nonpoint Source Control

A final important element that has been recognized in the administration of nonpoint source control programs is the need for the application of technical and professional expertise in the development of BMP's and program implementation. The variability in silvicultural activities and potential nonpoint source water quality impacts has made the application of forestry expertise an essential part of the process.

In every state where we have an interest, we have encouraged the state forestry agency—the agency with silviculture expertise in the state—to take the lead in developing the silviculture portion of the Section 208 plan. In many cases, state forestry agencies have been chosen as the implementing agencies for the silviculture por-

tions of the Section 208 plans. Focusing the nonpoint source aspects of Section 208 planning at the state, rather than the areawide level, is one way of taking advantage of the existing expertise of state agencies in dealing with many nonpoint source categories.

In order to provide a more detailed perspective on where state Section 208 efforts have led us, we would like to share the specific findings and conclusions of NCASI's most recent survey of state silviculture nonpoint source control programs. As indicated above, the complete report is attached. We will highlight major points below.

III. SUMMARY OF SPECIFIC RESULTS OF THE 1982 NCASI SURVEY OF STATE PROGRAMS

A. Nature of State program to control nonpoint source contributions from silvicultural activities

1. Regulatory programs

Seven states can now be characterized as having regulatory programs for silvicultural activities. Oregon, Washington, Idaho, and California base much of their nonpoint source control programs on the provisions of forest practice act regulations. The Idaho rules, with which I am most familiar, require prior notification to the Board of Land Commissioners. They restrict activities which would adversely affect beneficial uses of waters.

The Alaska Forest Resources and Practices Act has "advisory" Best Management Practices. The prior notification requirements in this Act also allow for water quality protection.

Nevada has detailed rules under the Nevada Forest Practice act which cover erosion control and stream-protection zones. The mandatory use of performance bonds to assure satisfactory compliance with the Nevada rules qualifies this program as regulatory in nature.

In New Hampshire, an "Intent to Cut" form required for harvesting operations allows an operator to sign an agreement to implement BMP's. The "Intent to Cut" form also permits monitoring of operations for water quality protection. Failure to sign the agreement to use BMP's, followed by subsequent water quality problems, will result in the operator being required to submit plans for future operations.

2. Quasi-regulatory programs

Four states do not have programs specifically covering silvicultural operations, but have opted instead to emphasize existing regulations designed to control sediment or organic debris in streams. These state programs have been designated as quasi-regulatory because state regulations are not comprehensive for forest activities, or are directed mainly at non-silvicultural activities.

Massachusetts, for example, has legislation requiring prior notification before harvesting, as well as a Slash Law requiring that debris be kept out of streams. In Pennsylvania, all activities causing soil disturbance are subject to regulation under a Clean Streams Law. In Maine, road construction BMP's and regulations limiting erosion and sedimentation are enforced, while the balance of the silvicultural program involves mainly educational efforts. Hawaii has strict land-use planning. Under one land-use category, sediment losses are controlled.

3. Nonregulatory programs

Twenty-seven states—a majority—that addressed silviculture have adopted nonregulatory control programs. Almost all of these programs involve education efforts to inform operators about BMP's which have been developed for the state. Educational material used in these programs includes pamphlets, instruction guides, television public-service announcements, newsletters, posters, and slide-tape shows. Workshops, tail-gate lectures, and demonstration projects are also being used.

EPA recently sponsored a workshop to assist state forestry, water quality, and extension-service personnel from 6 states (Arkansas, California, Montana, New Hampshire, Oklahoma, and West Virginia) with their section 208 educational programs. Several states will be using National Training Package (NTP) material developed by EPA and the U.S. Forest Service, which is now available for education purposes.

Another technique used by several states to encourage the use of BMP's involves integrating water quality protection practices into normal forest-extension planning. State studies have shown that professional consulting—provided either by state foresters, industry foresters, or private consultants—results in a higher rate of BMP use and effective water quality protection.

A third technique used in a few state programs involves incentives to promote the use of BMP's. The best developed cost-sharing program is Minnesota's, where $100,000 was used annually, specifically to encourage the use of silvicultural BMP's.

This program, which lasted three years, is now being considered for reinstitution. Several other states are attempting to use federal programs like the Forest Incentive Program (FIP) and the Agricultural Conservation Program (ACP) to encourage BMP

A final technique for voluntary programs might be called a peer-pressure or peer-encouragement approach. For example, in Vermont, when a complaint about a forest operation is received and found to have some basis by a State Water Resources Investigator, a committee from the Vermont Timber Truckers and Producers Association will visit the site and encourage the logger to resolve the problem with appropriate paractices.

4. Other programs

In many western states, federal lands (primarily U.S. Forest Service and U.S. Bureau of Land Management ownership) constitute a large percentage of the commercial forest land. Both of these agencies have regulations protecting water quality. Therefore, agreements of understanding between the designated Section 208 agencies for the state and the major federal land management agencies to continue to implement water quality protection measures are the primary of silvicultural nonpoint source control.

B. State approaches to addressing implementation problems

In 1980, four of the problems most frequently identified by state agencies as impeding progress in their silvicultural nonpoint source control programs were: (1) lack of funds; (2) limitation of agency personnel (both manpower and training); (3) problems in implementing existing controls or statutes; and (4) the difficulties of contracting and informing small landowners. State agencies continue to show a desire and, in many cases, great ingenuity in addressing these problems.

For many state programs, funding will not be available from federal sources to support silvicultural Section 208 programs. However, rather than let these programs lapse, some state forestry agencies are absorbing nonpoint source control responsibility into their normal forestry extension work. Industry cooperation in supporting additional research, hosting workshops, and training company personnel has been noted in several states. A number of these types of company efforts are described in the attached NCASI report on "Industry Programs Dealing with Forestry Management Practices and Environmental Quality." (Attachment 3).

Upgrading the technical skills of agency personnel to deal with forest nonpoint source questions is probably the area most consistently addressed by state agencies. The states appear to recognize that training of agency personnel results in multiplying benefits as these personnel interact with forest opertors.

Some state agencies found that there are existing state laws and regulations to control nonpoint source pollution. In some cases, delays in notification of silviculture activities limited the effectiveness of these controls. In other cases, the agencies with control responsibilities lacked on-site personnel. The EPA-sponsored agency master planning projects addressed these problems by identifying existing nonpoint source controls and fostering cooperation between the state forestry and water resources agencies.

Finally, contacting and educating numerous, small landowners is a management problem which is common to many programs; especially in those states with a high proportion of non-industrial forest land. Surveys of forestry operations have shown that these non-industrial operations are the most likely to create water quality problems.

C. State assessments of section 208 program accomplishments

By 1982, several state programs had been operating for a sufficient time so that judgments about program success (and even surveys or enforcement records to document progress) have become available. The most important step in implementing a lasting nonpoint source control program involves the integration of water quality concerns into normal forest operations. Comments by state agency personnel indicate that this important step is being accomplished for many programs.

State agency personnel report both improvement in water quality concerns, and cooperation with control programs by forest managers. Several states have conducted field assessments of their programs. Most of these assessments have shown effective water quality protection, and an increased awareness of BMP's associated with forestry activities

Another measure of program success or failure is the number of enforcement actions and complaints concerning forest operations. In this respect, program assessments and enforcement records have shown that the regulatory program—in states which used forest practices acts—have been effective.

The NCASI survey did discover, however, that some states are finding additional control needs as they proceed to implement their programs. We plan to continue to work closely with these states to assure that these problems are corrected. The attached NCASI report provides considerable detail on the progress being made in each state with a silviculture nonpoint source control program.

D. Prospects for continued and effective section 208 program implementation

In 1980, some state administrators predicted that nonpoint source control activities under Section 208 would cease unless federal appropriations were provided to support implementation of state programs. While some monies have been made available to state silvicultural nonpoint source control programs (usually as carryover Section 208 funds), most federal support has been, or will shortly be, terminated. Therefore, in 1982, NCASI asked state agency personnel to project the future of their programs.

Of the 40 states with a silvicultural nonpoint source control program, 30 projected that their programs would continue as currently operated. States like Oregon and Washington consider the operation of their programs to be independent of Section 208 funding needs because the forest practice acts are financially supported through the states. However, these programs will be cut back in their ability to conduct extensive studies of complex water quality protection questions that might indicate needed forest practice changes. Washington, for example, used $487,000 in Section 208 grants between 1977 and 1981 to conduct studies on forest roads, stream management zones, slope-stability, compliance with the Washington Forest Practice Act, and other issues.

Other states provide substantial financial support to their forest nonpoint source pollution protection programs so that continued effective programs can be anticipated. Many states will have to reduce their activity levels. However, since educational materials have been produced and BMP's have been developed and evaluated, the continuation of these programs with reduced funds is possible. Extension foresters will be incorporating BMP considerations into their informational efforts in these states.

In some states, including California and Kentucky, agency personnel are anticipating an adjustment period as programs are finalized and implemented. In other states (Georgia, New Hampshire, New York, North Carolina, and West Virginia) agencies will be making decisions about future program direction based on the results of ongoing (or recently completed) assessments.

Some state agency personnel have reported that programs will be downgraded because of lack of funds. In New Jersey, management emphasis is being shifted from private lands to state lands and the activity level of Section 208 is described as "maintenance." In Virginia, agency personnel anticipate a decrease in state activities in silvicultural nonpoint source control, and identify the need for "industry and consultants" to continue the program. In Montana, staff working on an education program has been cut, but most of the educational material for a workshop program is apparently ready. At least part of an educational program will be accomplished.

Summarizing, it appears that the tools (educational material, BMP's) for programs have been developed. Most states will be carrying out their nonpoint source control responsibilities using either state funding, low-cost, industry-state cooperative programs, or by incorporating nonpoint source control recommendations into normal forest planning and extension activities. In my state, for example, we are embarking on a program to audit forestry operations for compliance with BMP's, using volunteered time from state and federal employees, industry personnel, and concerned citizens groups. However, lack of adequate funding will slow program development in some states.

E. Estimates of benefits and costs of section 208 silvicultural nonpoint source control programs

Substantial costs have been incurred and benefits accrued as a result of the nation's silvicultural nonpoint source control programs. A problem in assessing "program worth" has been the lack of cost and benefit data for state programs. An information gap on the costs and benefits of most nonpoint source programs still exists. For example, in response to the question, "are there any estimates of the costs and/or benefits of the silvicultural nonpoint source control programs for your state?" only a few state representatives had cost estimates. No one could provide any benefit estimates.

Costs involve: (1) the Section 208 program development costs of assessing the silvicultural problem and organizing an effective program; (2) implementation and continuing program costs; and (3) add-on costs to operators to comply with guidelines or mandatory Best Management Practices. California, Washington, and Oregon are the

most expensive with annual program costs of $3,400,000; $1,400,000; and $1,350,000, respectively, to cover management and enforcement of Forest Practice Acts. Nonpoint source program personnel for several states like Vermont and South Carolina anticipate no future funds for program operations, but will continue programs using existing resources.

The add-on costs of complying with BMP's can be substantial when considered statewide, even though most BMP's are designed to be cost-effective. For a few states, estimates of add-on costs for compliance with Forest Practice Act rules have been developed. These cost estimates are included in the attached NCASI report.

Direct quantification of benefits resulting from the silvicultural Section 208 programs is not generally available, although a study of Washington's program demonstrates a high rate of compliance with BMP's which, in turn, has resulted in protection of water quality uses. A major emphasis in the EPA strategy for FY-83 is to aid states in securing information to estimate benefits. Although these estimates are not currently available, there are several indirect measures—described in the attachment—of benefits to the forestry community resulting from nonpoint source programs.

Probably the best measures of benefits resulting from the nonpoint source control programs are the generally favorable assessment of program accomplishments by state agencies, and the decrease in citizen complaints about forest practices. These favorable assessments and enforcement records indicate that silvicultural nonpoint source programs are protecting water quality, which is the ultimate benefit and goal of the Section 208 program.

IV. API/NFPA SUPPORT H.R. 4037 WITH MODIFICATIONS

As introduced H.R. 4037 builds on the experience with the Section 208 process described above. The program framed by H.R. 4037 represents a positive step forward in the federal/state partnership to deal with nonpoint source problems. It will provide assistance to states where the lack of federal financial support may slow implementation of best management practices. API/NFPA support H.R. 4037, with two following modifications.

First, H.R. 4037 would add new Sections 319(a)(7) and 319(c) to the Act requiring states to: (1) identify federal activities which would be "inconsistent" with the state nonpoint source implementation program; and (2) recommend modifications to these federal activities. EPA would consolidate the state recommendations, and submit them to the appropriate federal agency. Finally, the affected agency would modify its activities, and "to the extent possible," carry them out in a manner that is consistent with the state program.

API/NFPA support the basic proposition that federal programs should be consistent with state nonpoint source control efforts. However, we are concerned that the proposal framed in H.R. 4037 contains ambiguous requirements which could result in substantial resoruce and program burdens on federal agencies.

For example, it is unclear how the term "inconsistent" would be defined for the purposes of identifying affected programs. Similarly, it is not apparent why EPA should serve as a clearinghouse for state recommendations, or whether other federal agencies would be bound by EPA's interpretation of the states' requests. Finally, we are uncertain as to how the requirement to carry out federal programs, "to the extent possible . . . in a manner which is consistent with" state desires would be interpreted by EPA or the courts.

To provide a greater degree of certainty in the specific federal program requirements imposed through this type of a provision, we prefer the approach outlined in Sections 319(a)(1)(G) and 319(f)(1) S. 2006 as reported by the Senate Committee. S. 2006 references, and gives special deference to, existing federal/state program coordination procedures outlined in Executive Order 12372. EO 12372, signed by President Reagan on July 14, 1982, provides specific procedures for state and local government coordination and review of federal financial assistance and development projects. In this fashion, a good deal of uncertainty concerning the requirements of this portion of the nonpoint source proposal can be eliminated.

Second, proposed Second 319(h) of H.R. 4037 would provide the authority for EPA to convene interstate managment conferences to deal with nonpoint source problems that affect more than one state. API/NFPA suport the special conference approach to dealing with interstate problems. However, we are reluctant to endorse the proposition—as H.R. 4037 appears to do—that such conferences should be granted plenary enforcement responsibilities or unilateral authority, to modify existing state permits and/or plans. Such a proposal would disrupt existing programs. More

data on long range transport of nonpoint sources must be collected before interstate problems can be resolved in such a compulsory fashion.

Mr. Chairman, I would like to thank this Subcommittee for the opportunity to testify. I will be happy to answer any questions you may have.

TESTIMONY OF HOPE M. BABCOCK, DEPUTY COUNSEL, NATIONAL AUDUBON SOCIETY

Good afternoon, Mr. Chairman, distinguished members of this Committee. My name is Hope Babcock. I am Deputy Counsel of the National Audubon Society. Audubon is a nationwide nonprofit organization with over one half million members dedicated to the wise use and conservation of our natural resources and protection of the environment. A high priority of our members is protecting the quality of our nation's waters and their adjacent habitat. Therefore, it is with extreme interest that we have been following this year's debates on reauthorization of the Clean Water Act. I am here today to address two areas of particular concern to us in that debate: nonpoint source pollution and the declining health of our nation's bays and estuaries.

Runoff of pollutants from our nation's farms, mines, cities, construction sites, timbered forests, and over-grazed rangeland, or nonpoint source pollution, is an extremely serious water quality problem. Nonpoint pollution contributes 50% of all pollutants to our nation's waterways: 75% of the sediment, 90% of the fecal and coliform bacteria, 80% of the nitrogen, and 50% of the phosphorus flowing into those waters. Thirty-seven states have reported to the Environmental Protection Agency that nonpoint sources are the major factor interfering with the achievement of water quality objectives in those states.

Ninety percent of the lead entering the Great Lakes comes from nonpoint sources and waterquality in approximately half of our lakes cannot be improved without implementing nonpoint source controls, according to the Council on Environmental Quality. The annual erosion of topsoil from our nation's farmlands fills our waterways not only with sediment but also with chlordane, DDT, DDE, and other organic chemicals. High concentrations of mercury, lead and gold washing off from land in Silicon Valley and pesticides and fertilizers contained in agricultural runoff into the Sacramento and San Joaquin rivers present a significant threat to aquatic life in San Francisco Bay. Drainage from disturbed mining sites in appalachia has increased the acidity, sedimentation, and hardness of the area's streams, contributing sulfates, iron, and manganese to those waters. Within the last two years 13 percent of the fish kills reported in Minnesota were attributed to pesticides in runoff.

Nonpoint source pollution smothers shellfish beds and fish spawning areas, clogs rivers and clouds lakes, artificially enriching the water environment. Nonpoint pollution also increases the risk of flooding by decreasing water storage capacity, necessitating expensive dredging. The principal source of nonpoint pollutants, agricultural soil erosion, decreases the productivity of our farmlands. The Conservation Foundation, in a recent study on agricultural soil erosion, estimated that nonpoint source pollution costs this country in excess of $3.0 billion per year. This number reflects the cost of cleanup activities, such as wastewater treatment and dredging made necessary by the influx of sediment and other nonpoint pollutants.

It seems clear to us that the question is not whether this country can afford the cost of controlling nonpoint source pollution, but whether it can afford to wait any longer before initiating the necessary controls.

Control of nonpoint pollution sources, as opposed to point sources, however, presents some special difficulties. Pollution contributed by point sources, because of basic similarities in industrial and municipal facilities, is more easily identified and lends itself more to federal regulations and uniform national standards. A nonpoint source pollution program, in contrast, must address localized conditions which vary from state to state, watershed to watershed, and even from one stream segment to another. Controls must be developed at the state and local levels to address specific situations on a case by case basis.

Much preliminary work on nonpoint source pollution has been done at the state and local level under Section 208 and 305(b) of the Clean Water Act. As a result of those programs, we know which streams are not meeting current water quality standards because of nonpoint pollution, the significant sources of nonpoint pollution to those streams, and the measures that could be implemented by those sources to reduce nonpoint pollutant loadings to those streams. However, those programs did not go far enough and have been hampered by lack of funds for implementation and enforcement of controls. Therefore, while much has been learned about nonpoint source pollution under the 208 and 305(b) programs, not much has actually

happened on the ground. For this reason, we think EPA is misguided in developing a nonpoint source strategy that relies exclusively on existing authorities under the Clean Water Act and that the agency's current efforts to develop a joint program with the Department of Agriculture to funnel incentive money to farmers to encourage them to employ nonpoint pollution controls, will not be enough. In short, new authorities to deal with nonpoint source pollution are necessary.

Audubon strongly believes that Congress must take the next step now and design at the federal level the framework under which the states can implement what they have learned under the 208 and 305(b) programs. If this is not done soon, we will lose the momentum created over the last decade under the 208 program as well as the resources and institutions developed and now in place at the state and local level as a result of that program.

A balanced combination of incentives and requirements is needed in any program designed to address nonpoint source pollution. Only by striking the right balance will we keep the momentum going in those states already trying to address the problem of nonpoint source pollution and encourage movement in those states where little, if any thing, has happened under the existing programs. We consider the following elements to be essential for striking that balance:

(1) Nonpoint source pollution strategies must be developed and implemented at the state and local level. An effective nonpoint source program must be centered in the states, because that is where the expertise on this issue is and where the fit must be made between legislative concept and on-the-ground implementation of effective control practices. H.R. 4037 implements this approach.

In this regard, we note with interest Section 319(f) of that bill, which extends the state-lead approach to local agencies and organizations, so that they may administer the program when a state elects not to participate. In general, we think that this is a good idea because it will expand the reach of the program. However, we ask that this Committee consider adding language to the bill to assure that local agencies be required to demonstrate that they not only have the requisite expertise and resources to manage the program, but can do so over a sufficiently broad geographic basis to avoid creating many small, ineffective programs around the country. In addition, subsection (f) should make it clear that the local agencies must file the reports and plans called for under subsection (a) and (b) of the bill. We also question whether or not this opportunity should be given to non-public entities, as we infer is intended by the use of the word "organization." In our opinion, only units of government would appear to have the necessary legal authority to implement a nonpoint source control program.

Even though it is beyond dispute that an effective nonpoint source program is dependent upn the state-lead concept, the Federal Government cannot be completely absent from the design and implementation of this program. First and foremost, the Federal Government must provide leadership in elevating the nonpoint source pollution problem to a national water pollution priority. Enactment of H.R. 4037 will achieve that objective. In addition, to assure that federal funds are most effectively allocated, EPA must function in a review and approval capacity over state performance under any nonpoint source pollution control program. Again, the Oberstar bill preserves this function. Finally, EPA must be allowed the prerogative to step in with financial or technical assistance when a state has a critical nonpoint source pollution problem beyond its current resources, or when one state's nonpoint source pollution is preventing another state from achieving its water quality standards. Again, the Oberstar bill addresses these functions.

We do, however, have one concern, which we believe to be more a matter of drafting than intent, with how H.R. 4037 defines the EPA role. To wit, H.R. 4037 authorizes the Administrator of EPA to disapprove a state plan if it does not meet the objectives of the Section, yet those objectives are not defined in the bill. Indeed, the breadth of discretion granted states in subsections (a) and (b) with respect to the scope and contents of their plans enables them to submit a program that may not address the serious nonpoint source problems within their boundaries at all. We do not believe that that is the intent of the drafters of the bill. But, unless a clear statement of objectives is added to the bill or the discretion granted to the states is limited in some way, then this particular standard of approval may be totally ineffective.

Further, while we do not support an influx of federal managers to design and implement a nonpoint source in the event of state program denial, we do believe that EPA should be allowed to identify the nonattainment streams and sources of nonpoint pollution to those streams as well as the practices which could be applied to control those sources in those states that elect not to participate in the nonpoint program. Doing this will assure that critical, uniform data is available in all states

at the end of the statutory program. This will enable the Administrator to make precise recommendations to Congress for all states about what the next steps should be for reducing nonpoint pollutant loadings. Therefore, we recommend that the H.R. 4037 be amended to give EPA this additional authority.

We also note with interest the authority in the Oberstar bill for EPA to approve programs "in part." While we recognize the need for some flexibility for both states and the Administrator in the start-up phase of this program, which partial approval can offer, we believe that there should be some constraint on the Administrator's authority here to assure that states are not allowed to side-step problems in a way that defeats the overall purpose of the program to make a nationwide start at controlling nonpoint pollution. The partnership envisioned in the bill between Federal and State governments is a good way to approaching the problems associated with controlling nonpoint pollution, but the Administrator must retain sufficient authority to assure that the state share of that arrangement results in significant progress being made toward addressing the problem. We, therefore, recommend the addition of language to the bill which would authorize the Administrator to approve programs partially only when he has determined that the limited plan will make significant progress toward arresting the problem of nonpoint pollution.

(2) States should be advised to target streams where the problems of nonpoint source pollution are the most serious, and where the contributors of that pollution can most effectively curtail their practices to reduce pollutant loadings. This is particularly necessary given the limited resources that can be allocated in the present economy to addressing nonpoint pollution.

The Oberstar bill recognizes this problem by authorizing the states to design a program which puts into priority order nonpoint problems. However, H.R. 4037 does not make it clear that the states should be selecting targeted streams and sources of nonpoint pollution based upon the seriousness of the nonattainment problem and the likelihood that application of controls would effectively address the problem. Without this limitation on a state's discretion, there is no assurance that a state program will be applied in the most effective way, which in turn creates a dilemma for the Administrator at the program approval stage, as he will not have the necessary basis to reject a state submittal.

(3) While states must be directed to (a) employ best management practices and (b) apply uniform measures to categories and subcategories of activities, variations in the size, duration or production processes involved as well as localized topographical, climatological and geographical conditions necessitate allowing states flexibility in designing their programs. H.R. 4037 does just that, although, as I have just noted above, we think that the grant of discretion to the states needs some definition so that, at minimum it is goal oriented.

(4) Each state must be required to establish a schedule by which all best management practices will have been implemented and under which all sources from a particular category or subcategory are required to meet the same deadline. Such deadlines will give the sources of nonpoint pollution the certainty they need for planning, assure fairness among the sources and provide EPA with the necessary baseline point from which to measure the effectiveness of the program. For this reason, we support the language in the Oberstar bill which authorizes the Administrator of EPA to disapprove a program in which the implementation schedule is not sufficiently expeditious. This criterion is missing from the Senate Bill and is a welcome addition to the House nonpoint source pollution control program.

(5) Transboundary nonpoint source pollution must be managed, both because it poses a serious problem, especially for the downstream state, and because of the inequities involved in requiring the downstream state to improve water quality when the sources that are contributing to nonattainment are not within its boundaries. It is our position that unless the problem of transboundary pollution is addressed in this program, many of the efforts encouraged in the bill will be for nought.

The Oberstar bill addresses this problem by allowing states to request EPA to convene a management conference for the purpose of developing an agreement among the affected states for reducing the level of nonpoint source pollution. We applaud Cong. Oberstar for creatively seeing the appropriateness of a pre-1972 Act mechanism, the enforcement conference, for addressing this problem.

We do, however, have a few suggested changes to subsection (h). For example, to avoid unnecessary duplication and possible conflict between this program and other programs already in effect, we recommend the addition of language to subsection (h) which would make it clear that in those instances where federal law already requires a joint state effort to address transboundary water pollution problems, such as in the case of the Colorado River, the subsection would not apply.

We also note with some concern that a different and broader standard is used in subsection (h) than elsewhere in the bill for identifying the waters that will be covered by the program. In subsection (h), all navigable waters that are "affected by nonpoint pollution" are included in the program as opposed to those waters which "are not meeting applicable water quality standards or are not attaining a water quality which assures protection of public health, the use and value of such portions for public water supply. . . ." (See, subsection (a)(1)(A)). We question whether the occasion of transboundary nonpoint source pollution requires the application of a different standard and urge the Committee to use the same standard or showing throughout the bill.

(6) States must be given the opportunity to prevent the Federal Government from pursuing financial assistance policies and programs which are inconsistent or interfere with state nonpoint source control programs. Federal consistency gives real practical meaning to the state-lead approach, which we favor and which forms the core of the H.R. 4037. It makes no sense to spend taxpayers' dollars both to control nonpoint source pollution and to cause that pollution.

While H.R. 4037 addresses this problem, we are concerned that the language "to the extent possible" found in subsection 319(c) is not strong enough. We urge this Committee to consider substituting the phrase "shall accommodate," found in the Senate nonpoint source pollution control program, S. 2006, to make it clear that this is a mandatory duty for the federal agencies involved.

Federal consistency also has a positive element in that it can be used, and indeed is so used in H.R. 4037, to encourage the affirmative application of federal programs to assist states in controlling nonpoint source pollution. In order to be sure that such federal programs are brought into the program, subsection (a)(1)(B) should be amended to require states to identify not only those federal programs that conflict with their efforts to control nonpoint source pollution, but also those federal programs, which if applied in a different manner, could actually assist them to control this form of pollution.

(7) Federal money must be authorized to provide states with the incentives and financial assistance to participate in the program. We are pleased to see that H.R. 4037 requires the states to contribute 50 percent of the cost of implementing their nonpoint source pollution control programs and requires states to do more than they are currently doing to control nonpoint source pollution. This latter requirement provides a useful floor below which states may not fall and requires that they do more than they are currently doing to control nonpoint pollution.

However, we do have some suggested changes in the bill to clarify what we believe to be the intent of this part of the program. First, we suggest that the language in subsection (i)(2)(A) be revised to make it clear that 50 percent is not an obligation on the Federal Government, but a ceiling beyond which the federal share of a state's program cannot go. The simple addition of the phrase "not to exceed" before 50 percent will eliminate this confusion. Second, while we support having the states compete for these funds as opposed to granting money to the states based on an allocation formula as in S. 2006, we recommend that the language of the bill be amended to incorporate some standard related to the goal of controlling nonpoint pollution by which the Administrator can judge between states. Without such a standard, the Administrator may not be able to withhold monies from a less deserving state. This problem is complicated by the fact that the annual report required in subsection (b)(3) does not appear to be a basis for funding a state's nonpoint pollution program.

We are also concerned that too much money, under H.R. 4037, may be spent on the planning stage of the program as opposed to its implementation, because there is no limitation in the bill as to how much money will be available to the states for preparation of the report and plan called for in subsections (a) and (b). The primary purpose of the program is to achieve controls in the field. Failing to limit federal money for implementation of controls may seriously impede that effort.

We also wonder whether it was an oversight that led to "demonstration projects" not being excluded from the 10 percent limitation on administrative costs of the program. Under some circumstances, unless directed otherwise, these projects might be considered administrative in nature. We urge that unrestricted monies be available for demonstration projects, as they may be an effective way of tackling some of the more difficult nonpoint source pollution problems.

We also ask the Committee to look at the language in S. 2006 which authorizes the Administrator of EPA to reserve one-third of the monies allocated under the program for his discretionary use. We think that such language would be a useful addition to the House program.

(8) Finally, EPA must report to Congress on the progress made in reducing nonpoint source pollutant loadings nationwide and on what future action needs to be taken by Congress. This is an integral part of the program, for it ensures the compilation and analysis of field data that has been collected in different environments for different activities under different state regimens. Congress will then have an experiential information base for reference should it decide five years from now that more needs to be done, which we think it will. The Oberstar bill provides this function.

While it is clear that H.R. 4037 represents only the first step toward solving the nonpoint source pollution problem, it will serve to give important impetus to efforts toward that end at all levels of government. The hands-on experience that will ensue in the next few years under this type of program will from an invaluable data base from which much more can be learned about nonpoint pollution control. We recognize that it has taken decades for nonpoint pollution to reach its current "critical mass," and it will take more than a few years for us to reach an acceptable level of clean-up nationwide. We commend Congressmen Oberstar for tackling this difficult problem head-on. We are confident that this Committee will approve of his efforts and report our H.R. 4037.

Let me now briefly turn to the problems posed by the declining health of our nation's bays and estuaries. Even after eleven years of progress, water quality problems continue to plague us nationwide. Our estuaries, those areas where fresh water from the land meets salt water from the sea, are not immune. The estuary is an ecotone, a complex buffer zone which shares the characteristics of both fresh and salt water systems, but is identical to neither. A variety of animal and plant species are specially adapted to the wide fluctuations of current flow, salinity and temperature found in the unique estuarine environment.

The ecological importance of estuaries has become apparently only in the last two decades. The primary productivity of the estuarine system is among the highest recorded for any ecosystem. In coastal biotic communities, estuaries are the chief source of nutrients. A number of commercially important species, e.g., oysters, clams, crabs, shrimp, striped bass, and halibut, thrive in estuarine habitat.

Because they empty directly into the ocean, so that wastes seem to disappear, estuaries have customarily been regarded as limitless reservoirs for dumping municipal and industrial wastes. We are finding, however, that some estuaries have reached their limit as flushing basins. The results of a six-year, $28 million EPA study of the world's most productive bay, the Chesapeake, demonstrates this point. Phosphorous from urban sewage treatment plants and nitrogen from rural farms have over-enriched the bay. Toxic metals, mainly from industry, have severely contaminated large areas of the Bay near Baltimore and Norfolk: the consequence—massive algae blooms and steep declines in rooted aquatic plants, leading to dangerously low levels of oxygen in the water and significant changes in the species composition of fish and shellfish populations.

The Chesapeake may be our most extensively studied estuary, but it is not the only one with serious problems. High concentrations of coliform bacteria have forced the closing of sections of Mobile Bay to swimming and shellfish harvesting. Reduced levels of dissolved oxygen in two of the bay's tributaries have led to massive fish kills.

In San Francisco Bay, localized heavy concentrations of mercury, lead, and gold in the Silicon Valley area pose a significant threat to acquatic life, as mentioned previously. There is also strong evidence that pesticides and fertilizers washing in from the Sacramento and San Joaquin Rivers are causing infertility in striped bass—striped bass populations there have declined over 50 percent in the last decade; the current catch is only one-third of what it was twenty years ago.

The total acreage of our estuaries has declined greatly in the last 35 years. Almost half of the estimated 15 million acres has been designated "important habitat" by the U.S. Fish and Wildlife Service. Eight percent of this habitat has been lost nationwide since 1960. Some states, however, have suffered much greater losses than others. California, for instance, recorded a 67 percent decrease—a loss of 192,000 acres—in basic estuarine habitat between 1950 and 1967, when indiscriminate filling was finally halted by the state.

Legislation is needed to recognize the importance of estuaries as unique and critical habitat and to help protect them, not only from pollution, but also from fresh water diversion and overuse, so that their great productive value is not further diminished. Such legislation, to be effective, must:

(1) consider the entire estuarine watershed and all those transitional areas which are essentially influenced by water from an estuary.

(2) tackle the transboundry problems that may arise when an estuary's water quality depends on the control of pollution in more than one state.

(3) provide a management framework under which all states contributing pollution to the estuary and those states affected by that pollution can come together and develop a coordinated enforceable plan to protect the estuary.

(4) provide financial assistance to states involved in the cooperative effort so that they may implement pollution control measures, monitor the health of the estuary and the effectiveness of the controls, and conduct necessay research.

We support the method of estuarine water quality management proposed in the Howard bill. We recognize in this mechanism the sometimes discredited pre-1972 Act enforcement conference. However, we believe that the concept has greater utility in the case of estuaries than when originally put into effect almost a generation ago. The complex nature of multistate relationships lends itself particularly to the negotiation process envisioned in the conference concept; whereas that concept may not have been appropriate for enforcement actions or standard setting in an individual state.

For these reasons, we believe that an esturine management conference convened by EPA is a practical first step toward coordination of pollution control efforts among states. Establishing priorities for action and setting compliance schedules is absolutely necessary, so that serious pollution problems that concern more than one state are most effectively handled. The Howard bill apropriately authorizes financial assistance to the cooperating states for research and implementation, and to EPA for administration and monitoring of the program.

However, we are extremely concerned that the proposed program nowhere includes public participation in review of and comment upon management plan for the estuary. This should not be a process that takes place closed to public scrutiny. Indeed, the public would be expected to have significant contribution to make in protecting these resources. Accordingly, we recommend that Section 319 be amended to require public participation in the process of developing an esutarine management plan.

In addition, we suggest that Section 319 be amended to make clear that the contents of an estuarine management plan be as stringent as or more strigent than existing requirements of law. We are sure that the intent of the Section is not to establish a regimen of controls in conflict with or different from what would otherwise be in place in the individual states without this program, but rather to apply controls that might otherwise not be applied under individual state programs or to impose more stringent controls than might be so applied. While this is implicit in the language of the bill, we would urge that it be made explicit to avoid any future confusion that might be generated.

We recommend one further step for this Committee to consider in the effort to manage and protect our nation's estuaries. Section 402 of the Clean Water Act should be amended to require that NPDES permits contain a cumulative assessment of the impact of a specific downstream discharge on a downstream estuary. Although this requirement can be inferred from the language in Section 402, the fact that it is not specific has resulted in narrowing the scope of the evaluation of the effect of the discharge to the proximate discharge area. The result is that while water quality standards in a single tributary may be met, the impact on the downstream estuary may be significant or even unacceptable unless the combined synergistic effect of its many tributary inflows is considered.

Finally, at the risk of stating the obvious, we assume that if there are existing programs effectively addressing problems in a given estuary, that this program should be in support of those efforts and not require those states to start anew. An example immediately comes to mind in the case of the Chesapeake Bay where millions of dollars have been spent to date and work undertaken to develop a plan comparable in many respects to what is recommended here.

Thank you for your attention to my remarks. I would be pleased to answer any questions that you may have on my testimony.

STATEMENT PRESENTED BEFORE THE HOUSE SUBCOMMITTEE ON WATER RESOURCES, COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, BY EDWIN H. CLARK, II, SENIOR ASSOCIATE

My name is Edwin H. Clark, II, and I am pleased to be here to discuss some of the problems of nonpoint source pollution and its impact upon water quality in our streams, rivers, lakes, and reservoirs. I am currently a senior associate at The Conservation Foundation, a not-for-profit environmental policy research organization, where, among other activities, I and my colleagues are completing a comprehensive

study of the types and economic costs of impacts caused by sediment and other pollutants resulting from soil erosion.

In my testimony today I would like first to make some observations about the importance of nonpoint sources of pollution and then summarize for you some of the results of The Conservation Foundation study. They indicate that our failure to control nonpoint source pollution is imposing billions of dollars of costs on the country annually. Finally, I would like to make some observations on the prospects and needs for controlling nonpoint sources.

IMPACT OF NONPOINT SOURCES OF WATER POLLUTION

In 1977, 6.4 billion tons of soil eroded from non-federal lands, above and beyond normal geological erosion. This is equivalent to about 30 tons of soil for each person in the United States, or to an average of more than 220 tons of erosion every second of the year. About 1.5 billion tons of this was wind erosion from cropland and rangeland in the Great Plains states. The rest was water erosion of cropland (39%), pastureland and rangeland (30%), and a variety of other sources including forestland, streambanks, gulleys, roads, and construction sites.

Some simple comparisons on agricultural erosion are instructive. For instance, the state of Iowa is famous for its corn production. But it also produces a lot of erosion. In fact, for every one ton of corn raised by an Iowa farmer in 1977, five tons of soil were eroded by water from that state's cropland. Nationally, for each pound of food consumed in the United States, over 22 pounds of soil were eroded from all agricultural lands by water. The average rate of water erosion of cropland alone was more than 89 tons per second.

Much of this erosion comes from a relatively small portion of the land. This is an important fact to remember when considering the need for erosion control measures. For instance, less than 3 percent of the land, eroding at a rate of more than 25 tons per acre per year, is producing almost a third of the total erosion (and even a higher proportion, almost 60 percent, of the "excess" erosion—this is the erosion in excess of 5 tons per acre which is (somewhat arbitrarily) considered to be safe).

The majority of this eroded soil eventually reaches the nation's waterways, and once there can cause serious problems. In states such as Kansas and Illinois, it is one of their most serious water pollution problems. It can destroy valuable fish populations in streams and bays, increase the cost of water treatment for downstream users, make valuable recreational facilities essentially useless, increase significantly the flood damages along rivers, interfere with navigation, and silt up valuable storage space in lakes and reservoirs. According to different estimates, nonpoint sources of pollution are responsible for 66 to 99 percent of the suspended solids in our water ways. And most of this comes from cropland erosion.

Other, perhaps more serious problems arise because nonpoint sources not only include natural soil but other contaminants such as fertilizers, pesticides, other toxic substances, and oxygen consuming organic materials. Pesticides and other organic and inorganic compounds can be toxic to fish, and potentially to humans. Fertilizers can be a source of potentially toxic nitrites in drinking water supplies, and stimulate algae growth, accelerating the eutrophication of lakes and reservoirs. As algae die and decay, they, along with the plant residues and other organic materials carried into the stream, use up oxygen, often reducing the oxygen level so much that some fish species can no longer survive. These off-site pollution problems are exacerbated when farmers try to compensate for lost productivity by using more fertilizers, pesticides, and other inputs, without reducing the amount of erosion.

Nonpoint sources contribute an estimated 80 to 92 percent of the nitrogen, 42 to 94 percent of the phosphorous, 49 to 76 percent of the BOD loadings, and up to 98 percent of the bacteria entering our waterways. In all cases, a substantial majority of these loadings come from agricultural lands.

In the draft 1981 report required under section 305(b) of the Clean Water Act, nonpoint sources were identified as a contributing factor in 94 percent of the stream accounting units where water quality problems and their likely causes were identified. This report does not indicate the relative importance of nonpoint source pollution problems, but does suggst that it is extensive. Some information on its importance is provided by an analysis conducted by Resources for the Future which concluded that about one-third of the nation's waters that would still not be in compliance with water quality standards after all point sources had installed BPT or, for POTWs, secondary treatment would come into compliance if nonpoint source controls were implemented on cropland.

THE OFF-SITE COSTS OF EROSION

The study being completed by The Conservation Foundation indicates that the total economic costs caused by sediment and pollutants associated with erosion amount to over $3.0 billion dollars a year. We believe that these are conservative estimates. For instance they do not include a number of damages, such as damage to the fish and wildlife in streams, which are particularly difficult to value in dollar terms. Thus, the total costs could well be twice the $3 billion we have estimated.

Some of these costs result from impacts commonly associated with water pollution; for instance, $100 million for increased water treatment costs, another $70 million for damages to inland commercial fisheries, and $120 million in damages to recreational opportunities.

But many of the costs are of a different type, and may not normally be linked to water pollution problems. For instance, about 25 percent are related to dredging. The Corps of Engineers spent $362 million in 1980 dredging harbours and navigation channels. The purpose of the dredging is to remove sediment deposits, and sediment comes from soil erosion. These federal expenditures are matched by like amounts spent for dredging by state and local governments and private firms.

The sediment is also filling up our water supply and flood control reservoirs, and this accounts for about 20 percent of the costs. Twenty percent of the capacity of new reservoirs—$300 million a year—is built for the sole purpose of storing sediment. An estimated one million acre feet of existing reservoir capacity is being filled each year by sediment. That capacity has to be replaced, or someone will be short of water. If we tried to replace this lost capacity as it disappered, the bill would probably be over $300 million a year. In flood control projects and other small reservoirs, the project managers are able to remove the sediment—and probably pay over $200 million a year doing so. And finally, reservoir and lake owners are spending significant amounts—an estimated $30 million a year—to attempt to control algae, seaweed and other problems caused by nutrients associated with soil erosion.

The other major cost area is flood damage. This accounts for over 30 percent of the total costs. Sediment-clogged channels flood more often and the floods are bigger than they would be if there were no erosion. Even more important is the damage caused by sediment—a major portion of urban flood damages are not caused by the water, but rather the sediment and other pollutants it leaves behind. And sediment deposits also destroy millions of dollars worth of agricultural products every year and reduce the long-term productivity of the flood land.

The final type of cost is the cost of removing sediment from drainage ditches and irrigation canals. These channel maintenance costs amount to an estimated $200 million per year.

Again, the sum of all these preliminary estimates is over $3.0 billion a year. And this does not include many impacts for which there is not enough quantitative information to make even crude cost estimates.

In addition to emphasizing that these estimates are still preliminary, I should also point out that even the most complete soil conservation or nonpoint source pollution control program could not result in these costs being entirely eliminated. Many of them are caused, at least in part, by "natural" erosion processes that can never be completely controlled.

Even so, I believe our study demonstrates the very high costs that the nation is experiencing because it has not yet attempted to control nonpoint sources of pollution. If we are serious about attaining our goals of fishable, swimmable waters, we are clearly going to have to do something about these sources.

WHAT CAN BE DONE

Having established that nonpoint source pollution is a serious problem which is imposing significant costs on the nation, the question is what can we do about it? Answering this question requires judgments about technology, knowledge, economics and institutions.

With respect to most sources, the technical problems are largely solved. For most agricultural lands, techniques for reducing soil erosion have proven their effectiveness over the past four decades. Effective erosion control techniques have similarly been demonstrated for construction sites and for surface mining.

However, in some areas the technical answers are not so obvious. For instance, there is still a fair amount of uncertainty about the success of different measures for controlling nonpoint source pollution from urban areas. It is also true that some of these technical solutions may cause problems of their own. There is still some debate, for instance, on whether no-till agriculture decreases or increases the

amount of pesticides (particularly herbicides) carried into our streams or ground water.

Nevertheless, I think it is fair to conclude that in most cases, we have technical solutions to solve the problem.

The next question is do we have sufficient knowledge? For instance, do we know which techniques should be adopted at any particular location and where they should be applied in order to control water quality problems? Here again I conclude that in most cases we do have sufficient information. We do not need to initiate a new planning program. I have personally reviewed hundreds of documents produced by the Section 208 planning process. Many of these demonstrate that the relevant state or local agencies had substantial knowledge about the extent and causes of their water quality problems. The products of the Section 208 planning process, the information collected for the Section 305(b) water quality reports, the knowledge of the local soil conservation officials, and other such sources of information should suffice, I believe, to allow us to take action on these problems.

The next question is whether we can afford to solve these problems. In many cases the answer is clearly yes. For instance, several techniques available for controlling erosion from agricultural lands are not only inexpensive, but may increase a farmer's profits. Of course, these techniques are not suitable in all cases. And in some cases, the required techniques can be quite expensive—probably too expensive for many farmers with their currently depressed incomes or cities with their depressed revenues to afford without financial assistance. Although there does not seem to be a need for another massive grants program to help abate nonpoint source pollution, some such assistance may be required in such special circumstances.

The final question is whether we have the appropriate institutions for achieving this cleanup. This is probably the most uncertain area of all. We have, over the past three decades, spent over $20 billion on federal programs to reduce soil erosion. But we are still losing 2 billion tons of soil a year from our cropland. Our soil erosion control programs have depended primarily upon farmers to volunteer to adopt the erosion control measures. Millions have done so, and the requests for assistance always exceed the amount of funds appropriated. But those farmers suffering the most serious erosion problems are not always the ones most anxious to volunteer. If we are to adequately address the problem of nonpoint source pollution, I believe that we will probably have to go beyond depending only on volunteers. There will need to be measures that can require more reticent land owners creating serious problems to take action as well.

The same is true for urban areas. We have yet to achieve the goals we established for cleaning up municipal sewage. To some extent this is because the federal government has not been able to provide the matching funds that the municipalities need. But there has also been a reluctance on the part of some municipalities to deal with the problem—after all, it does not affect them, only the cities downstream. And, quite understandably, the state and federal governments have been hesitate to force the reluctant cities to take action. These problems would certainly not become simpler if we were to attempt also to control nonpoint source pollution from urban areas.

There are, of course, already a number of federal programs which can and should assist in this process. The Department of Agriculture's soil and water conservation programs should be focused on controlling nonpoint source pollution from agricultural lands. Similarly, the Departments of Interior, Transportation, and Housing and Urban Development have programs which can help control nonpoint source pollution from mines, urbanized areas, and construction sites. And other programs such as the Pesticide Control Law, the Municipal Waste Treatment Grants Program, and the Toxic Substances Control Act can help as well. Any nonpoint source pollution control program should make use of all these existing laws and programs to the maximum extent possible.

And such a program ought to place the major responsibility for its implementation at the state or local level. Controlling nonpoint source pollution requires specific knowledge about specific problems, and this sort of insight cannot be gained by bureaucrats sitting in Washington of in EPA's regional offices. But state and local authorities will require the strong support of the federal government, including, I believe, additional legislation which will help (and in some cases even force) them to do what needs to be done.

This concludes my prepared statement. I would be happy to attempt to answer any questions you might have.

Mr. ROE. Please proceed.

TESTIMONY FROM A PANEL CONSISTING OF DALE McGREER, FOREST HYDROLOGIST, POTLATCH CORP., ON BEHALF OF THE AMERICAN PAPER INSTITUTE AND THE NATIONAL FOREST PRODUCTS ASSOCIATION; HOPE M. BABCOCK, DEPUTY COUNSEL, NATIONAL AUDUBON SOCIETY; AND DR. EDWIN H. CLARK, SENIOR ASSOCIATE, THE CONSERVATION FOUNDATION

Mr. McGREER. Thank you, Mr. Chairman. I will be brief. Again, I am a forest hydrologist for the Potlatch Corp. I appreciate the invitation to testify for the American Paper Institute and the National Forest Products Association concerning the control of silvicultural nonpoint source pollution.

We will also share our views on H.R. 4037, which we generally support.

Our associations have been involved in the Clean Water Act, section 208 process since EPA first emphasized this program as a means for addressing nonpoint source pollution in 1975. Through section 208 EPA fostered State programs to: (1) assess the impacts of forestry activities on water quality; and (2) devise best management practices, BMP's, and control programs where necessary.

Through the section 208 process, States determined that silvicultural activities are not a major, nationwide water quality issue. Nevertheless, localized problems are recognized.

In most cases, sediment is considered the primary source of pollution from forestry activities. However, sediment from forest lands is estimated to be less than 4 percent of the total man-caused sediment in the Nation's waters. This is particularly significant since one-third of this Nation is forested.

There are almost as many types of section 208 programs for silviculture as there are States that worked with this category. The variation strongly suggests: (1) the extent of the problems identified in each State; (2) the nature of ownership of forest lands; (3) differences in the most effective way to reach people causing the problems; and (4), the nature of existing implementation programs

Our experience to date convinces us that three principles are essential to any type of program to address forestry water quality problems.

First: Because of the variability of nonpoint source problems, it's imperative that efforts continue to be focused at the State level. Controls must be applied in a site-specific fashion.

Second: States must continue to have the option to use a wide variety of nonregulatory and regulatory programs for nonpoint source control. The nonregulatory approach is more effective in reaching large numbers of small nonindustrial landowners.

Finally: The variability in silviculture activities and water quality impacts makes forestry expertise an essential part of BMP development and program implementation.

These principles have been embodied in almost all the section 208 silviculture programs adopted to date.

Currently, 40 States have developed silviculture nonpoint source control programs under section 208. Seven of these are regulatory programs. In addition, four States have emphasized existing regulations designed to control all sources of organic debris or sediment in streams.

The majority of States that address silviculture have adopted nonregulatory programs. These programs involve education efforts to inform operators about BMP's which have been developed. They often encourage adoption of BMP's by integrating water quality protection into normal forest extension planning. This type of program occasionally uses financial incentives to promote adoption of BMP's.

In our recent survey of State programs, included for the record, four problems that the States most frequently identified as impeding their progress were: (1) lack of funds; (2) limitation of agency personnel; (3) problems in implementing existing controls; and (4) the difficulties of contacting and informing small landowners.

Of the 40 States with a silviculture program, 30 projected continued operations whether or not Federal funds are available. Some States are anticipating an adjustment period as programs are finalized. Other States will make decisions about future program direction based on the results of ongoing assessments. Finally, a few States have reported their programs will be downgraded because of lack of funds.

In our survey, we also found that several States have conducted field assessments of their programs. Most of these States have shown effective water quality protection, and an increased awareness and implementation of BMP's. Most important, the States indicate that water quality concerns are being integrated into normal forest operations. In summary, the overall status of silviculture programs is good, and the programs are working.

Turning now to H.R. 4037, we believe it builds on the experience gained through the section 208 process. It is a positive step forward in the Federal-State partnership to deal with nonpoint source problems, and provides assistance needed by many States. API-NFPA support H.R. 4037 with two modifications.

First: The bill would require States to identify Federal activities which are not consistent with the State nonpoint source program and recommend modifications. The effective Federal agency would modify its activities to conform with the State program. API-NFPA agree that Federal programs should be consistent with State nonpoint source controls. However, H.R. 4037 appears ambiguous and could result in substantial resource burdens on Federal agencies.

To provide a greater degree of certainty, we prefer the approach outlined in S. 2006, which references current Federal-State program coordination procedures outlined in an existing Executive order and agency regulations.

Second: H.R. 4037 would allow EPA to convene interstate management conferences for nonpoint source problems that affect more than one State. API-NFPA support this general approach to dealing with interstate problems. However, such conferences should not be granted unilateral authority to modify existing State permits or plans. H.R. 4037 appears to provide this authority and could be extremely disruptive to existing programs. More data on long range transport of nonpoint source pollution must be collected before interstate problems can be resolved in this fashion.

Thank you for the opportunity to testify.

Mr. ROE. Ms. Babcock.

Ms. BABCOCK. Good afternoon, Mr. Chairman.

My name is Hope Babcock and I'm here today representing the National Audubon Society, a nationwide nonprofit organization with over one half million members dedicated to the wise use and conservation of our natural resources and protection of the environment.

A high priority of our members is protecting the quality of our Nation's waters and their adjacent habitat. Therefore, it is with extreme interest that we have been following this year's debates on reauthorization of the Clean Water Act.

I have identified two areas of concern in my written testimony: nonpoint source pollution and protection of bays and estuaries. In the interest of time today, I would like to very briefly summarize my remarks on nonpoint source pollution and focus instead on bays and estuaries.

Let me summarize that discussion on the nonpoint source pollution problem by saying that in my written testimony I described the nature and severity of the problem and the need for a Federal program now. I identified what Audubon considers to be eight essential elements of such a program, state our unconditional support for the Oberstar bill, and commend the Congressman for his excellent job in putting together a nonpoint source legislative program, and note some of the areas in the bill where we think minor changes could be made to clarify its intent.

Before I leave the topic of nonpoint source pollution, I would like to blow our own horn a little bit and mention to you an article that appeared in the most recent edition of Audubon Magazine on soil erosion by Peter Steinhart. It contains very graphic illustrations showing the off-farm impacts of soil erosion on water quality.

If the Chairman would like, I would be more than happy to provide copies of the article for insertion into the record.

Mr. ROE. I think it would be good to provide copies, and also, we'll enter a copy of the article into the record at this point if there's no objection.

Ms. BABCOCK. Thank you.

[The article referred to follows:]

The Edge Gets Thinner

by PETER STEINHART

ON A DECEMBER morning in 1977, Sheriff Larry Kleier drove his patrol car southeast from Bakersfield, California, into the Tehachapi Mountains. It was a cold, clear day, but unusually windy. The landscape was vast and lonely. It was the second year of drought, and the farmlands of the San Joaquin Valley were gray and blistered. The irrigated fields had been plowed in anticipation of spring planting. But the foothills rose above them stubbly and gray, tattered ghosts of the usual golden-brown California hills of year's end. Ranchers had taken their cows off the hills for lack of forage.

The road climbed through the barren hills. A half-hour east of town, Kleier crested a ridge and dropped down into the broad, southwest-running valley of Caliente Creek. As he drove up the ridge, he saw only blue sky and sunlight over the hood of the car. But when he started down into the valley, everything changed. "Just as I came over the hill," he says, "it was like someone turned off the lights." The wind became extremely violent, and an enormous dust

After many years of conventional farming, a hillside in Whitman County, Washington, shows signs of severe topsoil erosion—evident in vast areas where a new wheat crop has not begun to grow. On a nearby hillside (inset) where a massive soil slip has occurred, erosion is measured at a rate of 300 tons per acre per year.

BOTH: TIM MAGER, SOIL CONSERVATION SERVICE

TIM McCABE, SCS CONSERVATION SERVICE

Strip-cropping in Maryland alternates corn and soybeans to reduce soil erosion.

cloud enveloped the car. "I started trying to find a way to go back, but I couldn't stop or turn around. I heard the traffic going by on the other side of the road, but I couldn't see it."

A sudden burst of wind raked the windshield with rocks and gravel, instantly frosting it milky white. Kleier could barely see the end of the hood. He knew there was an overpass a mile ahead, and it might shelter him from the vicious wind. "By the time I got there," he says, "I just couldn't drive anymore." The windshield was opaque. "And about that time, too, the rocks started breaking my windows." First the back window shattered. Then the side windows. Dust filled the car. The radio stopped working. It was hard to breathe.

A number of drivers already had taken refuge under the overpass, leaving no room for Kleier's patrol car. He abandoned the cruiser and jumped into a pickup truck at the edge of an orange grove. When the windows of the pickup blew out, he and the driver ran to a motorhome under the overpass. Safe inside, Kleier saw that during his run from patrol car to pickup truck and then to the motorhome, the wind had scoured all the finish off his shoes and sandblasted the handle of his revolver. Etched upon the gun was the clear outline of his holster.

Outside, the dust storm tore open the countryside. Near Arvin, winds over 100 mph broke wooden telephone poles and buckled steel powerline supports. Utility poles left standing had rocks the size of nickels embedded in them twenty feet above ground. Wooden fenceposts were sawed through by wind-driven sand. A 2,000-gallon tank was blown off the Comanche Point Oil Field and never found. Cattle suffocated in the dust at fencelines and were found with the hair and skin sandblasted off their hindquarters. The wind spaded two feet off the tops of freshly plowed fields, lofted the soil high into the atmosphere, and carried it hundreds of miles. It came down days later as red rain in Davis and Red Bluff.

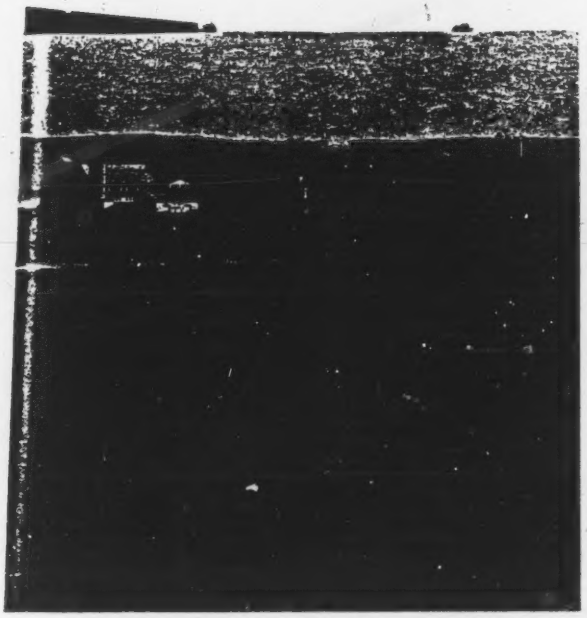
The storm pinned Kleier and other travelers under the overpass for twelve hours. When Kleier returned to his patrol car the next day, all the windows were gone. The interior was filled with rock and sand. Tendrils of sand crept out the windows of the sheltered side and slithered away. In Arvin, groundwater pumps were so choked with silt that there was no drinking water for a week. A grade school stayed closed because no one could free its locks of sand. In the following weeks, residents of the area reported new cases of bronchitis and other lung problems, which many said were caused by pesticides sprayed on the fields and then broadcast with the dust. And a month later, the drought ended abruptly. Overnight, nearly an inch of rain fell. It turned the bare hillsides into rivers of mud which washed down into the valleys, slumped across the roads, closed the interstate highway, and made a travesty of fields and pastures.

The velocity of the wind and the severity of the drought may be dismissed as acts of God. But the volume of dust moved by the storm was due much to human activities. Geologists estimate that the winds carried 25 million tons of soil from foothill areas that the California Department of Conservation had warned were "consistently overgrazed." On the hills, you could look down fencelines and see that heavily grazed lands had lost their topsoil, while on less intensively grazed lands across the fence, both grass and soil were still in place. The geologists estimated that another 25 million tons of soil blew off the freshly plowed fields of the valley. They noted that in recent years the farmers had torn out the windbreaks planted in the 1940s to contain wind erosion.

That year, 1977, was a big one for dust storms. In February, a storm ripped three feet off the tops of some eastern New Mexico wheat fields and sifted the dust across the eastern states and onto the decks of ships hundreds of miles out on the Atlantic. New Mexico, too, had been the victim of drought. But farm-

Plantings of buffalo berry in North Dakota cut wind erosion—and feed wildlife.

JOHN ALEXANDER, SCS CONSERVATION SERVICE



es had recently increased the acreage planted to wheat, and to water new fields they had installed pivot irrigation systems. To accommodate the machinery, they, too, had torn out the old windbreaks.

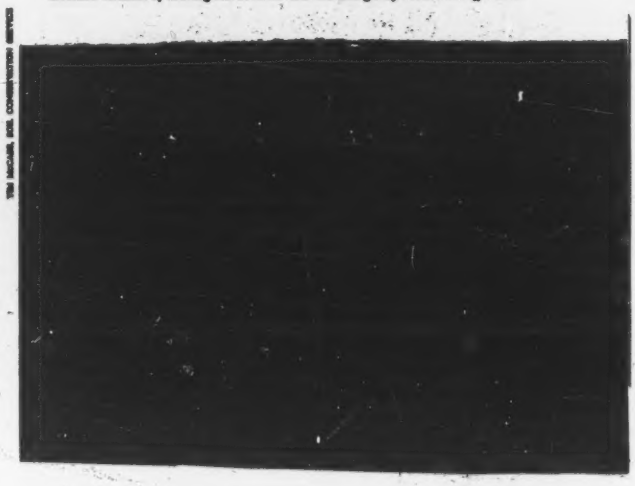
Such storms are dramatic instances of a process that is going on every day at a more modest, but no less threatening, level. The soil of this continent is being blown, washed, and bulldozed away. Human activity is very much to blame for the loss. And unless we exercise more care, the world's growing population may outstrip the land's ability to provide food and shelter.

Erosion is a natural process. Rainfall washes topsoil into rivers. Deltas plod seaward where the rivers run out of land. Windblown silt polishes the sandstone cliffs of the West. The soil that thus blows and washes away is apt to be replaced as bedrock weathers, plants decay, and dust comes to rest. But human activity accelerates erosion far beyond the replacement rates of nature. Highway construction in Virginia produced 200 times the erosion occurring on undisturbed lands nearby. Off-road vehicles scour soil and bedrock at an annual rate of thirteen tons an acre from parts of the California desert that cannot replace one year's loss in a thousand years. Sediment washing off construction sites in Maryland yielded losses of 670 tons per acre, 36 times the rate of loss on nearby farms and 100 times natural rates. Surface mining near Sheridan, Wyoming, increased erosion elevenfold. Logging near Newport, Oregon, quintupled the amount of sediment carried into creeks.

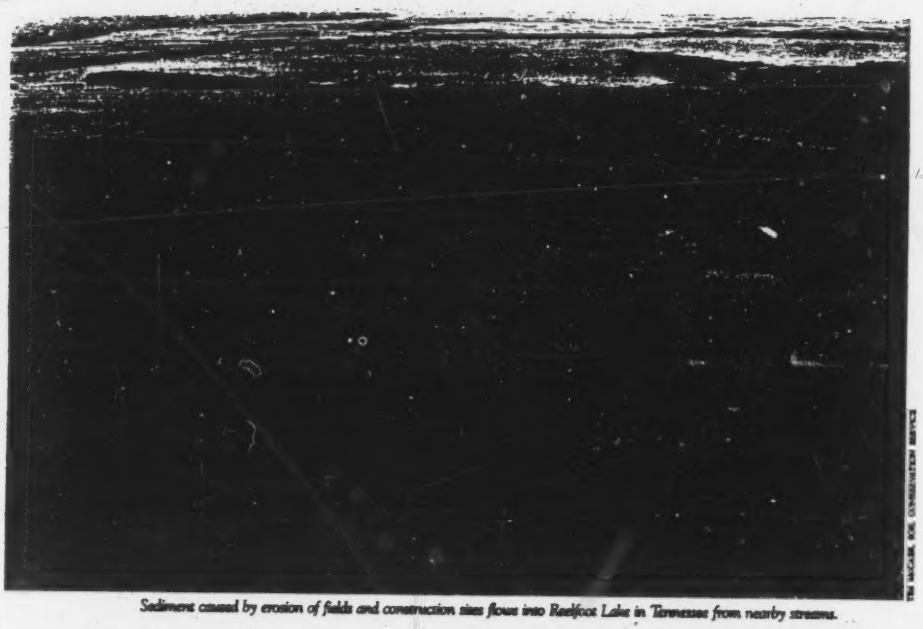
All that soil out of place causes serious problems. Construction of summer homes around Lake Tahoe has clouded the waters of what was once touted as the clearest lake in the West. Near Salt Lake City, a hillside slid into a residential subdivision after off-road vehicles were allowed to strip it of its vegetation. In Iowa, walleyes and bass, which require clear water, are being replaced by mud-loving carp and catfish. Logging on the edge of Redwood National Park increased the sediment load of creeks to the point that they began to widen, thus undermining the tall trees along their banks. That led to a bitter fight over park expansion. Earl Brabb of the U.S. Geological Survey estimates that landslides cost Americans a billion dollars a year. And there are consequences yet unmeasured. Dust from the San Joaquin Valley storm of 1977 brought valley fever, a potentially disfiguring fungal disease, to the San Francisco Bay area. Clay particles washed off farmlands carry pesticides and herbicides into drinking water.

The loss is most pronounced on the nation's farmlands. On the farms, we are losing more soil than we were losing in the years of the Dust Bowl. The U.S. Department of Agriculture reports that one-third of the nation's cropland is eroding at a rate of more than five tons per acre per year, the "T (or tolerance)

Contour terraces of bromegrass in Iowa hold soil and gently release runoff water.



THE NATURE CONSERVANCY



THE MACLAIN, SOIL CONSERVATION SERVICE

Sediment caused by erosion of fields and construction sites flows into Reelfoot Lake in Tennessee from nearby streams.

value" at which most fields are said to be able to replace soil. The General Accounting Office reports that 84 percent of the nation's farms have losses greater than five tons. In some places, the losses are shocking. In western Tennessee, farms are losing 150 tons per acre per year. In eastern Washington, losses on some farms are said to reach 200 tons. A million acres in the Palouse area of Washington and Idaho are losing an average of 14 tons per acre, or a twelfth of an inch off the top, each year. Some Idaho soils that were originally a foot deep are today only six inches.

Former Iowa Governor Robert Ray says, "For every bushel of corn that we produce in Iowa, we lose about two bushels of soil. It is estimated that the fertile topsoil which once blanketed Iowa like a deep black cover has been reduced from its historic depth of fourteen inches to some six to eight inches in many parts of our state. It takes 250 to 1,000 years to build one inch of topsoil. We have effectively lost soil that took as much as 6,000 years to produce."

The Soil Conservation Service estimates that in 1977, 2.8 billion tons of soil blew and washed off America's croplands, and another 3.6 billion tons slipped away from streambanks, construction sites, rangelands, and forests. The displaced soil clogged drainage ditches, filled ponds and reservoirs, paved streambeds and estuaries with silt, suffocated crops in neighboring fields. It increased the need to dredge and dike against future floods. It carried into the water herbicides and fertilizers, bringing to our household taps chemicals which brawl with the cells inside our bodies.

And perhaps most important, the loss of soil means the loss of agricultural productivity. Says Richard Cruse, professor of agronomy at Iowa State University, "By removing that top layer, we're removing the cream. It's got the most nutrient matter, the best soil structure for aeration, moisture, and temperature. When we remove that, we're substituting the unweathered parent material. Generally such soil has poor aeration, poor infiltration, and poor structure. It just isn't ready for plant growth." In the southern Piedmont, a six-inch loss of soil reduces crop yields by as much as 40 percent. The Department of Agriculture estimates that soil erosion in the past half-century trimmed enough soil nationwide to reduce crop yields by 40 percent. If erosion continues at present rates in the corn belt, corn and soybean yields may decline 30 percent over the next fifty years. Farmers hope to make up for the lost fertility by applying more fertilizer and herbicides. In the past fifteen years, herbicide and pesticide use is up 50 percent, and fertilizer is up 75 percent. But eventually there is not enough soil to hold plant roots and moisture. It becomes too full of clay and too acidic. It may not grow anything.

R. Neil Sampson, executive vice-president of the National Association of Conservation Districts, estimates the current loss from sheet erosion—the movement of soil by water—is equivalent to a million acres of farmland a year. Wind erosion on the Great Plains costs another 250,000 acres. Over the next century, says Sampson, at this rate, we'll lose the equivalent of 62 million acres, an area the size of Oregon and roughly the amount of land we

needed to produce our entire export of food in 1980. Norman Berg, former chief of the Soil Conservation Service, predicts that if present trends continue, world food supplies will be imperiled in less than a century.

Sampson warns that if erosion retires land from food production, there won't be land to replace it. "There isn't any surplus land in the current cropland bags," he says. "Farmers are using virtually all of the cropland they can get a plow into, and using it hard." In 1977, it took America 381 million acres to produce food and fiber to meet its export and domestic needs. By 1997, it will need 440 million acres, assuming improved technology can raise per-acre yields 1.1 percent a year. If technology doesn't improve yields, we'll need 575 million acres. We have only 540 million acres of potential cropland; 51 million of them are now pasture, and 31 million are forest. We may face some difficult choices.

Moreover, says Sampson, we can expect to lose 40 to 50 million acres of current cropland to urban sprawl. He estimates that 320 acres of farmland are urbanized every hour, a rate that by the year 2000 could mean losses equivalent to all the farms in Missouri. In addition, 1,500 acres of rangeland and 2,250 acres of forest are converted to urban use daily. If urbanization continues at this rate, Sampson guesses, we may have only 450 million acres of cropland in the year 2030. And if the soil continues to slip away from the farms, we just won't make it.

It is a worldwide problem. The United Nations predicts that world population will increase from 4.4 billion today to 10.5 billion in 2110. Food demand will triple. The earth could feed all those people if all cultivable land were used efficiently and there were unrestricted movement of the harvested commodities. But that isn't what happens today. And in the rush to produce more food, we are uprooting forests, ravaging marginal lands, and pushing good soils hard. Landslides destroy terraced farms on the hillsides of Nepal as peasants strip the hilltops of firewood, and the silt-charged rivers flood the Indian plains below, washing away grain fields. Lester Brown of the Worldwatch Institute estimates that there is excessive erosion on one-third of the world's cropland. The Global 2000 Report commissioned by President Carter guessed that overuse of cropland and range destroyed six million hectares (nearly 15 million acres) a year, an area about the size of West Virginia, and that the losses were accelerating.

It isn't as if this nation has been ignoring the problem. Since the 1930s, we have built a considerable bulwark of science and bureaucracy to deal with soil erosion. The Soil Conservation Service employs 14,000 full-time workers. There are 3,000 soil conservation districts in America, offering to minister to the owners of almost every inch of American topsoil. They offer scientific advice on how to save soil and money to help farmers get started. The Soil Science Society of America has more than 6,000 members. There are perhaps an equal number of state and local officials charged with solving soil erosion problems. In the past half-century, we have spent $19 billion at the federal level alone to control soil erosion. And yet, the soil keeps slipping away in spring rains, blowing on the winds, falling into creeks. What in the world has gone wrong?

THE PALOUSE of eastern Washington is an immense rolled ocean of hills. The hills are steep. They crest high above you and break away in long, giddy slopes that take your breath to climb and strain your legs to descend. On the crests, there is so much sky that even the birds must feel lonely. It is a treeless, ice-age landscape, which a century ago was carpeted in the green and gold of native bunchgrasses. It still has the vast silence of time. But today the bunchgrass is gone. The sod has been turned over, and the hills

The pollution of Reelfoot Lake begins with runoff from an eroded Tennessee cornfield after a brief but heavy storm.

TIM MCCABE, SOIL CONSERVATION SERVICE

JOHN E. HAZZA, U.S. GEOLOGICAL SURVEY

JIM BRANDENBURG

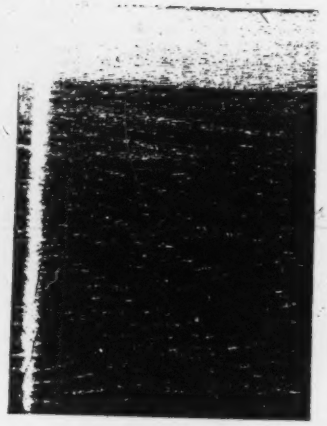
The catastrophic windstorm of December 1977 in California's San Joaquin Valley sandblasted this fencepost near Arvin. Winds of more than 100 miles per hour carried an estimated 25 million tons of soil from heavily grazed foothills.
Near Lubbock in west Texas, where cotton farmer Larry Shaw inspects his fields during a fierce dust storm, blowing sand from desert farming has nearly buried headstones in a rural cemetery.

are planted in wheat as far as the eye can see.

For thousands of prehistoric years, silt blew into the Palouse from the ancient lakebeds of the Pasco area, where today the Snake River joins the Columbia. The silt blew in unimaginable quantities. It buried the lava flows of the earlier landscape, leaving only a few ragged islands of basalt. In places today the soil is 200 feet deep. But not all of it is productive. "What you're getting your crop off of is the top six feet," says Dusty Eddy, a conservationist with the Soil Conservation Service in Colfax. "And you're producing about 75 percent off of the top eighteen inches. We usually figure two and a half bushels of wheat per acre for every good inch of topsoil. Otherwise, the farmer's getting his yield out of fertilizer."

In February, the hillsides turn emerald green, the color of winter wheat just erupting through the dark-brown soil. It is an excellent baking wheat, and Washington's leading export. But you can see that the land is paying for this greening. The fields have been bared and harrowed to break the clods. The furrows run for miles, up, over, and down the hills. The lines are dictated by the price of fuel and the size of the machines rather than by the contours of the land. There are attempts to run the furrows around the hills, but the fields are vast, and the hills bubble up through them like boiling cream.

"It's really tough to stay with the slope," says Eddy. So, when the rains come in February and March, the furrows rush the water straight down the slopes, gathering it into rills and runnels, gullies and chasms. The gullies spread like cracks across a windowpane. The soil is so yielding that if you press down on it with a thumb, it springs back like fresh-baked bread. A gully in this doughy ground may be three inches across but a foot deep. Below the slopes, where the displaced mud piles, it buries crops. It lumps up to the roads, where the wind from passing cars



shakes it like gelatin. And then it dries into mirror-like playas of silt.

Little by little, the topsoil gets thinner. A tenth of the Palouse, 210,000 acres, has lost all of its topsoil. Another 60 percent has lost from one-fourth to three-fourths of its topsoil. Every year, the rivers carry three million tons of sediment out of the basin.

You can see the loss in what is left behind. In the spring the rivers run the color of fresh cement. Where the hills have been farmed hard, you see the peaks, locally called "clay knobs," standing out rusty red. The slopes beneath them, where the darker topsoils have fallen, are wren-brown. Most of the fences have been taken out to accommodate machines, but where they remain there are dramatic offsets of slope. On the uphill side of a fence, the land may be ten feet higher than it is on the downhill side. Brush at the fenceline traps the soil as it comes down, but tractors move soil away below the fence. Here and there, where the fence has vanished, it looks as if a slip fault has sliced open the slope.

Glen Miller has lived in the Palouse since he was three. Now seventy-seven, he still farms with his children and grandchildren. His farmhouse and barns cluster in a draw out of winter winds, eleven miles west of Colfax. The house is a modest brick building with a sheet-metal roof, ringed by a windbreak of spruce and black walnut. On the road, where his driveway begins, sits an empty herbicide bucket, adorned with a red spray-painted target and several bullet holes. Lining the driveway are fifty large silver yoke bells. Miller is a collector. Nailed to the wall of his workshop are nearly a hundred old tractor seats. Across the driveway, fifty calves stare morosely in a muddy feedlot. In a paddock next to them are three buffalo. Mostly, however, Miller collects farmland. He farms 21,000 acres over a forty-mile radius.

Miller is proud of the size of his operation. "I started in 1942 with zero," he says. In September of that year, he borrowed $3,000 to farm 800 acres. "We paid back the loan in September 1943, and we've been buying ever since."

Behind Miller's house is a hill carpeted in the deep green of newborn wheat. The hill rises steeply 200 feet to a crest from which you can look south into the Blue Mountains, thirty miles away. A dirt track winds up the hill. Gullies four or five inches wide snake up the track, miniature Grand Canyons ten inches deep in places. Miller's farmhand has stuffed them with rocks and old machine parts to try to stop them from grinning wider and sinking deeper. On the hillside to the west, even though Miller has tilled with the contour of the hill, there are freshly washed gullies. The water of a rainstorm overtopped the furrows and carved its way down. If the rills don't get deeper and wider, discing after harvest will fill them in and Miller's machinery will still cross the hillside. But, little by little, the soil will move down the hill.

"Our problem is excessive rains," says Miller. It only rains twenty inches a year here, but, he says, "The rain comes when the ground is frozen and there's very little residue on it to hold

TERRENCE MOORE, OPPOSITE PAGE TOM STACK

In Montana, speculators are breaking up grassland and planting the highly erodible soil in wheat. In California's Salinas Valley, deep furrows form a neat pattern, but plowing bares a lot of soil, and many farmers are switching to no-till practices.

the water. You see the small ditches, maybe two inches deep at intervals of ten inches, from the top of the hill to the bottom. Eventually, your topsoil leaves the top and sides of the hill and moves down. It's a tremendous problem."

Miller is not sitting idly while the soil washes away. "We always contour our ground," he says. "We circle the hill. We don't go up and down. We never use the moldboard plow because that flops the soil over like a pancake. The more residue I can leave on top, the more humus I will have for the plants. And we never burn stubble after it's harvested in the fall. After we harvest, we disc our ground. That throws the dirt first right and then left. Then we follow that with a chisel sixteen inches deep, which leaves furrows four inches in width. That allows the water to penetrate the soil instead of run off."

It sounds simple. But there are complexities. Miller puts most of his land into a three-year rotation. One-third is usually in summer fallow. "It's completely black. Nothing grows on it at all. We seed that in the fall to winter wheat. The following year we put in a spring crop of barley." In summer fallow, the ground is disced to turn the stubble over, then chiseled to pulverize the soil, then herbicided to keep the fields free of weeds. Summer fallow is thought to increase soil moisture by banishing weeds, which otherwise would soak up water. But the bare and pulverized field is vulnerable to wind and rain. Says Eddy, "It's probably the number-one contributor to soil erosion."

"At the present time, conditions are so vicious," says Miller, that some neighbors have gone to a single rotation: wheat in winter and fallow in summer. By "vicious," Miller means that prices have dropped while the costs of production have risen. "Our return is so much out of proportion to the cost of diesel, repairs, or taxes. Last night, I was figuring up my real estate tax. We got about an eight percent increase in our taxes. I've got to get that extra eight percent out of production."

One way to reduce costs, Miller says, is to "move in volume." For example, "We have a man driving a tractor. If he can pull a 90-foot piece of equipment instead of a 50-foot piece of equipment, look at the savings in time and passes across the field." Miller has invested a great deal of money in machinery to make such techniques work. He owns nine $100,000 combines, a small fleet of trucks and tractors, and a spray plane. But a tractor pulling a 90-foot wing of harrows or chisel plows cannot turn as tightly as one pulling a 50-foot wing. When the wider boom is hauled out, the tractor will be that much less able to move with the curves of the landscape, and more furrows will run straight up and down the hills.

One of the costs of production that troubles Miller is the interest he owes the bank for land and machinery. And that is the heart of his soil erosion problem. He farms 21,000 acres; but the only land he owns outright is a pair of cemetery plots. "None of our places is paid for," he says. "They're all under mortgage."

INDEBTEDNESS is a story familiar to farmers. American farming has always been troubled by overproduction, which keeps prices low. The answer has been for the individual farmer to try to produce more and to hope that other farmers will produce less. In 1972, the United States sold grain to the Soviet Union, and the following year Secretary of Agriculture Earl Butz determined that the world market would accommodate the surpluses which had kept prices low. He called upon farmers to "plant fencerow to fencerow." For several years, the price of grain went up as Americans sold overseas and the surpluses declined. It looked like a long-term trend, so the value of farmland rose. And farmers bought more land to take advantage of both higher grain prices and increasing land values. They bought at high interest rates.

They were sanguine. They were eager. The acreage devoted to export crops increased from 50 million in 1950 to 100 million in 1975, to 133 million in 1978. Since 1978, there has been a 39 percent increase in the acreage planted to wheat. One-third of America's farmland is now planted in crops grown for export. Most of the export goes not to feed the world's hungry, but to affluent countries like Japan and Russia, which can afford to buy it.

That expansion, however, caused serious erosion problems. The farmers tore out windbreaks to make more room for crops. They plowed up pastures and banished cows because grain was more profitable than hamburger, and that ended the practice of rotating hay and pasture to rest the land. In Iowa, four million acres formerly planted in hay or pasture were planted in corn or soybeans. Between 1967 and 1977, the land in row crops increased 27 percent nationally, and the land left in hay and pasture dropped 40 percent. Farmers cleared land too steep and dry to farm continuously. Four million acres of dry

rangeland on the high plains have been planted to wheat by speculators who see that once it is planted, they can borrow more money than they paid for the land. In effect, they are using the soil to grow credit.

The expansion had barely gotten under way, however, when the price of grain fell. Foreign competition lowered prices, and then the 1980 boycott of Soviet trade piled huge surpluses in grain elevators. Prices fell to 75 cents below production costs. Meanwhile, fuel and machines cost more, and interest rates stayed high. Farmers found themselves under pressure to squeeze more money out of the land, just to make their payments. They cut up more pasture and bought more fertilizer. Says an Iowa farmer, "A lot of farmers think if they are going to get a low price for their corn, the only thing they can do to maintain their standard of living is plant more acres."

Says Glen Miller, "The only way we're going to be able to stay in the ball game is to keep our production to the nth degree." That means planting land that is steep and prone to erosion. Eddy estimates that farms in Miller's neighborhood average soil losses of ten to thirty tons per acre per year—two to six times replaceable losses. Some of Miller's slopes have lost 100 tons per acre. "He's got some pretty rough ground," says Eddy.

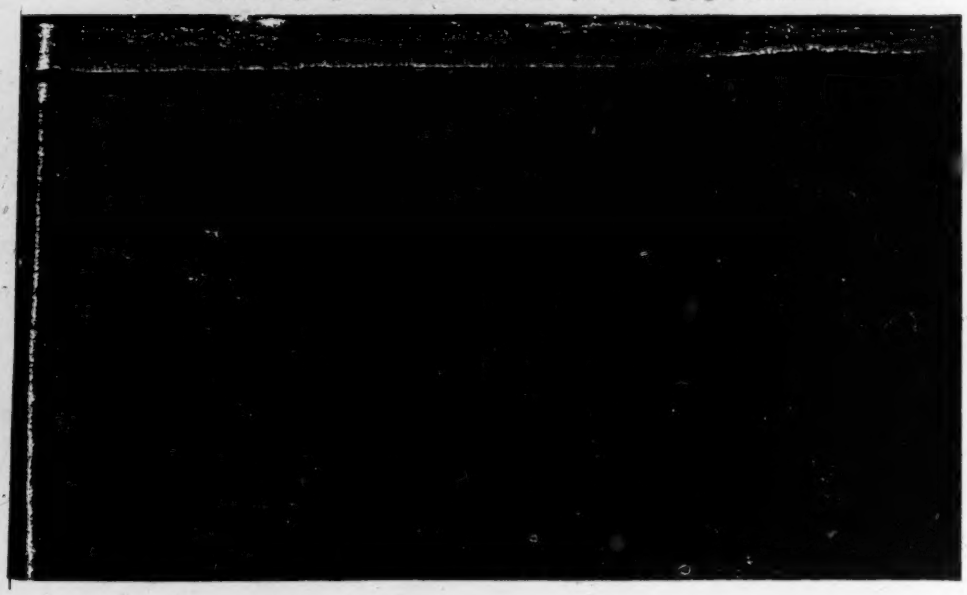
"If I didn't owe anything, that'd be duck soup," says Miller. "I could take these hills and put them all into conservation." He could let them sprout native grasses and graze a few cows on them. "But if we use conservation, I can't meet my payments. In the fall they don't ask you what you got in conservation. Creditors don't care where I get the dollar as long as I pay."

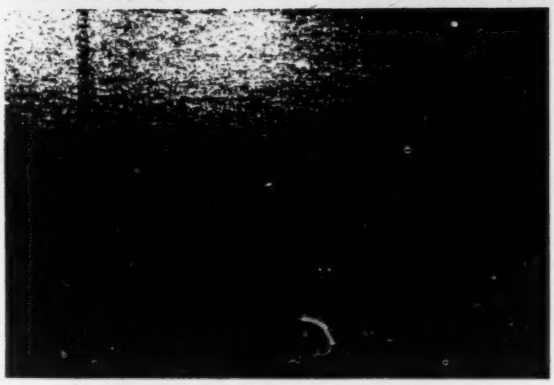
So interlocked are the problems of erosion and bank payments that farmers are often unable to separate them in their rhetoric. "I realize soil is our nation's heritage, and I'm doing everything in my power to conserve the soil and make my payments," says Miller. "I have one wish in life: that the soil that we have purchased remains in my family as long as possible. That's why I'm a firm believer in estate planning."

It is a strange sense of stewardship. Miller will rhapsodize about the soil. "I can take the soil and look at it and get a tremendous satisfaction because you can see everything in it. You can see a beautiful garden. You can see barley. You can see canyons, red hair, fingernails. All that stuff comes from the soil. I came from the soil, and I'm going back to it. I care about soil. It's our God-given heritage. I love it. I cherish it. I relish it."

But while Miller talks, his soil is sneaking away at rates far greater than the land can sustain. If that continues,

A fenceline separating rangeland from an ungrazed highway easement in California's Diablo Range dramatically illustrates the impact of intensive grazing, which leaves soil bare and compacted and vulnerable to erosion during winter rains. In southwestern Nebraska (below), a blowout covered acres in sign resulted from severe overgrazing, then wind erosion.





In California's San Joaquin Valley, a fence is left hanging over a gully cut by the windstorm of December 1977. Less than two months later, another storm of more common intensity blots the midday sun in Bakersfield and whips across denuded fields near Interstate 5, where a sign is whitened by sand.

one side, won't you lose both the productivity and the farm?

"That's the $64 question," he says. "It may go down in years to come. But it's going to take a lot of years, because as your soil erodes at the top, down below more soil is being brought into production. Maybe we'll completely use it up. Either I conserve, myself, as far as maintaining the land and making payments, or I lose the land."

OUR CONFUSIONS about soil erosion aren't merely economic. A large part of the problem is that we don't naturally think about soil. Soil is, to the human mind, an abstraction. When it performs its intended office, it is covered with greenery, invisible, out of sight and mind. When you see soil, it is usually out of place, muddying the water of a flood, tracked onto the living-room carpet, stuck to one's trousers after a slide into home plate. Or it is something dissected and impaired, a road cut sliced through a hillside, its mineral matter stripped of organic life, the mere bones bleached and drying in the sun.

In its proper place, soil doesn't fit the natural shapes of inquiry. It doesn't move. It doesn't have a discernible shape. The minuteness of its constituent particles frustrates the eye. The creatures that dwell inside it are drab and tiny and silent.

There is also a cultural screen between our eyes and the earth. When soil is visible, we think of it as dirt. It is a tradition that comes with the city. Originally, the word "dirt" meant excrement, and "soil," from the Latin *solum*, meant earth or ground. In the eighteenth century, as industrial centers grew and as new distinctions separated urban and rural people, "dirt" began to refer to mud, soil, mold, or earth. And "soil" became a verb, meaning to dirty, to contaminate with filth. In cities, people want to forget their rural roots. City dwellers wish to ride above the unpredictability of the earth and its harvest, because in the city there is already enough uncertainty. So they idealize themselves by wearing white clothing and spit-shined shoes, to show that they are free from the caprices that mire the life of the farmer.

The transformation of soil into dirt was a social change, not a new biological perception. Even before soil became dirt, few people saw deeply into the nature of the ground. Traditional farming is a slash-and-burn business. When you

wear out one plot of land, you move to another. As long as population was sparse, people could get away with shifting agriculture. They didn't think much about soil—if they noticed it at all. Preliterate societies generally classify soils by their color and by what crops grow out of them.

Those categories show only a thin understanding. Soil is lively and extremely varied. There are some 20,000 different soil types in the United States alone, perhaps hundreds of thousands worldwide. They vary by origin, parent materials, age, and climate. There are young soils which, because they have not weathered much, are rich in silicon, iron, and aluminum. There are old soils, like the red soils of the tropics, from which water has borne away most of the soluble aluminum and iron and left behind rust-coloured oxides. There are soils that have been built by exotic processes, such as the midwestern American soils that contain silts blown all the way from Asia.

Soil scientists grasp this complexity by thinking of soils in profile. If you core out a spine of prairie ground and stand it up, you'll see on top a dark, humus-rich "A" horizon nurturing the roots of grasses and the scurrying of worms and beetles. Below that is a lighter "B" horizon. Percolating water has leached out much of its aluminum and iron and carried clay particles down from above. It has less air and water and is more acidic, and so has less of the microscopic life that makes the upper horizon so lively. Below that is a "C" horizon, darker because some of the leached-out metals have come to rest there. But it is poor in organic matter because it lacks air and water. The "C" horizon extends down to bedrock, where the parent material is weathering away. Profiles of different soils show enormous variety of color, texture, depth, and chemical properties.

But to see such a profile is to see an abstraction. For to take a soil profile, you must tear the soil out of its context and look at it sideways. By holding it up to the aridity of air and the power of light, you will destroy much of the life inside it. In time, all that remains are the minerals and the skeletons of the perished.

To see soil as it is, one must think of it from the inside out. One must forgo even the idea of moving through the comparatively airy burrow of mole or gopher. One must shed one's sense of human size and bulk and drop into a lightless world. There will not be the depth, the color, the quickness, the leap and fidget of life on the open plain.

It is, nonetheless, a hospitable world. Soil holds moisture long after the rain has gone. It lets air circulate freely, and a well-aerated soil may be more than half air space by volume. When you pile up billions of grains of sand, silt, and clay, they rest against one another the way ping-pong balls might rest in a carton, with vast amounts of surface area for things to cling to and grow upon. A cubic inch of soil contains acres of surface area, and is inhabited by billions of creatures. And with all its space and air and moisture, soil is chemically active. Clay particles are electrically charged. They attract certain kinds of molecules and foster novel combinations with other kinds of molecules. Scientists study clay particles as a nursery for evolving organic molecules. Some suggest that life itself may first have evolved in the soil, rather than in the sea—that, indeed, as the Bible says, man was made out of clay.

There is movement in this maze of pools and passages. Air sifts through. Water trickles down, bringing minerals and organic matter from decaying leaves and the spent shells of beetles. Ants, gophers, worms, and larvae tunnel through, pushing subsoils up and

In San Jose, California, where a housing development was built on geologically unstable terrain in the foothills, landslides damaged homes and access roads. After repeated repairs, an impassable Boulder Drive was permanently closed.

JOHN G. MABANGLO, GRANT & GRAND PHOTOGRAPHERS

DAVID ROBINSON

STEVE GLORIOSO

Iowa farmers Norm Kading (top) and Cliff Stille. "There are, in Iowa, farms so precisely manicured and tended that you cannot find a gully."

pulling topsoils down, mixing and loosening, building ecosystems within ecosystems. Bacteria and fungi float on currents of air through the maze. If you can reduce your sense of scale and color to fit this world, you might compare it to what you would see if you swam over a deeply channeled coral reef. You would see colonies of things, strange shapes and movements sweeping over surfaces, teeming life on the exuberant edge.

You would see hundreds of millions of bacteria. Rod-shaped bacilli form capsules of sticky sugars, which bind particles of clay into barnacle-like clusters. Spherical cocci and spiral-shaped spirilla float among them, swim in ponds, and cling to clay particles. Some bacteria form nodules on the roots of plants, taking nitrogen from the air and passing it on to the plants. Others decompose carbohydrates or fix potassium. There are thousands of species of bacteria in a gram of soil, varied in function but so alike in appearance that a microbiologist may be unable to differentiate species without comparing their DNA. Scientists cannot list the entire bacterial fauna of a tablespoon of earth because once the soil is taken from the ground, its moisture, temperature, and aeration change. Oxygen-intolerant species may vanish and moisture-intolerant species may multiply. Scientists tend to describe bacteria in terms of what they do. Some they infer by the disappearance from the soil of certain carbohydrates or the sudden appearance of nitrogen compounds. Some they know because they cause disease. *Clostridium tetani* causes tetanus, and *Clostridium botulinum* causes botulism.

There are also millions of actinomycetes in a teaspoon of earth. Like bacteria, they are single-celled creatures, but they have rat-like tails with which they propel themselves through the lightless ponds of the soil. Most of them are saprophytic, living off the remains of dead plants and animals. Since they are adapted to life on other creatures, they don't readily grow on agar plates in laboratories, and so were dismissed as unimportant until recent years, when they were found to produce such useful antibiotics as streptomycin and tetracycline. They remain little known. Scientists don't even know how the toxins of disease-causing species work. But their presence is often easy to detect. The sweet aroma of freshly turned soil is the smell of actinomycetes, and evidence that they, like bacteria, are chemical engines, moving molecules from decaying to living plants.

The most abundant soil creatures are fungi. They spread their cottony filaments through grains of sand and clay and silt, binding them together, increasing the soil's ability to hold moisture, and constructing habitat for bacteria and multi-celled organisms. There may be more than 100 meters of thread-like hyphae in a single gram of soil. Fungi have given us medical products such as penicillin. But most fungi are decomposers, breaking apart the tough cellulose and lignin of dead plants, the shells of beetles, or the wings of butterflies, making the molecules available for use by the living.

There is an enormous commerce in chemicals at this microscopic level. That is why the soil is so productive. The fundamental processes of life simmer in the cells of bacteria and fungi. They cook and digest the soups of which we are made, and their interrelationships are exquisitely complex. One creature attacks the cellulose of a dead leaf and breaks apart molecules too tough for other species to dismantle. Another species takes the resulting sugars and turns them into simpler sugars. Yet other species turn the sugars into compounds of carbon or sulfur or potassium that can be used by growing plants. We fertilize the soil to

feed the microbes, which, in turn, tend the plants.

But the exact metabolic pathways are still imperfectly understood. Rachel Carson observed two decades ago, "The critically important subject of the ecology of the soil has been largely neglected, even by scientists." Investigators have tended to unravel the pathways from the top down, from shredded wheat to wheat flour to roots to the bacteria that form nodules on the roots. The unraveling has gone little further than the bottom of the plant.

Our half-knowledge of the soil leaves us with two conflicting views. One is that the earth is the nursery of life—that without the soil, our eyes would not have blossoms or waving fields of grass to gaze upon. Nor would we have food in our bellies or thoughts in our minds.

The other view is that soil destroys what we cause. The soil's ability to consume is immense. The microbes within it reproduce quickly. In one experiment, the number of microbes in a teaspoon of garden soil jumped from 2.4 billion to 3.4 billion in a few hours. With that rapid increase, microbes evolve new forms quickly. Says University of California microbiologist Francis Broadbent, "I guarantee you, if you take a soil sample adjacent to a filling station, you'll find oil-consuming bacteria." Soil, at least theoretically, can consume the insults we pour into it from chemical drums and paint cans.

Soil is where we put things when we no longer want them. When there is waste to dispose of, we toss it into a rubbish heap and let the dirt go to work on it. When our loved ones die, we let the earth devour bones and belly and blue serge suit. We can't see it work. But we know soil robs things of earthly form and energy. We speak of dirt as corruption and decay. We consign to the soil images of death. It is the abode of worms and termites and sightless things.

The two views are a confoundment. Life and death. Hope and decay. It is best not to think too much about the soil. To get things done, we must simplify. And agriculture, up against the complexity of weather and world markets and bankers and seed catalogs, simplifies where it can. It tends to simplify, especially, the natural system with which it must work. Farmers think of soil as it is reflected in the leaves of the plants they cultivate. A purplish seedling means lack of phosphorus in the soil. Yellow leaves mean lack of iron. Lodging in cereals means lack of potassium. It is easier to ignore the microbial middlemen in the soil, to take the life out of it and think of it merely as one of the instruments of production.

And where we are not concerned with growing things, we will not think of soil at all. In California, if one listens, one can hear the ignorance falling off the hillsides of the spreading suburban landscape. California towns were born in the fertile valleys, but they grew quickly, filled the valleys, and climbed the hillsides. It is not exactly a secret that in California the earth moves. Earthquakes are only part of the problem. The hills are steep and the soil on them creeps and slides like skin falling from the ribs of a snake.

In March, as California was wringing itself out from a record wet winter, the streets of San Jose's eastern neighborhoods were muddy. Sandbags were piled at intersections. In storm after storm, the rain poured off the hillsides, carrying tons of silt, which slumped across intersections without regard for the dignity of school buses or shopping carts. It clogged drains and carpeted parking lots with mud. Farther up the hillsides, houses paid a more severe

price. Above San Jose's Alum Rock Park is a subdivision built in the late 1960s. By 1971, it was apparent that the developer had not looked hard enough at the ground. Sidewalks had buckled. Foundations had cracked. Heavy rains slid soil off the hillside in mushy lumps. Utility lines broke. Backyards fell away, leaving homes precariously perched on unanticipated cliffs. One street, Boulder Drive, oozed headlong down the hill. Today, the end of Boulder Drive is an undulating tongue of gray taffy, bubbled and folded and crushed, separated from its main body by fifty feet of gaping crevasse.

The soil will fall off this hillside into Penitencia Creek. The City of San Jose will have to contrive to get the silt out of the creek and keep it from piling in the floodplain below. The floodplain is highly developed. Twenty-acre truck gardens and somnolent farmhouses with sagging porches alternate with the nervous chatter of glass-and-chrome electronics plants in which men and women assemble microprocessors. Nobody in San Jose thought to ask whether there was a floodplain until 1977. As the silt piles on the bed of Coyote Creek, it increases the likelihood of flooding. This year, a levee broke, and the resulting flood left the town of Alviso, where the creeks enter San Francisco Bay, nine feet underwater.

Few California towns have begun to look at ways to reduce landslides. Developers are not required to secure stable building sites. A study done on a 2,700-acre watershed above the town of Saratoga showed that intermittently dry Calabasas Creek dumped more than 12,000 tons of sediment a year into San Francisco Bay. Much of the sediment comes from residential development. It costs the Army Corps of Engineers $32,000 and the county $36,000 a year to take the silt out of sediment basins and to dredge it out of the bay—and that is just the cost of silt from this one small creek. It costs the average homeowner in the watershed $6,700 to stabilize and landscape the soil on his homesite. If he leaves the native vegetation in, he courts the greater danger of brushfire. Households which have no established ground cover face average costs of $14,000. Still, in wet years, the soils beneath the houses expand. Foundations shift. Houses slide downhill.

It's not just a California problem. There are landslides in Boulder and Cincinnati. All over the country, we are building on hillsides without looking at the soil. And if nearly four-fifths of us live in cities, if only 2.4 percent of the population lives on farms, if urban densities increase and gardens shrink, how then will city people know what is going on under the wheat and apples they expect to buy next month at the supermarket?

AS LONG AS man has herded livestock and planted grain, he has plundered the soil. Empires have risen and fallen on the fortunes of the fields. The empires of the Middle East fell when the forests were cut and the hillside soils could no longer hold back the rains. Mayan civilization vanished with its soil. Romans exhausted their own lands and set out to conquer foreign granaries. History is full of lamentations over the abuse of soil. Jeremiah cried, "The ground was chapt, for there was no rain in the earth. The plowmen were ashamed, and they covered their heads. And the wild asses did stand in the high places and snuff up the wind like dragons." Job moaned, "The waters wear the stones. Thou washest away the things which grow out of the dust of the earth and destroyest the hope of man." Plato observed that the mountains of Attica were once "lofty, soil-clad hills," and covered with trees, but had become so barren that they could "keep nothing but bees."

Our own agricultural past recalls a history of bitter farm failures. In 1926, historian Avery Craven traced the collapse of sugar production in the West Indies, tobacco in Virginia and Maryland, cotton in the lower South, corn in the Mississippi Valley, and wheat in the Northwest, all to the overuse of soil. "Men may, because of ignorance or habit, ruin their soils," Craven wrote, "but more often economic or social conditions, entirely outside their control, lead or force them to a treatment of their lands that can only end in ruin." On the American frontier, for example, a woodsman cleared the land and tried various crops until he found one in great enough demand in eastern markets to be worth the costs of transportation, and then he turned his land to the single-minded production of that crop. "The social order," wrote Craven, "has invariably reached the highest degree of complexity in the shortest period of time where the soils have been spent with the freest hand." Always, Craven saw the same pattern. The first settlers cleared the fertile bottomlands, and set high expectations for those who arrived later and cleared the less fertile hillsides. As steeper soils were farmed and uncilled lands vanished, erosion caused yields to decline. The first generation profited. The next generation seemed less blessed.

We think of farming as a way of life, as space and independence and close families. The farmer is apt to think of it as industry. And like industrialists, he is apt to simplify. To keep ahead of the market, he may buy more land and bigger machinery. He may narrow his operations to trim off the industrial fat. He

"Psst! Dump your toxic wastes!"

may give up cows because cows require supervision, while soybeans do not. He stops growing hay to feed livestock. He stops rotating crops. "The farmer is on a treadmill," says writer Frances Moore Lappé. "He has to grow more and more to make the same income. The ideology says produce and you will be rewarded. The truth is grow and you will be rewarded." Farms are increasing in size. One percent of the nation's farms today make two-thirds of the profits. The family farm is fading. By the year 2000, the Department of Agriculture expects 40 percent of the farms to be corporate operations, which tend to concentrate on a single crop.

Writer-farmer Wendell Berry champions small farms because they "tend to be diverse in economy, which is to say complex in structure, whereas the larger the farm the more likely it is to specialize in one or two crops, to have no animals, and to depend on chemicals, purchased supplies, and credit. In agriculture, as in nature and culture, the more complex the system or structure, the more sound and durable it is likely to be. The present industrial system of agriculture is failing because it is too simple to provide even rudimentary methods of soil conservation."

As the soil is used up, the social complexity it has been spent to purchase becomes hard to sustain. Absentee landlords buy up the land to grow tax deductions. Communities decline. Children move west or to the cities. The family farm becomes a literary memory. Farmers and their descendants tend to remember the successes, the 250-bushel wheat, the Green Revolution, the plow that broke the plains. They forget the failures.

We still have, fresh in our minds and in the fiction of John Steinbeck and the photographs of Dorothea Lange, the recent memory of the Dust Bowl. What we remember is the human misery, the long migration west of displaced tenant farmers and sodbusters. We remember their troubled faces and leathery hands, their abandoned and falling farmhouses. We forget the agricultural processes that shook them off the earth. We think of the Dust Bowl as an event of the 1930s. But its roots were established nearly a century before.

Early explorers of the West reported that the Great Plains were too dry to farm. But expansionist dreams crowded their warnings out of the guidebooks. In 1844, Josiah Gregg wondered from New Mexico, "Why may we not suppose that the genial influences of civilization—that extensive cultivation of the earth—might contribute to the multiplication of showers, as it certainly does of fountains? Or that the shady groves, as they advance upon the prairies, may have some effect upon the seasons?" He reported that the older settlers in New Mexico assured him that "rains have much increased of later years," and that the droughts had become "less oppressive." Twenty years later, Ferdinand Hayden suggested in the first report of the "Geological Survey of the Territories" that if settlers would plant ten trees on each quarter-section, they would produce enough rainfall to make the country lush and green. Charles Wilber, a member of the survey, reduced the theory to a slogan. "Rain follows the plow," he declared. "Toiling with his hands, man can persuade the heavens to yield their treasures of dew and rain upon the land. The polished raindrop never fails to fall in answer to the imploring power or prayer of labor."

America was not going to take dry for an answer. In the 1870s, the Great Plains were the empire of the cattleman. But the cows were crowded onto the land too thickly. They ate the grass and consumed the empire. The severe winter of 1886 decimated the herds, and the grass industry collapsed. The small farmers rushed in. By 1890, there were six million of them on the southern plains, a five-state area centering on the Oklahoma Panhandle.

It was droughty. In nineteen 1894, nine out of ten settlers gave up and left. But there was still enough native grass on the ground to hold the soil in place. When the rains returned, so did the settlers. And those who stayed carried off a minor revolution in farm technology. They developed dryland techniques to fit the plains. They plowed deep in the fall, packed the subsoil, let the fields lie fallow in the arid summer months, and left some ground unplanted each year to help restore its moisture. They gave up planting corn and instead raised winter wheat. Their success encouraged them to clear more ground.

When World War I began, the European market for American grain opened wide. The price of wheat went up 250 percent. The government called for more planting and guaranteed a price of at least two dollars a bushel. Plains farmers rushed for their plows. They plowed up a million acres of native grass. Mechanization made it easy. By 1917, there were 200 manufacturers of tractors in America. By 1929, there

"Well, then, perhaps something a little less traditional?"

out of four farmers owned a twenty-horsepower tractor.

Even as farmers bought more land and machinery, the price of grain fell. And lots of farmers found themselves caught between declining prices and the bank loans they had taken out to buy land and machinery. To meet their obligations, farmers on the southern plains sought bigger harvests. They plowed up another five million acres of native grass and planted it to wheat.

No one thought about the soil. In 1909, the chief of the U.S. Bureau of Soils had written, "The soil is the one indestructible, immutable asset that the nation possesses. It is the one resource that cannot be exhausted, that cannot be used up." Soil scientists were little aware, even, of where soil came from. Most thought it was just what happened when bedrock disintegrated. Even George Perkins Marsh did not, in his monumental study of man's effect on nature, single out the loss of soil as a separate and commanding subject.

But at the end of the decade, another drought hit, and it caught the plains with their grass off. It also caught the farmers at the mercy of low prices and big mortgages. The farmers continued to try to outflank fate by clearing more ground. But the winds picked up the dried-out soil and carried it away. In 1934, a storm started in Wyoming, rolled up dust as it swept across the plains, and dumped it like snow on Chicago, Boston, and Atlanta. In Buffalo, the sky darkened at noon. In March 1935, Hugh Hammond Bennett, director of the newly created Soil Erosion Service, stalled a congressional hearing until the dust cloud from a storm in Oklahoma arrived, blotting out the sun. Erosion, he told the legislators, was eating away at all parts of America. It had already destroyed 282 million acres of crop- and rangeland and was gnawing away at another 775 million. Already, he said, "a hundred million acres of the best cropland we have is finished." He warned that unless erosion was halted "it will be impossible to maintain permanent prosperity over large areas of the United States."

WE REMEMBER the human suffering, the rickety trucks bearing dust-ruined sodbusters to California. Fifty years later, New Yorkers and Californians still sneer at Okies for having fallen into a well of hopelessness. We don't remember the causes of their misery. And we don't remember that the essential government program aimed at healing not the migrants but the land. In 1935, Bennett persuaded Congress to pass the Soil Conservation Act, the world's first government program in soil conservation.

The act established the Soil Conservation Service but gave it no regulatory powers. The agency was to work entirely through local conservation districts, in the manner of water and sewage districts. Farmers would become "cooperators," accepting SCS advice and acting independently. Decisions would be made by locally elected commissioners. The lack of power was not due to a lack of conviction that soil erosion was serious. It was due to the complexity of the problem. "No single practice will suffice," declared Bennett. "A physical inventory of the land of the farm should be made, and each acre used in accordance with its adaptability and treated in accordance with its needs." That meant looking at millions of farms, each with different soils, climate, crops, slopes, ownership patterns, and degrees of managerial skill. Fifty years later, we haven't completed the inventory. And the SCS remains alive long after many of the other New Deal agencies have died or been absorbed by newer purposes.

The problem of erosion has never been simple. There is much debate over the most fundamental aspects. For example, experts disagree whether farmers recognize the problem. Says James B. Gulliford, director of the Iowa Department of Soil Conservation, "The farmers realize the need they have and the amount of erosion that's occurring." John Miranowski, an agricultural economist at Iowa State University, adds, "Farmers have a much better feeling for erosion than we've given them credit for." On the other hand, Min Amemiya, Iowa State agronomist, says, "Many farmers think soil erosion is down the road, on another farm." And Peter Nowak, University of Minnesota sociologist, says, "Our research is pointing out that three-quarters of those individuals who say they don't have a problem are exceeding the T values [the rate of natural soil replacement] set for their districts. Farmers underestimate their own soil erosion problems. The evidence is quite clear."

Nowak's surveys show, for example, that only two in a hundred farmers would recognize soil erosion on their own land by lower productivity or by the presence of light-colored soil on ridges. And 38 percent of those surveyed said soil erosion was due to causes, like wind and rain, beyond their control. Nowak says the farmers have for years been shown pictures of gullies, ditches filled with silt, and fenceposts buried in drifted dust. "If I walk out on my farm and don't see those things, I say I don't have a problem. Farmers haven't been taught about sheet erosion."

Sheet erosion—the movement of soil in rain, wind, and runoff—isn't always apparent. A soil loss of ten tons per acre is almost invisible. Says Gulliford, "To get ten tons per acre, all you gotta do is peel off one-fifteenth of an inch. It's a piece about as thin as a dime. You don't see any big gullies out there. But that fifteenth of an inch is the best material. It contains all the best nutrients." And farmers often fail to see the loss of productivity that goes with that layer, because the drop in yield is masked by the use of chemical fertilizers, new hybrid seed, improved planting schemes, and other technological innovations. Says Richard Cruse, Iowa State University agronomist, "If you apply fertilizers, you can take almost the whole top of a hill off and still have productivity."

And a farmer who sees his yield drop is apt to blame the loss on weather, in-

sects, wet soil, late spring, poor seed, inadequate fertilizer. Farming is a complex art, and soil loss is apt to be low on a farmer's list of concerns. Says Cruse, "You can show a farmer what is happening. You can take a dump truck and carry the soil away from his farm. But when the farmer comes back and says, 'I got ten bushels greater than I had a couple of years ago, and fifty bushels greater than my dad had,' you know he's not going to be concerned about erosion."

If education is the problem, no one knows how to solve it. "There is little agreement on what constitutes an educational program in the first place," says Nowak. Farmers get advice from a variety of sources—from the Soil Conservation Service, the agricultural extension services of the land-grant colleges, farm magazines, chemical dealers, neighbors, tradition, and their own experimentation. For fifty years, the SCS has prepared individual management plans for farmers, but fewer than half the nation's farmers have had such plans drawn up. Some farmers are suspicious of any federal officer. Others mistrust agricultural extension agents "because they aren't getting paid for what they produce." Twenty-five percent of Iowa's farmers have never spoken to a local conservation district commissioner, and when Nowak asked some of them why, half replied that they had no reason to meet with one, or that they could handle their own problems. Textbook solutions and farm-magazine articles fall short of solving the problem because all farms are different. Even the backyard fence becomes mysterious and complex when regarded as an educational system. Says Nowak, "There are information cliques in farming communities. A person can find out about an extension program a year before his neighbor who lives across the road finds out."

If an educational system is ever developed, it must deal with almost unimaginable complexity. Farmers vary in their knowledge of agronomy, their managerial skills, and their financial resources. In Iowa, only 40 percent of the farmers own their land, and they account for only 29 percent of the cultivated acreage. About a fifth of the farmers are tenants, whose short-term interest in the land may not urge them to conserve. Farm ownership is changing, and as the family farm becomes a memory, says assistant secretary of agriculture John Crowell, "the traditional motivation of stewardship of the family property for future generations is not as prevalent."

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Much argument also centers on whether there are economic incentives for a farmer to conserve. Says Miranowski, "Basically, if prices were high and farmers expected them to stay high, there would be a real incentive to conserve soil. If you don't expect prices to stay high, there is an incentive to expand onto marginal lands in thoughts of putting it back into pasture later. In the 1970s, when prices were high, there was a continual decline of investment in conservation, which tends to indicate that the farmer did not view the high prices of the 1970s as a long-term phenomenon." Miranowski expects declining prices in the next few years to convince farmers to retire marginal lands from row crops.

But when prices drop, interest payments stay high, and economic logic may not point to retiring the marginal land. Says Glen Miller, "The only way my family and I can meet our payments is to keep production at the highest." Such things suggest to many observers that the marketplace cannot guide farmers toward conservation. Farmers who don't recognize erosion on their own lands can't be expected to consider its cost. Farmers who live near cities often push the land hard because they expect the farm to be sold for urban development. Speculators in Colorado plow up highly erodible land mainly because planted land gives them increased borrowing power. Federal price subsidies encourage farmers to plant marginal lands to qualify for larger payments in the future. Federal disaster insurance is based on the total acreage planted, and that encourages farmers to hedge their bets on the weather by plowing up pasture. Concludes Gulliford, "If you let the market do it, we'll keep destroying the soil until we run out of food."

Those who feel the marketplace discourages conservation believe farmers deserve subsidies to help pay for soil conservation. Says Gulliford, "The public ought to pay a farmer to take care of his soil." Many would say society already bears the cost of conservation when it provides federal price subsidies. Farmers are paid by the government not to grow certain crops. Until this year, a farmer growing specified crops could set aside 20 percent of his land and receive federal payments equal to what he might have earned by planting that land. For 1983, the subsidy was increased to 50 percent, provided that the farmer accepted payment in surplus commodities, which he could then sell on the open market.

The program, called Payment in Kind (PIK), has been touted as a conservation measure. It was expected to cause one-third of the corn and wheat acreage in America to be zeroed in 1983. But the emphasis was clearly not conservation. There are huge surpluses of wheat, rice, corn, cotton, and sorghum. There is more corn in storage today than was grown in America in 1979. The program aimed to get rid of the surpluses, which hold prices down. It runs only a year, hardly long enough for a farmer to establish a new crop rotation system that includes pasture or native grasses. And farmers can qualify for the subsidies simply by substituting other crops. In California, for example, a cotton grower may plant grapes, even though vineyards are a leading source of erosion in the state.

The PIK program draws attention to conflicting goals at the U.S. Department of Agriculture. On one hand, the department encourages individual farmers to be more productive. To that end, it invests millions of research dollars in high-yielding plants and machinery that will plant and harvest more acres at less cost. At the same time, to fight weak prices, the department seeks to reduce production by paying farmers not to grow certain crops.

Soil conservation has .so often been the stepchild of the effort to reduce production. A year after Congress established the SCS, it passed the Soil Conservation and Domestic Allotment Act, which set up the Agricultural Conservation Program, which pays farmers to shift fields from soil-depleting crops to soil-conserving crops. The ACP also pays farmers part of the cost of installing terraces and check dams to stop erosion. But it has tended all along to concentrate on providing income supports rather than conserving soil, and that has caused tension between the SCS and the ACP. Often, the conflicts are dramatic. For example, in Colfax, Washington, the ACP has helped farmers to buy herbicides for use in summer fallow, arguing that summer fallow reduces overall wheat production and so helps support prices. In the same office, the SCS officials decry summer fallow as the leading cause of soil erosion in the district. Elsewhere, ACP funds are spent to help farmers apply limestone to depleted soils to offset acidity, a practice which many believe merely rewards farmers for abusing their soil.

Designing a program to deal with soil erosion is a complex task. It is apparently more complex than Congress imagined it would be fifty years ago, and possibly more complex than Congress can fathom today. Is the solution, then, to leave the problem to the states? Is the solution to rework the federal programs? Is the solution to leave it to the farmers?

IOWA FARMS are works of art. They clothe the hills in ribbons of bright green and gold. Rows of corn and hay and soybeans run over the undulating landscape. They flow with the gentle curves of nature, drawing your mind dreamily around the hills and valleys. The rows are crisp and distinct, and they tell of pride, confidence, and resolve. The sky is enormous. Clouds walk their shadows over the landscape. Atop a hill, you are an island in a sea of corn, and you feel a space and dominion you do not feel in the city. Here is the visible embodiment of the yeoman's dream, the American farmer's

expansive but tidy coordination with earth and sky. It is harmony and hope, faith and comfort.

Early settlers ventured tentatively out of the forest onto this prairie and found the sod as hard as wood. Only when they pried it open with the moldboard plow, which cut deep and turned the grass under, did they see the wealth beneath their feet. For a century since, Iowa has been heartland, an agricultural wonder. Farming today accounts for at least 80 percent of Iowa's economy. Twenty-six million acres, 72 percent of the surface area of the state, is cultivated.

The intensity of cultivation gives Iowa the highest rate, in brute tonnage, of soil erosion in the nation. Iowa loses 260 million tons of earth a year, an average of nearly ten tons per acre of farmland, enough to bury Chicago twelve feet deep. The soil washes off the steep hills in spring rains. It blows in winter winds off the flat lands of the northern part of the state. Says Gulliford, "There are times when you can drive down the road and hear the particles hitting the windshield."

In the western part of the state, the land is hilly. Fourteen thousand years ago, glaciers slid down from what is now Canada, pulling much of the topsoil with them. As the glaciers receded, the deep silts they left behind were blown on westerly winds that piled huge dunes across Iowa. Wind and water sounded the hills and carved out broad valleys. Near the Missouri River, the silt piled high. Today the hills there are known as the Loess Bluffs, and in places the soil is two hundred feet deep—rich, dark, and well aerated. Farmers there in the past didn't bother to use fertilizers or pesticides. "You just plowed it, planted it, and the grain came up before the weeds," says Gulliford. Plowing was thought to be the essence of Iowa farming, and until the past few years the state Department of Agriculture promoted better farming by sponsoring contests to see who could lay the earth bareest in the straightest rows. But plowing moves a lot of soil. And by the 1930s, not a few Iowa farms were gullied and barren.

You can still see the damage. The tops of some hills are gray, while their slopes are nearly black. The dark topsoil has been moved down, burying the less fertile subsoil. In summer, the corn grows thin and stunted at the tops of such hills. And here and there, farmers still plow up and down the hills. Their fields look industrial and ownedisciplined. And they gully easily. Spring rains can cut up this land dramatically. Last year, near Sioux City, a single cloudburst clawed up gullies three feet deep and carried off as much as 150 tons of soil per acre on nearly a quarter of a million acres.

But there are, in Iowa, farms so precisely manicured and tended that you cannot find a gully. Hilly as western Iowa is, many of the farmers have filled in the ditches, installed underground tile drains, piled up terraces, grafted new skins upon the land so that it looks young and sun-gladdened.

"Welcome to God's country," says Cliff Stille, as he gets out of his pickup.

Stille is sixty-four, but vigorous and straight. Only the rounded belly and the salt-and-pepper gray in his hair give a clue to his age. He wears cowboy boots, a western shirt, and blue jeans, a reminder that this is the beginning of the open West. Sunglasses perch on a sunburnt nose. There are creases at the corners of his mouth, suggestions of disappointments, of cold winters spent talking to cows and dry summers spent talking to bankers. His calloused hands and weathered face tell of hard work, and the work is probably what keeps him looking young.

His 480-acre Macedonia, Iowa, farm unfurls down a hill facing the setting sun, forty miles east of Council Bluffs. He grows corn and soybeans, most of which he feeds to his livestock. He keeps 300 cows and 1,800 hogs. "I'm not one of those rich Iowa farmers," he says. "When my wife and I got married, I gave the preacher my last buck for marrying us. My father-in-law gave her ten bucks, and that's all we had." Stille borrowed $500 from his father to make a down payment on 129 acres near Glenwood and worked for his brother to pay for the use of machinery. In 1941, a tornado tore apart his buildings. He rebuilt. In 1955, he bought the Macedonia farm and started rebuilding it. "It was really run down," he says. "There weren't any good fences. No terraces. Plenty of ditches."

We like to think of farmers sitting in their fields listening to the corn grow. But there are farmers who prefer to think about the lay of their land, its contours and crinkles, the way it rides the Earth's shoulders. Stille is one. He is proud of the way he has sculpted his farm. He has filled in the gullies, gentled the slopes, and built terraces to hold rainwater in place until evaporation takes it away. Stille is a sort of local champion when it comes to terracing. He has twenty-six miles of terraces on his farm, a considerable

investment in earth moving. "Those terraces are improving the shape," he says, as he runs his eye over the graceful curves of his hillsides. "This farm used to be farmed straight north and south. We had ditches everywhere. Now they're filling in."

Stille points toward the southwest boundary of his farm, which is downhill from his neighbor's place. "It was all cut up over there," he says. "It was full of ditches. It took thirty-five cubic yards of dirt per foot of ditch to fill one of them."

HALFWAY ACROSS the state, Norm Kading looks over his 500-acre farm with the same appraising eye. Kading is fifty-nine, soft-voiced and deliberate. The furrows at the corners of his eyes and the sunburn on his cheeks tell of a lifetime in the fields. He was born on the land he farms. His house and outbuildings sit atop a hill three miles east of the Missouri–Mississippi divide, and they look onto a broad vista of rolling hills, broad valleys, and fields of corn and soybeans. "I don't know if it's just this open space," says Kading. "Maybe it's the feeling that there's freedom here and you're not stumbling over people all the time. But there's something about growing up here that stays in your system."

What has stayed in Kading's system is a sense of responsibility to the place. "From the time a farmer gets started to the time he quits," he says, "whatever he has accumulated he has built himself. In a lifetime you know you're kind of building a dynasty. I like to see building up, rather than tearing down. It gives you a feeling of accomplishment. It gives you a sense of being important, a feeling of being of service to God's creation."

Kading has put a lot of effort into building up his farm. "I started right out of high school with contouring," he says. "I was one of the first in this part of the country. I was getting disappointed that the farm was being all cut up with gullies. It got serious in the 1930s and 1940s. Now, I don't think there's a gully on the farm that I can't drive a pickup truck across. We've got waterways in, tile systems in. We're gaining on some terracing work. We're strictly contouring all our planting. We have pretty widespread use of strip crops. And we're getting into no-till rapidly. We're doing pretty much the best we can to whip erosion."

It's an ongoing struggle. "Oh, man, do we get opened up for severe erosion in the spring!" says Kading. "A year ago in May, it was dry, and the land was dry and loose. The twenty-seventh of May came along a real hot, muggy day. We'd had a few rains. The surface was wet. But that afternoon it rained four and a half inches in less than half an hour. There was so much water coming off the land it filled the pond and came over the dam like Niagara Falls. The erosion and the cornstalks and the debris were just sickening to see. It overtopped a new terrace and eroded the crown and washed some of it away."

Both Stille and Kading are commissioners for local conservation districts. Both are drummers for soil conservation, trying to convince their neighbors to work to keep the ground in place. And it is clear that not all of their neighbors see the land as they see it. In winter, when the land seems chalky blue in the sultry light of the stooping sun, you can see the blemishes. Stille points to the end rows of a neighbor's field—strips near the fence where the farmer turns his tractor around. Many farmers plant the end rows after the rest of the field is planted, in order to get more yield from the land. To do so, however, they must run furrows straight up and down the hills. In the field Stille points out, there is a dent in the curve of the hillside. Clearly, a foot of topsoil has washed away from the border of the field.

Kading stops his pickup truck on the road that runs past his farm and looks up the fenceline to the top of a hill. Kading's land is on the uphill side. You can see that the land on his side of the fence is nearly four feet higher than the land on his neighbor's side. The brush growing along the fence is not herbicided, so it traps the soil. Below the fence, his neighbor plows, pulling soil away. "The soil is moving down," says Kading. "Every trip across that hill, the soil is moving down."

Stille points to a neighbor's field and recalls a shower that took so much soil off it that it knocked down Stille's fence and carved a deep gully into his own fields. The neighbor's ridges are light-colored and bare, while on Stille's, stubble from last fall's crop still stands. In the bottomlands of his neighbor's field, the displaced soil is already burying the furrows left by fall tilling. "Whatever work was put on that land has come off that land," says Stille.

In part, Iowa's erosion problems are due to rising costs and declining prices. In part, they are due to progress. Says Kading, "The old practice of contour farming has slipped with some of the farmers. It's so much simpler for a man

with large equipment to go straight across that field." And in part, these problems are due to farmers' not being concerned enough about soil erosion. Kading reports that in Adair County, less than half the acreage is managed according to approved conservation programs, and less than a quarter of the land is adequately treated to control erosion.

Both Stille and Kading concede that they are better able than most of their neighbors to conserve, simply because they started earlier. "We're probably some of the more fortunate people in that we got in and got our land purchased at reasonable prices," says Kading. Stille finished installing his terraces nearly ten years ago. As proud as he is of them, he confesses, "It costs the dickens to put in terraces. It's an insurance policy to guarantee food and fiber for future generations. But it's a project that you're not necessarily going to get your money back on."

Looking around, you can see why some of the neighbors are reluctant to spend money on conservation. You see a lot of empty farmhouses in Iowa. Once-trim two-story buildings now have sagging porches, peeling paint, and boarded windows. Machinery and the economics of scale have favored larger farms. As the old farmers retire, their children are less eager to work the land and less able to make the investment they need to start. Says Kading, "Some old ones don't have a son or daughter who wants to take things over, and they have a tendency to let things run down." Many of those farms are owned by heirs who live in another state and farmed by a tenant who doesn't live on the land; neither party has a long-term interest in the future of the land.

And the young farmer starting out is too deeply in debt to put in terraces or indulge in pastures. "From the time he starts out," says Kading, "a farmer is scrimping and saving to build up that inventory of machinery and land. He's always got places for the money to go, so he doesn't take time off for a vacation or buy a new car. When farmers get together, they'll say, 'Well, I better be getting back to the poor farm.' They might be well-to-do if they sat down and took an inventory of their assets. But it's all tied up. They just don't carry any large bills in their billfolds."

The State of Iowa, seeing that farmers alone can't solve the problem, has developed the most elaborate soil conservation program of any state. The Iowa General Assembly hopes to reduce soil losses to tolerable levels by the year 2000. To this end, it planned to spend $14 million this year on soil conservation. The money goes directly to farmers in the form of grants for permanent practices, such as terraces, drains, and check dams, and into the salaries of clerks in each of the state's 100 soil conservation districts. The state Department of Soil Conservation employs 200 people, including the clerks. They work with 450 federal soil conservationists and approximately 500 locally elected commissioners like Stille and Kading.

While Iowa's hilly terrain and erodible soil clearly need terraces and drains, there is little hope that all the farmers who need them can install them. Says Gulliford, "There are 26 million acres tilled in Iowa, and we've only got soil erosion under control on one-third of them. Like everyone, we're hard-pressed for funds. Last year, our budget for cost sharing was $5.6 million. We could easily use ten times that." He says the district commissioners have grown cautious about talking up the state program because they are afraid that when farmers ask for money and find there isn't enough to help them, they will go away angry and disillusioned.

WHAT IOWA is pinning its highest hopes to is conservation tillage. Conservation tillage is an attempt to conserve soil by keeping plant residues in the ground. The traditional farmer uses a plow to open the soil and eliminate weeds, which compete with crop plants for moisture and nutrition. But weeds also hold the soil in place and absorb the energy of falling raindrops, which otherwise would set soil particles in motion. Conservation tillage keeps a residue of old plant growth on the ground, at least until the crop is established. The purest form is no-till agriculture, in which the farmer leaves cornstalks or wheat stems standing after harvest. He does not plow. In the spring, he slot tills, drawing a knife-like implement across the field to open a narrow incision for planting, or he punch plants, stamping holes into the unplowed ground for seeding. There are a variety of other conservation tillage systems. One may chisel plow, dragging an implement under the surface of the soil to break it apart without turning it over. One may disc stubble into the top layer of the soil. One may chop cornstalks or other residues and strew them as mulch over the surface.

Conservation tillage requires fewer tractor trips across the fields, and so saves labor and fuel. Many farmers have adopted no-till simply because it saves gasoline. But there are problems with conservation tillage. The economic benefits aren't always clear. In Iowa, for example, keeping residues on fields results in a cooler, moister seed bed, in which seeds may take longer to germinate. The farmer may have to switch to short-season varieties of corn, which tend to have lower yields. Some crops don't grow well in their own residues. Corn planted in its own stubble gives lower yields, perhaps because the plant produces toxins which retard the growth of seedlings. And no-till requires farmers to use fertilizer differently. Conventional plowing distributes fertilizer uniformly through the upper layer of soil. No-till concentrates the fertilizer in the upper two inches. It percolates slowly, and in dry years, the crops may have less potassium and phosphorus available.

Many people fear conservation tillage will lead to health and environmental problems, by increasing the use of herbicides and pesticides. Farmers practicing conservation tillage burn the weeds off with herbicides. And the cooler, wetter fields, with the stubble left in, may be more tempting to insects and plant pathogens. A study by Lisa Speer of the Natural Resources Defense Council predicts that herbicide and pesticide use may increase 25 percent or more when farmers take up conservation tillage. With no-till producing less erosion, there may be less pesticide leaving the farms. But, according to research by Maureen Hinkle of the National Audubon Society, total pesticide use may be twice as much in minimum tillage as it could be using traditional conservation practices, such as crop rotations that save soil and discourage insects.

The chief problem with no-till farming, however, is that it is complex. A farmer must know more about weeds, herbicides, planting schedules, seed quality, soil chemistry, and equipment. He must be able to modify conventional machinery so that it doesn't clog with the brush he leaves in his fields. He must time his operations precisely to coincide with changes in soil moisture and temperature, plant development, and weed growth. The complexity is what keeps conservation tillage from being adopted rapidly. Less than five percent of Iowa's farmland is under no-till cultivation.

But, says Kading, "I believe no-till is gaining momentum. In winter, you see fewer and fewer fields with the soil bared, and more and more with the stubble left on." For the last two years, Kading's conservation district has arranged to rent no-till planters to local farmers, and it has convinced the Adair County supervisors to subsidize the cost. And Iowa State University agronomist Gerald Miller says, "The moldboard plow is on its way out. Seventy-five percent of the row cropland is planted without it. That's a major effort." The U.S. Department of Agriculture expects minimum tillage systems to be used, eventually, on half the world's farmlands.

But conservation tillage is not a panacea. "It is not the technological fix that we need, because it is a complex system," says Nowak. "There are more decisions to be made, and the timing is critical. It requires a higher managerial capability." Even under the best of circumstances, it won't work everywhere. It will not compensate for ground that is too steep to be farmed in the first place.

So the more expensive terraces and dams and drains and the less profitable pastures and hay strips are also needed. And the big question is who is going to pay for such practices. Food prices haven't helped the farmer. And government funding hasn't increased to match the increase in land under cultivation. The money spent by the federal government on soil erosion has remained constant in recent years, despite the rapid clearing of land.

Says Kading, "There is a general feeling that the government ought to be concerned enough with soil losses to put up whatever money is necessary to conserve it. I think the funding ought to be unlimited but offered at 50 percent sharing, because handouts are something that are not as valued. After all, farmers are reducing their crop acreage with terraces, and they have to have a maintenance program. So they're being put up at some sacrifice."

And Gulliford says, "In the Dust Bowl days we were losing three billion tons of soil a year. Today we are losing four billion. We are being swept backward with the tide. We're losing ground because we haven't invested the necessary manpower or money. At a national level, we encourage the cheap production of food. We don't value food enough to pay the farmer to put soil conservation practices in place. If you're not going to talk billions at the federal level, you're not even concerned about it."

But spending like that requires a political constituency to woo the money out of Congress. Farmers are reluctant to court legislators because they fear the funds would come with strings attached, regulations governing what crops they can grow and how they can grow them. Where, then, is that constituency to come from?

WE WORRY ABOUT wolves and whales and sea otters and snail darters. But we don't get worked up over soil, even though it is much more an intimacy of our lives. Most of us live in cities, where we are unaware of the problem. We have committees to save butterflies and louseworts, vernal pools and prairie grasslands. But there is no committee to save the Miami silt loam or the Dublin adobe clay.

Movements are built upon ethical values. Most of the logic of soil conservation rests on economic values. Textbooks tell future farmers, "Soil conservation pays. A good soil and water conservation plan results in larger yields per acre." Such statements manacle soil conservation to the idea that soil is, like pesticides and tractors, just another instrument of production, something that can be amended with a little nitrogen or a little terracing. But the economic logic breaks down. In practice, the promised larger yields are a long-term thing, something the farmer may not live to see.

Aldo Leopold, puzzling over why Wisconsin farmers went right back to their old profligacy with the soil once the public subsidies for conservation were ended in the 1930s, held that education wasn't the answer. "The education actually in progress," he wrote, "makes no mention of obligations to land over and above those dictated by self-interest. The net result is that we have more education but less soil." He complained that the soil conservation district "is a beautiful piece of social machinery, but it is coughing along on two cylinders because we have been too timid, and too anxious for quick success, to tell the farmer the true magnitude of his obligations." The farmer's true obligation, Leopold held, was to put soil before profits. What was needed was a new conservation ethic.

More recently, R. Neil Sampson wrote in FARMLAND OR WASTELAND, "We confuse price with value, and money with wealth, and therein lies much of our inability to think straight about the value of land. Land is more than a store of basic wealth—a quarry to be mined for the products needed for

survival, comfort, or pleasure. It is the living, dynamic bridge whereon plants convert solar energy to human food. It spans the gap between death and life, between what was and what is to be." Concluded Sampson, "What is needed in America is a significant change in our attitude toward land," and a new ethic that will "overcome the idea that the rights and privileges of ownership include the right to destroy the land."

But to adopt such an ethic, one must first take notice of the soil, see that it has life and beauty and a character of its own. We accord rights only to things which seem to have personality. And it is rare that a man looks down and sees, beneath his bootheels, something alive and quickening.

I have a friend whose neighbors would be frightened if they heard him talk about the soil. "I love the soil!" he exclaims. "My dream is to have a whole acre that I could go out into and plunge my hands into, up to my elbows. You look at the roots of plants, and you think of how they deal with the soil, how they root through it and hold onto it and drink from it. When a tree falls, it's almost like getting to see a secret you shouldn't get to see. There's this whole life revealed in the roots and the soil clinging to them."

He walks outside at night and lies on his belly to stare into the ground. "If you can get heartbroken over the sight of a turtle trying to climb over a rock, you can love the soil," he says. "There's a tremendous sadness to the soil. A great yearning and longing that you feel when you think about it. There's this whole bank of potential, and it is totally submissive. You'll be walking in the woods and find a jack-in-the-pulpit and you know it is going to go down into the soil and come up again. Think of a toad burying itself. Or of the delicate white seedlings pushing aside the last film of humus to reach the sunlight. Watch a salamander's eye just as it's coming out of the soil. That's wonderful. That's the soil. Any discussion of science, of moisture content or oxygen content, just falls apart when you think about that."

Not many people have looked at soil that way. You can examine landscape paintings from the Renaissance to the present and find few painters who noticed that green things do not erupt out of bare rock. You can search the accounts of anthropologists and find that either they never asked about soil, or their subjects had little to say about it. Soil is as common as air, and apparently as invisible. ❧

Soil scientists have not done much to make it more visible. Most of them approach soil as a tool with which to test chemical and physical laws, or as an instrument of agricultural production. They are chemists, agronomists, or microbiologists first and soil specialists second. They do not urge us to see soil as a living scene, like a mountain meadow or a forest grove.

It takes a generalizing mind with particularizing talent to see the soil as it must be seen if we are to embrace the ethic Leopold and Sampson urge upon us. It takes, in short, an ecologist with an esthetic sense. Such a man is Hans Jenny, eighty-four-year-old emeritus professor of soil science at the University of California at Berkeley. Jenny is small and has a bird-like grace. Born in Switzerland, he retains an accent that suggests the quintessential lecturer. But he has senses other professors lack.

Jenny grew up on a Swiss farm, and he remembers walking behind the plow, breathing deeply the tonsy aroma of newly turned earth. "I saw the thick soil turn and shine in the sunlight," he recalls, "and I knew it was the beginning of new life. Even as a kid I saw it was an important event." That vision led him to become a soil scientist and an authority, particularly, on the way soil forms. He is still flushed with enchantment about the soil. "It breathes. It takes in oxygen. It exhales. Soil is a living system. It is quite beautiful. I have," he confesses, "a soil mystique."

Jenny wants to share that mystique with his colleagues, to make them see the beauty of soil and care for it as they might care for birds and wildflowers. But he knows they tend to look at soil as little more than a substrate with which to exalt mechanical laws.

On a rainy evening in January, Jenny is speaking to a group of soil scientists at the University of California at Davis. The listeners are technicians. They are interested in statements that can be written mathematically—that have certainty. These are flannel-shirted foresters and booted agronomists. But they are scientists, and Jenny speaks first to their facts. He cautions them that when he speaks to such an audience, "I tell people that I think soils are beautiful, and that sort of sets them back. There's always a lot of snickering going on." The audience, obligingly, snickers.

In his high, thin voice, Jenny proposes to show these scientists how beautiful soil is. The lights dim. A slide projector comes on. Jenny displays a picture of himself standing in the dwarf fir forest of the Mendocino coast, among

bogs and leafless scrub. The scene looks like the aftermath of a fire. Jenny explains that his friends in the Sierra Club have been reluctant to try to save this place because they cannot see its esthetic qualities. The problem, he says, is that they have poorly educated eyes.

Jenny now shows pictures of soil profiles, dense black midwestern loams shining with sand and frosted with clay, deep red laterized soils from California's Mother Lode. It is familiar ground to the scientists; they watch with interest. Jenny switches to landscape paintings that hang in American and European museums. There are Mantegnas, Sassettas, Gainsboroughs, and Ruysdaels, but all show scenes of bare rock. "You look for soils," says Jenny. "Again and again, you don't see any."

By now, the audience is growing uncomfortable. They are scientists, and they are not used to Culture with a capital C. It is not something they want to be responsible for. The paintings make them squirm. Some nod off into sleep. Some get up and quietly slip out of the room.

Jenny shows Cézannes and Gauguins. Still, no soil. He shows a painting by Grant Wood, a treeless landscape in Iowa on Arbor Day. In the lower right corner there is a soil profile shown in a road cut. It is, says Jenny, an exception to the general rule of soil ignorance in western painting.

Now comes Jenny's payoff. "There is one great painter of soils," he announces. And he projects onto the screen a painting by the French artist Jean Dubuffet. Dubuffet painted many pictures of soil, he explains. They are detailed observations of the ground with titles like "Humus," "Celebration of the Soil," and "Fear of the Soil." Jenny explains that Dubuffet gets paid $60,000 for such a painting. The scientists look up. Money is more measurable than culture. They laugh.

Finally, Jenny mentions that a German gallery exhibited soil profiles alongside abstract paintings. Clearly, he says, soil does have esthetic qualities. He shows a picture in which a soil profile and an abstract painting hang side by side. There is a filmy aggregate of ocher and charcoal, like making butter and iron shavings. To the right there is a mahogany-like tooth of deep mahogany. It is grainy and rippled. A lady in the audience asks which is the soil and which is the art. Jenny puts it to a vote. Practically everybody identifies the butter and iron shavings as the soil profile. "I congratulate all the soil scientists here," says Jenny with a note of disap-

pointment. "You have picked out nature from abstract art."

Some days after the talk, I looked up Dubuffet's writings to see what he liked about the soil. He wrote, "I cannot help feeling that the things closest to us, the most constantly before our eyes, are also the ones that have at all times been the least perceived, that remain the least known . . . The fact is that these elements, which because they are commonly found everywhere and for that reason do not arrest the eye, fascinate me more than all the others. The voices of the dust, the soul of the dust, interest me far more than the flower, the tree, or the horse because I sense they are *strange*."

Dubuffet proclaimed his art to be "a rehabilitation of disparaged values" and said, "I am obsessed by the idea that there is something both false and unprofitable in looking at things too closely and too long. It is not normal for a human being to stare at objects for the sole purpose of inspecting them and making an inventory of their constituent parts. Such a position in our relation to them seems to me to distort completely the mechanisms of communication that exist between man and the objects around him, the way he perceives them and the way they affect him. Man sees things without trying to see them. While he is looking at one thing, he sees another, as though obliquely."

It has been Jenny's hope that these men and women will see soil as something more than a commodity or a measure of economic and physical laws. He hopes they will discover in the earth something livelier and less instrumental. But there is no resurrection of disparaged values tonight. As Jenny finishes his talk, the scientists applaud politely and warmly. It was nice to see pictures. It was nice to see Culture. But no revolutionary banner unfurls. After the talk, the scientists mill about in small groups, saying good night. I ask several of them whether Jenny's approach may do something to conserve soil.

"I dunno," shrugs one.

"I'm not sure," says another.

"It was interesting to see what was in the paintings," says a third. "I'd never have looked for the soil there." He smiles, as if he were trying to bring into focus the dawning realization that he has misplaced his car keys.

"What will save the soil, then?" I ask.

"As soon as there is no food on their plates, people will start worrying about the soil." ♠

Ms. BABCOCK. Let me now briefly turn to the topic of bays and estuaries. I guess I would roughly start on page 12 of my written testimony.

As you know, even after 11 years of progress, water quality problems continue to plague us nationwide. Our estuaries, those areas where fresh water from the land meets salt water from the sea, are not immune.

The ecological importance of estuaries has become apparent only in the last two decades. The primary productivity of the estuarine system is among the highest recorded for any ecosystem.

In coastal biotic communities, estuaries are the chief source of nutrients. A number of commercially important species, oysters, clams, crabs, shrimp, striped bass and halibut thrive in estuarine habitat.

Because they empty directly into the ocean so that wastes seem to disappear, estuaries have customarily been regarded as limitless reservoirs for dumping municipal and industrial wastes.

We are finding, however, that some estuaries have reached their limit as flushing basins. The results of a 6 year, $28 million EPA study of the world's most productive bay, the Chesapeake, demonstrates this point. And again I would refer you to an article that appeared in the most recent edition of the Water Pollution Control Federation Journal on the Chesapeake Bay called "A Resource In The Balance", in which they summarize the results of that EPA study.

Again, I can provide copies for the record.

Mr. ROE. Oh, yes. At this point, we will enter that into the record, with no objection.

Ms. BABCOCK. Thank you.

[The article referred to follows:]

MONITOR

The Chesapeake Bay

A resource in the balance

The Chesapeake Bay is a delicate balance of freshwater and saltwater, of plants and animals, of farmer and fisherman, of urban sprawl and remote wetlands, of man and the environment. This year marks a turning point, when a gargantuan research effort will be transformed into an active management strategy, and the balance in the Bay can be shifted toward a cleaner, healthier, more abundant resource.

The Chesapeake Bay is one of the largest and most productive estuaries in the world. An estuary is the product of seawater diluted by riverine freshwater, and is the most productive marine environment. The salinity gradients, and the typically complex interactions between river current and tidal flow create a unique habitat that supports a diverse population of aquatic plants and animals.

So rich are the biological resources of the Bay that the Algonquin Indians called it "Chesapiean," the "Great Shellfish Bay." The Bay's 64 000-sq mile drainage basin includes parts of six states and the District of Columbia. The Bay is 195 miles long, between 3.4 and 35 miles wide, and an average of 28 ft deep. There are 50 major rivers that flow into the Chesapeake, six of which contribute 90% of the total freshwater inflow. The largest of these is the Susquehanna River, the headwaters of the Bay.

There are 12 million people in the Maryland–Virginia–Pennsylvania section of the drainage basin. Sixty percent of Virginia's population lives in the tidewater region of that state, only one-third of its total land area. The Bay is a commercial center, home of two of the five major ports in the North Atlantic coast—Baltimore and Hampton Roads. Industrial activities include coal exporting, shipbuilding, manufacturing, and meat, seafood and vegetable processing.

Seafood harvesting and processing are critical to the economy of coastal communities, providing thousands of jobs. The world market for Chesapeake Bay oysters is

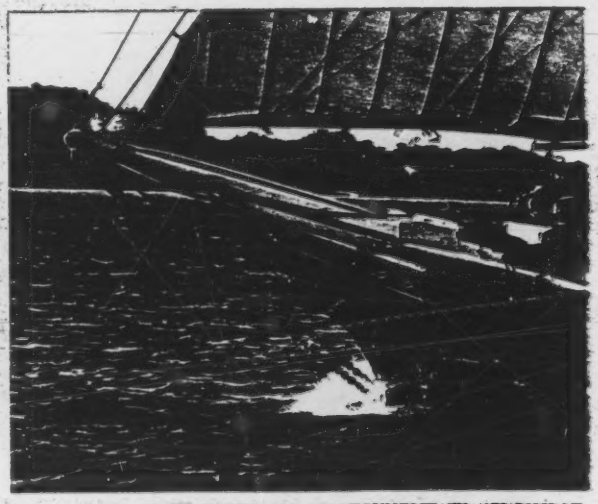


PHOTO COURTESY M. R. WARNER PHOTOGRAPHY, ANNAPOLIS, MD.

second only to those from Japan, and the Bay is one of the largest producers of blue crabs in the world.

The Bay provides a recreational resource unparalleled on the east coast, with 1750 miles of navigable shoreline, and an annual sportfishing value of nearly $300 million. Numerous beaches and safe harbors support swimming and boating activity. The beauty of the region may even begin to rival the Sunbelt as a prime corporate location for major businesses.

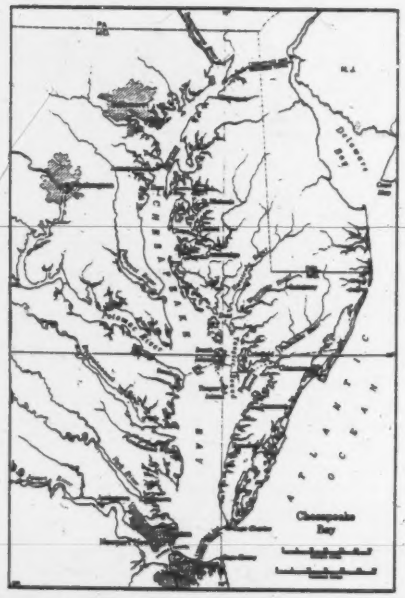
What is now characterized as a "moderately healthy estuary" is undergoing rapid and significant deterioration. Decades of piecemeal research were finally coordinated and supplemented with a comprehensive attempt to assess the condition of the Bay and develop a plan to manage this national resource.

The Chesapeake Bay Program

A movement begun in 1973 by Senator Charles Mathias (R-Md.) resulted in the formation of the Chesapeake Bay Program (CBP) as an amendment to the U.S. Environmental Protection Agency (EPA) budget for fiscal year 1976. EPA was charged by Congress to assess the water quality of the Bay, to develop computer models to predict the effect of changes in point source and non-point source pollution, and to make recommendations for beneficial management of the Bay. Of 10 major problem areas, three were selected for in-depth study: nutrient enrichment (eutrophication), toxic substances, and the decline of submerged aquatic vegetation (SAV).

The study, originally funded for 5 years at $25 million, took 6 years and nearly $30 million to complete. The tangible products of the research include: 40 research projects, a primer on the ecology of the Bay, a synthesis of the technical studies, a characterization of the Bay's water quality and resources, and a management plan.

According to Tudor Davies, the director of the CBP until 1982, the primary objective of the program was an integrated approach by federal and state agencies. Davies, impressed by the effective results of the International Joint Commission on the Great Lakes, wanted the program to evolve toward that type of effort. Perhaps the most significant feature of the program is that it was a comprehensive plan to study the entire Bay as a system.



From "BEAUTIFUL SWIMMERS" by William W. Warner, map by Samuel Bryant. Copyright 1976 by William W. Warner. Reprinted by permission of Little, Brown and Company in association with The Atlantic Monthly Press.

Results of the study

Nutrient enrichment. The nutrients of primary concern in the Bay are nitrogen and phosphorus. Nutrients enter the Bay through a variety of natural (bacterial conversion, plant and animal decay) and man-made sources (agricultural fertilizers, wastewater treatment). Although essential to the health of any aquatic ecosystem, over enrichment can cause excessive algal blooms. Decay of these algae consumes oxygen, and can reduce dissolved oxygen concentrations to harmful levels. Algal growth may also be unsightly and produce unpleasant odors.

The western tributaries (the Patuxent, Potomac, and James rivers), the northern and central main Bay, and two of the eastern tributaries (the Chester and Choptank rivers) are significantly enriched with nutrients. Water quality in the lower Bay is substantially better.The Susquehanna River is the largest riverine (above the head of tide) source of nitrogen and phosphorus, a function of the size of its drainage area and the magnitude of its annual flow. Runoff from agricultural land is responsible for the largest fraction of nutrients from riverine sources, because of the high percentage of land devoted to agriculture and the high unit-area loading of nitrogen and phosphorus fertilizers.

Point sources, discharges from municipalities and industries below

PHOTO COURTESY CITIZENS PROGRAM FOR THE CHESAPEAKE BAY, INC.

the head of tide, are cited as the major contributors of phosphorus, while nonpoint sources (runoff) contribute the highest proportion of nitrogen. Nutrient loads also vary seasonally. Heavy spring runoff from the Susquehanna makes nitrogen the most abundant nutrient during that season. With the contribution of phosphorus released by the sediments under anoxic summer conditions, phosphorus is most abundant in the summer. Therefore, the study concludes that the limiting nutrient for algal growth—that which is in shortest supply—is phosphorous in the spring and nitrogen in the summer. Nutrient control strategies need to include considerations of nutrient variation by season and by source.

Toxic substances. The study addressed two broad categories of toxic substances, metals and organic chemicals. Both types tend to associate themselves with particulate material, and accumulate in the sediments. Substances in either group may exert their toxic effects directly, or be bioaccumulated in the food chain.

The highest concentrations of metals are in the sediments of Baltimore Harbor and the Elizabeth River. Elevated metal concentrations were also found in the northern main Bay near the western shore. Human sources account for at least half of the total chromium, cadmium, copper, and lead in the Bay. Because metals tend to attach to detritus or silt, increased concentrations frequently exist in water near the surface where biological activity is high, and are readily available for uptake.

Point sources, both industrial and municipal, are the largest sources of metal contamination according to the study. Discharges from Baltimore City and County in Maryland are the most significant, followed by Richmond, Norfolk, and Hopewell, Va. Industrial sources contribute twice the metal concentrations from municipal discharges.

Organic contaminants are most concentrated in the sediments of the northern Bay and Baltimore Harbor. Elevated concentrations also exist at the mouths of the Potomac, the Patapsco, and up to the Susquehanna River. Oysters from around the Bay were sampled and their tissues analyzed for toxic organics. Forty-two compounds at concentrations greater than 50 ppb were detected, particularly in oysters from the James River and Baltimore Harbor.

Human activities account for nearly all the toxic organic materials in the Bay. Almost one-half of the industrial effluents tested in a bioassay produced some mortality in fish or invertebrate test organisms. Toxicity tests showed that the sediments of the Patapsco and Elizabeth Rivers and the northern Bay are potentially the most toxic.

The degree of toxic contamination clearly varies with location in the Bay. In addition, the toxicities of individual metals and organics vary widely. Management of toxic contaminants will probably be based on a priority ranking system which considers the location, the compound of concern, and the organisms potentially impacted.

Submerged aquatic vegetation. A variety of weeds and grasses common to the littoral zone of the Bay are collectively known as submerged aquatic vegetation (SAV). There are about 10 abundant species of these submerged vascular plants, and 10 more that are not as common. The marked decline in SAV observed since the 1960s includes all species in all parts of the Bay.

These plant communities are enormously significant to the health of the Bay for a number of reasons. They are biologically important primary producers, and they provide food and habitat for fish and waterfowl. They also provide protection from predators, and act as a critical nursery ground for the blue crab. They function to physically stabilize the sediments and to control shoreline erosion. In addition, their metabolism chemically buffers the environment from the effects of excess nutrient concentrations.

In 1965, SAV was responsible for 40% of the total primary production in the Bay. By 1975, this figure was only 6%. Although historically, disease has been responsible for short-term or localized declines in SAV density or diversity, disease was not the cause in this case. The CBP report cites studies in other countries that found a positive relationship between deteriorating water quality and decline of SAV. In the Chesapeake, the reduction in SAV correlates with increased nutrient loads and chlorophyll-a concentrations (an indica-

tor of algal activity associated with nutrient enrichment).

Suspended sediment and algal growth contribute to increased turbidity which limits light penetration in the littoral zone. Sunlight, critical to all plant life, is also blocked by epiphytic organisms attached to the surfaces of SAV. Although toxic concentrations of herbicides were at one time thought to be a likely cause of SAV decline, the effects of these chemicals are only significant locally, close to the source.

From research to action

Although the three areas of research chosen as the focus of the technical studies are considered the most serious of the problems in the Bay, they represent a multitude of related concerns—alteration of wetlands, shoreline erosion, effects of dredging, shipping, and boating, shellfish bed closures, and fisheries modification. Effective management of the Bay will depend on development of a program based solidly on available data, but flexible and broad enough in scope to include all of these important aspects.

On October 1, the character of the program changed from research to action. The Chesapeake Bay Liaison Office was established with five permanent EPA positions, and $1.2 million in federal funds. Part of their responsibility is to maintain, refine, and update the computer models and data management systems. It is the largest data base in the world for a single ecosystem, according to Virginia Tippie, CBP director.

The Liaison Office will coordinate all the monitoring activities by the federal and state agencies and academic institutions. They will also assist the states to implement their parts of the management plan.

On September 26, EPA submitted to Congress "Chesapeake Bay Program: An Action Plan," their management recommendations. The recommendations focus on attainment of desired uses in segments of the Bay. By comparing living resource trends to water quality trends, they hope to develop a classification system from which resource objective-based water quality standards can be set. The Action Plan acknowledges the need to consider both point and non-point sources and the assimilative capacity of the Bay. The recomendations include improvement of technological controls through the National Pollution Discharge Elimination System (NPDES). Non-point source controls are presently inadequate, and control of point sources will be directed where lower nutrient concentrations are most needed. If toxic contamination is a potential problem, as with dredge-and-fill activities, specialized control measures may be required.

A similar set of recommendatons are being prepared for submittal to the state governors participating in the December Chesapeake Bay Conference. Five committees are preparing specific recommendations regarding land activities, water activities, fisheries management, habitat preservation, and monitoring. The critical step will be the translation of these recommendations into sound management practices and enforceable regulations.

Perspectives on the Bay program

The key to the success of the Chesapeake Bay Program is that it was designed to be an integrated, comprehensive study. The Bay and its drainage basin—composed of parts of six states and over 150 rivers, creeks, and branches—was considered as one system. In the same way, the people and institutions that participated in the study were coordinated under a single objective. The interests of the various federal, state, and local agencies, and the concerns of watermen, farmers, treatment plant managers, and environmentalists were represented in the process.

Coordinated approach. Tudor Davies feels that these are the characteristics that led to the success of the research effort, and must now be applied to the implementation phase. Davies believes that a "coordinated institutional arrangement is fundamental" to the success of the management program. The governors' conference is a first step toward a viable plan of action. The research effort recognized the separate effects of point and non-point sources on the total system. However, as a practical matter, Davies says that implementation will depend on priority decisions regarding which sources have the greatest impact, and which sources can be controlled most effectively. Recommendations for legislation will have to be made after realistic consideration of the limitations of the regulatory system.

William C. Baker is the director of the Chesapeake Bay Foundation, a privately funded, non-profit environmental organization. Their activities include public education, legal representation for natural resources, and operation of a land conservancy that manages 3200 environmentally sensitive acres. Baker is concerned that the EPA recommendations will focus too closely on the practical, or "do-able." Action which may be desirable, but technologically or financially impossible now, may well be feasible in years to come. He feels it is important to strive for the ideal, and let those responsible for actual implementation, the state agencies for example, determine the priorities. He is gravely concerned that the recommendations will be made as though they were draft regulations.

Baker is very optimistic about the results of the program, and points to the Chesapeake as a textbook example of an estuary. As such, the management of the Bay can serve as a model for other, similar areas such as Galveston, San Francisco, or Narragansett bays. The program also clearly demonstrates the importance of federal involvement to coordinate dialog between the states. Baker feels the

management program can be a model of interstate cooperation. He also stresses that the recommendations should not underestimate public willingness to pay to clean up the Bay.

There is already money available. The 1984 EPA budget contains $4.2 million for implementation, $3 million of which is available as grants to states on a matching basis. A Clean Water Act amendment scheduled for the Senate floor this fall includes $10 million in matching state grants with an additional $3 million for research. It is a long road, however, to authorization and appropriation.

Where to begin?

William M. Eichbaum, assistant secretary for Environmental Programs for Maryland, is likely to be one of those responsible for implementation of the program recommendations. He is impressed with two aspects of the program's approach. The effort was unique among most research studies in that it attempted to assess the relationship between water quality problems and the quantity and quality of living resources in the Bay. He hopes that the issue of toxic contamination will be researched further.

Eichbaum also praises the design of the program that prepared it for the transition to implementation. The Bay program was not designed to produce a report and sit on the shelf, but rather to generate an implementable plan of action. Eichbaum recommends what he calls "legitimate planning" for selecting what to do first. He feels strongly that the emphasis should be placed on the non-point source problem but that action should proceed in stages so that results can be evaluated before further resources are invested.

Austin Librach, director of Environmental Programs for the Metropolitan Washington Council of Governments, points to the success of the cooperative state and federal efforts to control pollution in the Potomac River. The final report on the Chesapeake Bay study specifically notes the substantial improvement of water quality in the lower Potomac River. Librach hopes that the management recommendations will not generalize too broadly from the actual data. He is concerned that the analysis of the data is not yet complete, and that perhaps the research did not go far enough to pinpoint the causes of all the Bay's problems. He stresses that the management plan must avoid "finger-pointing."

The phosphorus issue

Point sources, industrial and municipal discharges, have traditionally been the focus of pollution control efforts. The Bay receives nutrient loading from over 80 industrial discharges, and metal loads from a similar number. There are between 230 and 240 municipal wastewater treatment plants that discharge to the Bay and its tributaries. In 1980 their combined average daily discharge was nearly 1400 mgd. The Susquehanna, Potomac, and James rivers receive by far the most treated wastewater, but at least half the plants in these rivers practice phosphorus removal.

James Borberg, general manager of the Hampton Roads Sanitation District (HRSD), is in charge of eight plants in the Bay area. He supports factual water quality studies such as the Bay program, but is concerned about the tendency for these issues to become emotional. He stresses that a uniform standard for wastewater discharges may not be appropriate. He cites data from the Virginia Institute of Marine Science which he says indicates that light-blocking silt in the water, more than nutrients, may be the limiting factor in algal growth. Furthermore, he says there are indications that the limiting nutrient may be nitrogen in the lower Bay and phosphorus in the upper Bay.

Borberg hopes that if the study recommends what he calls "exotic" treatment (HRSD plants do not use any tertiary processes), that the public will be polled as to their willingness to pay for such treatment. HRSD recycles some of their sludge as fertilizer, and Borberg is concerned that chemical addition for phosphorus removal may effect sludge characteristics and make it unusable. Their reuse program generates income where sludge disposal would increase costs for HRSD.

Other people in the wastewater treatment business would like to see a ban on phosphate-containing detergents. A ban of this type successfully reduced point source contributions of phosphorus in the Great Lakes region. There are two potential benefits, one environmental and one economic. A phosphate ban would reduce the total phosphorus loadings to the Bay without special treatment for its removal. If chemical precipitation of phosphorus were not necessary, millions of dollars a year could be saved at treatment plants by reduced sludge production and chemical costs. Moreover, a phosphate ban would produce an immediate decrease in phosphorus loading. Establishment of a water quality standard or a treatment requirement could take years to produce an effect.

The governors' conference Land Activities Committee, which represents wastewater treatment, among other concerns, plans to focus its recommendations on a need for vigorous nutrient control. In recognition that we have better knowledge of point source control, the committee's recommendations start there. Their goal, says Robert McGarry, former general manager of the Washington Suburban Sanitary Commission and current chairman of the committee, is to reduce overall phosphorus loading to the Bay by 20%. McGarry is aggressively supporting a phosphate ban and hopes his committee will recommend one. A 2 mg/L limitation is proposed for phosphorus from all point source discharges. This level is thought to be practical and rea-

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sonable and likely to contribute significantly to the goal of 20% reduction. The remainder of the reduction would be achieved through non-point source controls.

McGarry praised the Bay program for generating the momentum for improving the water quality of the Chesapeake Bay, but was mildly critical that the results failed to establish a specific quantitative relationship between nutrient concentrations and damage to living resources. He says the committee will recommend that total nitrogen loadings be held to the present level. The EPA 208 planning program will provide the framework for the non-point source strategy recommended by the committee.

Economic incentives

Dan Gill, a farmer from Remlik, Va., is co-chairman of the Land Activities Committee. He has been closely involved with the Chesapeake Bay program for the last 5 years. Gill applauds the research effort, and believes that there is adequate evidence to support the need for expenditure of public funds for nutrient control measures. He is concerned, however, with identifying the source of the problem. Although agricultural land is considered to be the major non-point source of these nutrients, Gill points out that on a per-acre basis, urban use results in much greater loadings than cropland. Gill also stresses the nature of the impact of the different forms of nitrogen associated with point and non-point sources. Municipal discharges are characterized by ammonia as the dominant form of nitrogen. Nitrogen from cropland frequently enters through the groundwater as nitrate nitrogen, which has the potential to be denitrified in the sediments. Ammonia not only functions as a nutrient source but also exerts a significant oxygen demand.

Gill believes strongly that new farming technologies can substantially reduce non-point nutrient loadings. No-till farming leaves residues from previous crops on the soil surface and protects the soil from erosion, as opposed to plowing which continually exposes free soil. New foliage-activated herbicides have been developed that are sprayed at low concentrations and do not go into the soil to be leached or eroded into the water.

George Wolff, a Pennsylvania farmer active in the Bay program, points out that erosion control is not a panacea. Erosion of fertilized soil is the principal mechanism for phosphorus input to the waterways. If erosion is controlled by good soil conservation practice, soil containing nitrogen will be held in place longer—long enough, Wolff fears, to be successfully leached into the groundwater. Wolff emphasizes that erosion control will have to be coupled with careful control of nitrogen application.

Both Gill and Wolff agree that farmers will respond enthusiastically to the economic incentives of agricultural nutrient control. It is certainly in a farmer's best interest to keep his valuable topsoil on his land, together with the expensive fertilizers, pesticides, and herbicides he has applied. Furthermore, it is certainly no advantage to a farmer to apply more of these chemicals than he absolutely needs. Educating farmers about these benefits is likely to be more effective than strapping them with a regulation. Virginia and Pennsylvania both are providing economic incentives to farmers to plant buffer zones of foliage along streams bordering their crops to help stabilize the topsoil.

Controlling agricultural runoff may be easier than controlling that from urban areas, says Gill. In agriculture, one man may control hundreds of acres. He may be easier to motivate to practice pollution control measures than would hundreds of people on half-acre lots. The decline of Bay resources must be recognized as a cost of urban development in the drainage basin.

The importance of toxics

No one depends more heavily on the living resources of the Bay than the watermen. For years they have observed the steady decline in the harvests of fish and shellfish. The results of the Bay program prove that they have not been "crying wolf," says Cranston Morgan. Morgan and his sons run a seafood packing operation in Virginia. Morgan is 64 years old and has made his living from the Bay since 1935. He remembers in the 1950s, Virginia alone produced 3 to 5 million bushels of oysters a year. Now that production figure is down to 600 000. Spot, croaker, perch, shad, and rockfish in the Bay have been reduced significantly. Morgan acknowledges that overharvesting may be partially responsible, together with construction of dams and navigational structures, and pollution. "We have always had runoff, but we had the Bay grasses to help control it. Now we've lost so much shoreline to bulkheads and urban development, it's a direct discharge."

Morgan's main concern is the concentrations of chlorinated organics discharged by municipalities and industries. He says that wastewater treatment plants have done a good job of controlling the chlorine residual in their effluents, but the chlorinated organics formed in the disinfection process are a serious threat to living organisms. He is pleased that the Chesapeake Bay Program evaluated the whole pollutional picture, but feels that the toxics issue was not stressed as strongly as it should be.

Dan Gill described the results of the Bay program as a "snapshot" of the Bay. It is clear that the multitude of groups whose lives and livelihoods are touched by the Bay are satisfied with the results of the program and recognize the need for coordinated action. The goals are obvious. But, as Cranston Morgan put it, "Reducing this to General Assembly action is the name of the game."

Karen B. Carter

Ms. BABCOCK. The Chesapeake Bay may be our most extensively studied estuary, but it is not the only one with serious problems. High concentrations of coliform bacteria have forced the closing of sections of Mobile Bay to swimming and shellfish harvesting.

In San Francisco Bay, localized heavy concentrations of mercury, lead and gold from Silicon Valley pose a significant threat to aquatic life.

There is also strong evidence that pesticides and fertilizers washing in from the Sacramento and San Joaquin rivers are causing infertility in striped bass, resulting in population declines in that species in excess of 50 percent in the last decade.

Our estuaries are also disappearing. Over one million acres has been lost nation-wide since 1960. California recorded a 67 percent decrease in basic estuarine habitat between 1950 and 1967, when indiscriminate filling was finally halted by the State.

Legislation is needed to recognize the importance of estuaries as unique and critical habitat and to help protect them not only from pollution but also from fresh water diversion and overuse, so that their great productive value is not further diminished.

Such legislation to be effective must, first, consider the entire estuarine watershed and all those transitional areas which are essentially influenced by water from an estuary; second: Tackle the transboundary pollution problems that may result when an estuary's water quality depends on the control of pollution in more than one State; three: Provide a management framework under which all States contributing pollution to the estuary and those States affected by that pollution can come together and develop a coordinated enforceable plan to protect the estuary; and fourth: Provide financial assistance to States involved in the cooperative effort so that they may implement pollution control measures, monitor the health of the estuary and the effectiveness of the controls and conduct necessary research.

There certainly are strong parallels between what I'm saying about bays and estuaries and what I said in the other portion of my testimony on nonpoint source pollution.

Section 319 of the Howard bill contains these provisions and therefore it has our support. We specifically support the method of estuarine water quality management proposed in the Howard bill. An estuarine management conference is a practical first step toward coordination of pollution control efforts among sometimes disparate States.

The complex nature of multi-State relationships lends itself particularly to the negotiation process envisioned in the conference concept.

However, development of an estuarine management plan should not be a process that takes place closed to public scrutiny. Accordingly, we recommend that section 319 be amended to add a public participation component in the development of an estuarine management plan.

In addition, we suggest that section 319 be amended to make it clear that the contents of an estuarine management plan be as stringent as or more stringent than existing requirements of law. We are sure that the intent of the section is not to establish a regimen of controls in conflict with or different from what would oth-

erwise be in place in the individual States without this program; but rather, to apply controls that might otherwise not be applied under individual State programs, or to impose more stringent controls than might be implied.

While this is implicit in the language of the bill, we would urge that it be made explicit to avoid any future confusion that might be generated.

We recommend one further step for this committee to consider in the effort to manage and protect our Nation's estuaries. Section 402 of the Clean Water Act should be amended to require that NPDES permits contain a cumulative assessment of the impact of a specific downstream discharge on a downstream estuary.

Although this requirement can again be inferred from the language of section 402, the fact that it is not explicit has resulted sometimes in narrowing the scope of the evaluation of the effect of the discharge to the proximate discharge area.

The result is that while water quality standards in a single tributary may be met, the impact on the downstream estuary may be significant or even unacceptable unless the combined synergistic effect of its many tributary inflows is considered.

Finally, at the risk of stating the obvious, we assume that if there are exiting programs effectively addressing problems in a given estuary, that this program should be in support of those efforts and not require those States to start anew.

An example that immediately comes to mind is the case of the Chesapeake Bay where millions of dollars have been spent to date and work undertaken to develop a plan comparable in many respects to what is recommended here.

Thank you. I would be pleased to answers on both this portion of my testimony as well as on the nonpoint source portion.

Mr. ROE. Dr. Clark.

Dr. CLARK. Thank you, Mr. Chairman, members of the committee. My name is Edwin Clark. I am a senior associate at the Conservation Foundation, an environmental policy research organization here in Washington.

One of the projects we are involved in is an assessment of the off-farm impacts of soil erosion and their costs. I would like to talk to you a little bit today about those.

Recognizing it's late, I think I will summarize very briefly the three major points I made in my written testimony.

The first is that nonpoint source pollution is a very serious problem in the Nation's waterways. It is, by various studies, responsible for 66 to 99 percent of the sediment entering the water, 80 to 92 percent of the nitrogen, 42 to 94 percent of the phosphorus, 49 to 76 percent of the BOD, and up to 98 percent of the bacteria.

Many people underestimate how significant the erosion problem is in the United States. From the 1977 NRI study, some comparisons are interesting. One I like is a comparison in Iowa where for every ton of corn that State produced in 1977, 5 tons of soil eroded from that State's lands.

This is a very significant problem causing very serious problems in many waterways. And many of our waterways will not be able to achieve water quality standards without taking care of nonpoint source pollution.

The second point I wanted to make is that it is very costly. Our study has tried to identify all the different impacts and, where possible, to figure out what their economic costs are. The preliminary results of this study—it is now in its final stages—are that it's costing the Nation somewhat over $3 billion a year from the soil erosion coming off of agricultural and other lands. Much of this cost is experienced in areas that are familiar to people working with water quality, areas like recreational impacts, having to treat drinking water supplies, areas like that.

Much of the cost, though, is experienced in other areas which you may not be familiar with: filling up of reservoirs, increased flood control damages, problems like that. These are all serious problems.

I should also say that it appears to me that our estimates are really very conservative. We have not tried to make estimates for a number of damages for which the attribution of monetary values is very difficult. I think that the total damages could well be twice what we have estimated.

Finally, given the fact that it is a serious problem and that the costs are very high, the question is whether we can or should do something about it.

Here I think the answer is yes we can and yes we should. We certainly have the techniques to control nonpoint sources of pollution in most cases. I think we also have the knowledge about which techniques should be used and where they should be used—again, in most cases.

One item I might point out here which I did not mention in my written testimony is that the first thing we did when we undertook our study was to write to all the 208 agencies to ask for copies of their plans relating to nonpoint source pollution. The most immediate response we got was the return of our letters with addressee unknown in about 10 percent of the cases. There is a lot of information, a lot of work that has been done out there that is being lost because we are not getting on with the job.

We have, over the past three decades, as you are probably aware, spent over $20 billion in the traditional Federal programs to reduce soil erosion. But we are still losing over 2 billion tons of soil a year from our crop land. That indicates to me that, unlike some of the earlier testimony you've heard on this subject, our existing programs are not adequate.

We are going to have to go beyond these traditional programs, and I believe that H.R. 4037 introduced by Mr. Oberstar takes us a good step in that direction.

Thank you for the opportunity to testify.

Mr. ROE. Thank you very much, all of you, for your fine testimony. The gentleman from Minnesota.

Mr. STANGELAND. Thank you, Mr. Chairman. Ms. Babcock, I just want to visit with you for a moment on your concern about the estuarine basin.

And I think it's on one of the latter pages—15. Because it came up the other day as well, and it occurred to me—well, the entire estuarine watershed, I think is how you put it.

Ms. BABCOCK. That's correct.

Mr. STANGELAND. Wouldn't Bemidji become a part of the estuarine watershed for New Orleans?

And I understand your concern, and I'm not trying to be facetious or anything. When you look to the last page and your recommendation that an NPDES permit contain cumulative assessment of the impact of a specific downstream discharge on downstrean estuary, that could mean that we would have to go clear to Bemidji and analyze the whole river system for every NPDES permit that we granted, wouldn't we?

It may not be the nightmare that I think it is, but I sense that it can be quite an extreme problem in finally issuing a permit.

Ms. BABCOCK. There is certainly a breadth to my proposal that you have, I think, quite accurately described. And I would certainly hope that a rule of reason would be applied and I'm not talking about when you take a system as large as the one you've just described, accounting for every single NPDES permit that has been issued.

But I know the frustration from having, frankly, litigated cases on the Chesapeake Bay involving the issuance of NPDES permits and being quite concerned about the synergistic effects of that particular discharge with other discharges either from point sources or nonpoint sources entering downstream, and not even being able to look at the water quality downstream as part of the evaluation of the discharge permit that was the subject of the litigation, and feeling that piecemealing was not protecting the resource.

So in both the definition of estuarine watershed you're saying that you really, when you're trying to manage an estuary, that it's critical that you get the major contributors of pollution to that estuary and to reach them you have to move out into the estuarine watershed and pull into the planning process and the management process those contributors.

And you can't do it right now through either the single vehicle of an NPDES permit or looking at an individual State's program for trying to control point or nonpoint sources.

I think what has happened in the Chesapeake Bay is exactly the type of planning model that I was referring to in my description of essential items for an estuarine management program.

When it comes to the more difficult question, say, of issuing an NPDES permit, I would just like to have the discretion both as a representative of a public interest group trying to, let's say, challenge the issuance of a permit, and even more importantly for the administrator who issues the permit to go off the outfall, to go beyond the outfall and look at the water quality far enough downstream and far enough upstream that he can see the effect of the particular discharge on that wider area, and manage accordingly.

Mr. STANGELAND. I can feel sympathy for a downstream State required to clean up water if an upstream State is polluting that water. It's kind of a futile thing. On the one hand I appreciate your comment of the rule of reason, because I think it has to be interjected here, that there has to be some kind of rule of reason.

It's not only clear to Bemidji, but it's clear to Cleveland in that whole watershed. That's a gigantic—that's the whole central part of the United States.

Ms. BABCOCK. You can get most of the United States in some estuarine watershed or another, there's no question about that.

Mr. STANGELAND. Dr. Clark, you make the point that nonpoint sources contribute 80 to 92 percent nitrogen, and up to 94 percent of the phosphorus, 76 percent of the BOD and 98 percent of the bacteria entering our waterways, all nonpoint.

We had somebody testifying, either yesterday or the day before, that while agricultural nonpoint source pollution was a major problem in the overall polluting system, and I hope I'm phrasing this correctly, as far as harming the quality of the water, it wasn't that significant.

I think what would be interesting to know and what I think we have to know is, while these percentages are high of these particular substances entering the waterways, what is the end result of the amount of these substances in the waterway afterward?

If it can be 94 percent, you could still have 1 minute quantity totally in the total water system.

Dr. CLARK. Two comments I might make. One is that those percentages refer to all nonpoint sources, not just agricultural sources. The second one is that if you want to know what the cost of that pollution is, then I would refer you to the study that we are completing which looks at the costs of soil erosion and its associated contaminants.

And that is where we came up with the estimate of $3 billion a year. This is not all in traditional water quality damages as I said. Much of it is in filling up reservoirs, and flood damages, and other damages like that.

Mr. ROE. If the gentleman would yield. I think you are fortifying, Dr. Clark. You are fortifying the testimony from agriculture, in part. The present acceptable water quality standards which we applaud in the revision by Mr. Ruckelshaus does really not speak to the issues of nonpoint source. I just want to get that in there—having to do with, again, the soil erosion and the other issues.

And it seems to me that when we're speaking of nonsource, we have to start to define that more. Because I think the point you were making was extremely well taken. We've had that in testimony, not before this set of hearings, but on the water resources development program, vis a vis the point of filling in of reservoirs, the sedimentation taking place in drainage channels, irrigation channels, and flood control structures.

Dr. CLARK. But there are many types of damages that are associated with water quality criteria. Nonpoint sources, the nutrients and sediment, are killing fish and destroying their spawning areas. They are creating eutrophication in our lakes; they are increasing water treatment costs downstream; they are causing many of these damages which are related to water quality standards.

Mr. ROE. I understand that. Now, what I'm trying to get at is I think we have to look to expanding those water quality standards to get to this issue, you know.

The gentleman from Minnesota.

Mr. STANGELAND. Thank you. You have apparently been here today and have heard the other witnesses. I think the testimony has been that nonpoint source pollution from agricultural runoff is a serious matter. I'm a farmer and, believe me, losing our land is a

serious matter. I think we've had all kinds of other evidence of that in other testimony and in other documents.

It is a concern and there has to be a solution. Hopefully we're moving toward that more rapidly with new technology as far as land management practices on the land. I appreciate your comments.

Dr. CLARK. As I mentioned, one of the things that concerns me is that we will lose the momentum that was created by the 208 process and by some of the other processes if we don't take this next step now.

Mr. STANGELAND. Mr. McGreer, I asked the Agriculture witness this morning about the tremendous changes in agricultural practices and the fact that we don't seem to be able to keep up because we're much more intensely farming the land now. In some ways, after 47 years of a soil conservation program, we seem to be farther behind now than when we started out.

What's happened in silviculture activities over that same period?

Mr. MCGREER. Congressman, I think we have a record of somewhat different experience. I was here this morning and heard the Agriculture response to the question. SCC started out in 1935, and you'll have to appreciate that I was not around then. But I do a lot of reading.

In 1935 or 1940 or 1945 and even 1950, in the West Coast, for instance, the typical way to log was to build a railroad up the stream valley and to cable the logs from the top of the mountain to the stream and haul them out by rail.

We got a little more advanced and industry did that with tractors. If it wasn't taken out by rail, it was brought into the stream; the stream was dammed until it had enough water and enough logs and it was called splashed dammed down the streams.

Now, we've gone from that type of a situation to new technology. We got into a system where we build roads, and haul logs with trucks. We no longer build roads in stream valleys and operate in that kind of a fashion.

It is my personal opinion and I think it's the opinion of all forest hydrologists that the potential problem in silviculture is sediment. And that's what the majority of our best management practices are directed to control. Today we operate truly with best management practices. Roads are designed to reduce the amount of sediment and runoff.

I think we are doing that quite successfully.

Mr. STANGELAND. You stated that 40 States have developed nonpoint control programs. Do you have any information on how they're funded, what kinds of incentives and regulations are involved and how well they're operating?

Mr. MCGREER. Yes, we do, and that will be included in our record. The report prepared by NCASI, our technical arm discusses in greater detail the variety of programs operating at the State level.

Most of those programs are funded internally. They are in place operation, and most of those programs, again, are funded internally by the States, although there are various programs that use, in part, Federal moneys.

My own experience in Idaho right now, we have a Forest Practices Act and rules and regulations which we abide by there, enforced by the State. Right now I'm participating in a team which is composed of various State agencies, some Federal agencies, some interest groups, myself representing the forest industry where we are volunteering our time to actually audit in the field how well the forest industry is performing with respect to management of the land and application of best management practices.

Right now in the whole State of Idaho, we only have five woodland foresters. Half of their time is spent helping the small landowner manage his forests, part of that being, of course protection of public resources like wildlife and water. The other half of their time is spent looking at practices, making sure that the Forest Practices Act is being followed.

I only bring that up to mention to you that there is an example of a State, the level of implementation of at least tracking the BMP program is in some jeopardy because of lack of Federal support.

Mr. STANGELAND. I understand that there are seven State programs which are regulatory. Does the forest products and paper industry have difficulties with those, and if so, what are the potential difficulties with a national program of regulations in the nonpoint area rather than incentives, from your perspective.

Mr. MCGREER. I don't think we necessarily have difficulty with a regulatory program where regulatory program may in fact be necessary.

For instance, most of the regulatory programs are on the West Coast; California, Oregon, Washington, Idaho, where there is a lot of rainfall, a very steep terrain, and there are very high values associated with streams and fisheries and the recreational and commercial values associated with them. Those States chose to go a regulatory route.

On the other hand, particularly in the Southern States of the United States, you have as much as 70 or 75 percent of the entire forested land base that is owned by very small private owners.

In those situations, we don't feel that a regulatory program is the way to go at all. On the contrary, we feel that educational programs, forest extension type of services, where you have an extension agent who is a landowner's friend, and helper, are a much more effective way of insuring good management of the land. This in turn results in good management of water quality.

Mr. STANGELAND. One last question for the panel. You might each want to comment on this. Mr. Ruckelshaus expressed concern that an incentive program might end up being a disincentive to voluntary action from the point of people trying to get in line for money and not doing anything until the money was there in hand.

Would you care to comment on that? What's your perception of that problem? Or isn't it a problem?

Mr. MCGREER. Well, I don't believe that S. 431, or H.R. 4037 are really introducing a very massive program. I don't think we're in danger of spending great amounts of money in those programs. It's certainly not necessary in the silviculture area, No. 1.

No. 2, at least, and again in the case of silviculture, rarely are we actually involved in an incentive program. I really don't see that as a threat to implementation.

Mr. STANGELAND. Ms. Babcock.

Ms. BABCOCK. Yes. I'd just like to amplify on that. I think we heard today very eloquent testimony from regulators, people who have been trying to deal with nonpoint source pollution, recognizing not only the extent of the problem, but their desire to get on with the job of managing the problem.

I would agree that this is clearly not a money program. And therefore, I think the danger is very, very slight that certainly people of good will, as we heard today, would stop whatever they would like to be doing, or are already doing waiting for some trickle down of funding.

I disagree with that concern.

Mr. STANGELAND. I guess I might want to put it in this perspective. Up to this point, there has been virtually no money. But if we were to start a grants program, could that be a disincentive?

Ms. BABCOCK. Well, I think it also reflects a reality situation. There is a flip side to the coin; there is a real need out there for money. In many cases the resources that were there dealing with nonpoint source at a very minimal level under the 208 program have disappeared.

Those resources and people need to be put back. It takes money to make all of that happen.

Mr. MCGREER. Congressman, could I say a couple words on that point?

Mr. STANGELAND. Yes.

Mr. MCGREER. If we regard any Federal moneys as seed money, seed money which could be used to continue to implement existing programs that were developed through 208, I think we should view that as a very constructive use of fairly limited amounts of funds.

Mr. STANGELAND. Dr. Clark.

Dr. CLARK. I would have to concur with my two panelists. I do not see this as a grants program. This is a program to control nonpoint source pollution with some money being given to the States to help them in doing this. But the idea is to come up with a program to do that, and not to get in line for grants.

So, as I understand the proposed legislation, it would not have that effect, and I cannot see it creating disincentives—certainly compared to where we are now.

Mr. STANGELAND. Thank you. No more questions.

Mr. ROE. The gentleman from Minnesota.

Mr. OBERSTAR. Thank you, Mr. Chairman.

I would like to make an observation before I propose some questions. On that matter of the Administrator's testimony and the suggestion that availability of Federal grant funds would be a disincentive to States.

That takes us back 23 years to the veto by President Eisenhower in 1960 of the Federal Water Pollution Control Act amendments which then proposed a matching grant program of 30 percent Federal grants for a total sum of $100 million.

President Eisenhower vetoed it with a message that said that water pollution is a uniquely local blight, and the availability of

Federal funds for grants program will only impede local efforts at clean up.

The history of the water pollution control program since 1960 has disproven rather thoroughly the message of that veto. And I think that we should also dismiss any such statements by the present administration about the availability of Federal grants. It's simply a cover behind which to hide from the obvious responsibility of the Federal Government in an area which is uniquely interstate and uniquely a Federal responsibility.

Sorry I was not here yesterday when Mr. Ruckelshaus was addressing that question.

Mr. STANGELAND. If the gentleman would yield.

Mr. OBERSTAR. I would be happy to yield to my dear colleague.

Mr. STANGELAND. There are those who say that it has been somewhat of an impediment, and I agree with you that the magnitude of the problem and the mandate from the Congress requires that the Federal Government be involved.

But in the case of Bemidji, the biggest impediment was the Federal rules and regulations hampering Bemidji's ability to solve the waste water problem.

Mr. OBERSTAR. That was, however, not the intent of the Eisenhower veto.

Mr. STANGELAND. I understand that.

Mr. OBERSTAR. It was the basis that the Federal grant funds—clearly overburdening regulations and rules have caused delays, no question about it, but not the availability of money. We would not have made the progress we have made today if the Federal Government had not made a massive commitment of funding.

Mr. McGreer, I appreciate your very thorough statement, both your oral and your more detailed accompanying statement, and these two reports which are voluminous and very specific and will provide a substantial data base for the committee as we proceed our review of the pending act.

I noted with some interest your comment that you would prefer the language and approach of the Senate bill on nonpoint source referencing Executive Order 12-372. We had some testimony on that earlier today and something that I want to look into further.

I recall very well the A-95 review authority whose effectiveness had depended more upon who was administering OMB and who were the administrators in the agencies at the time. And I tend rather to trust to specific provisions of law than the comings and goings of Executive orders.

So, I would ask you to consider some language for legislative framework that would incorporate the objectives of that Executive order, and I shall look into it and see what its history has been. We have not had any witnesses who have had any experience with that Executive order thus far.

I certainly would like to know more about it than to trust to some passing concept. But I certainly take note of your concern about ambiguity. We don't want to have a great deal of ambiguity because that does lead to program problems.

You discuss on the last page of your testimony a concern about the grant of authority to an interstate conference, as you put it, unilateral authority to modify existing State permits or plans. And

I can appreciate your concern that existing State permits might be modified.

But as a matter of legislative drafting, since there is no specific grant of authority in the bill, and there would be none unless added at some later time in some subsequent law, should the bill become law, none could be construed.

So there is no authority, no specific grant of authority here to modify any existing permit or plan.

Some States, however, do have regulatory programs for forestry. And I would like you to, if you have an example at the ready, if you could discuss such regulatory plan and how you feel any such conference might affect such a plan, a regulatory program, rather.

Mr. McGREER. Congressman, I think that's probably a question I'm not prepared to deal with. I would have to refer that to the API-NFPA staff.

Mr. OBERSTAR. Could you give us a couple of examples of those States in which there are regulatory programs dealing with forestry and permits that have resulted from such regulatory programs and how your concern would be translated in terms of the conference concept of this bill.

And then we could discuss this matter further to accommodate your concerns.

Mr. McGREER. Certainly.

Mr. OBERSTAR. If you would do that and submit that information to the committee.

Mr. McGREER. We certainly will.

[The information received from Mr. McGreer follows:]

AMERICAN PAPER INSTITUTE,
NATIONAL FOREST PRODUCTS ASSOCIATION,
Washington, D.C., December 13, 1983.

The Honorable JAMES L. OBERSTAR,
Committee on Public Works and Transportation,
U.S. House of Representatives, Washington, D.C.

DEAR CONGRESSMAN OBERSTAR: During the question and answer period following my November 16 testimony before the Water Resources Subcommittee, you asked me to elaborate on, and provide an example of, the concerns I expressed over Section 319(h) of H.R. 4037. You will recall that we supported the special conference approach to dealing with interstate nonpoint source problems. However, we do not believe that the results of such conferences should automatically modify existing state permits and/or plans.

In our view, a better technical understanding of long range transport of nonpoint sources must be collected before States are compelled to adopt the recommendations of an interstate conference, should those recommendations be contrary to existing State efforts. There is also still much to learn about the relationship between the implementation of best management practices and improvements in measures of ambient water quality. We believe that new nonpoint source initiatives should be designed to assist states in implementing best management practices to deal with known nonpoint source problems on priority waterbodies within each state. The interstate conference approach can be useful to develop a consensus for additional action on problems that affect waters in more than one state.

As we read Section 319(h) of H.R. 4037, a downstream State would petition EPA to convene a management conference to address interstate nonpoint source problems. The purpose of the conference would be to develop an interstate agreement to reduce the interstate problem. Each State which contributes to the problem, "shall develop, submit to the Administrator for his approval, and implement" a plan to reduce the level of nonpoint source pollution.

We would be most concerned over a situation where any upstream state does not concur with the findings and recommendations of the interstate conference (which could be dominated by downstream interests). Section 319(h) does not seem to call

for consensus recommendations from the conference. Instead, Section 319(h)(2) appears to create a mandatory requirement that the upstream state "shall implement" the recommendations of the conference. Presumably, this requirement would be subject to the citizen suit provisions of the Clean Water Act.

Your question on November 16 was specifically directed at the impact of proposed Section 319(h) on regulatory state forest practices acts. Using the Columbia River Basin as an example, Oregon and Washington could agree on the need to modify state forest practice regulations in the basin, and put forward this proposal as a recommendation from an interstate conference convened under Section 319(h). The language of Section 319(h) could be read to compel Idaho to modify its own state forest practices rules, whether or not Idaho concurs with the assessment that this is necessary to reduce interstate transport of nonpoint sources. Idaho's refusal to implement the conference recommendation would appear to be reviewable under the provisions of Section 505 of the Act.

During Senate deliberations on the nonpoint source issue, the American Paper Institute and the National Forest Products Association worked with the National Association of Conservation Districts to develop language for an interstate conference provision, emphasizing a consensus approach among affected states. A copy of this proposal is attached. This provision was deleted during Senate Committee deliberations because of concerns over its impact on existing interstate compacts. Consequently, the attached proposal may need to be modified to address this concern.

Please contact me, Mark Rey, or Pat Hill of the API/NFPA staff if you have any questions on the above or attached materials. We look forward to working with you on the Clean Water Act amendments of 1984.

Sincerely,

DALE MCGREER,
Forest Hydrologist, Potlatch Corp.

Attachment.

PROPOSED INTERSTATE CONFERENCE PROVISION

"( ) (1) Where the waters of more than one state are affected by nonpoint source pollution, the downstream state, or states, may petition the Administrator to convene an interstate management conference. The Administrator may convene such a conference in any case where the waters of the petitioning state or states cannot reasonably be expected to attain or maintain applicable water quality standards without additional action to control nonpoint sources of pollution in the upstream state or states.

(2) The members of such conference shall include the Administrator, a representation of each of the states whose waters are affected by a petition filed under paragraph (1) of this subsection, and a representative of each interested federal agency as determined appropriate by the Administrator.

(3) The purposes of any interstate management conference convened in response to a petition filed with the Administrator in accordance with paragraph (1) of this subsection shall include:

(A) to review the plans submitted under subsection ( ) by each state affected by a petition filed under this subsection to assess the impact of the plan on downstream waters of the petitioning state or states;

(B) to recommend priority corrective actions and implementation schedules to the implementations plans of affected states; and

(C) to develop, where appropriate, a comprehensive interstate implementation plan for the control of nonpoint sources of pollution affecting interstate waters.

(4) For any new or revised state or interstate implementation plans developed under this subsection, the Administrator may provide grants pursuant to subsection ( ) of this section.

Mr. OBERSTAR. I do commend you on a very thorough, professional statement and analysis of the program in general and of this pending legislation.

Ms. Babcock, I must say you went through H.R. 4037 with a fine-toothed comb. I give you the electron microscope award for analysis of legislation.

I'll not go through all of the points that you raised. On page 6, though, you suggest addition of language to the bill to authorize

the Administrator to approve programs in part only when there is a determination that such limited plan would make progress.

That is certainly the intent that we would not approve a whole program, but only parts. The purpose of this legislation is to get an implementation going and so we—perhaps you would have some suggestion of legislative language that might accomplish that intent.

Ms. BABCOCK. I would certainly be glad to provide that language later. I don't have it at my fingertips. It's difficult language to come up with.

Mr. OBERSTAR. Yes.

Ms. BABCOCK. I presume that was the intent, and the only reason I frankly made that comment is having worked with a program where, one, partial approval was not part of the program, but was then grafted onto the statute by administrative fiat, and then I saw how that process became somewhat abused.

I had the concern that unless the loophole was closed, the same kind of process might occur here under this program.

So it's an abundance of caution.

Mr. OBERSTAR. On the next page you suggest that States should target streams where the problems are the most serious. And yet in other testimony, we received today, the State of Wisconsin suggested targeting by watershed or area. That has been the thrust of my approach on the nonpoint source, that you can't go farm by farm, or creek by creek, but by watershed.

What would be your reaction to stream approach versus watershed approach.

Ms. BABCOCK. By stream approach, I didn't mean a term of limitation there. I certainly agree with testimony from Wisconsin that you are dealing with a watershed. It's an interrelated series of streams or tributaries. Once again my concern there was that unless there was a clear direction to the States that they ought to be targeting the problem area watershed, you know, in a watershed, or an entire watershed, that there be a specific direction that they pick in their priorities the most serious problems and the problems which can be affected by the application of best management practices.

And it was just a concern to put that kind of a driving standard into the bill as I did not see it, and not really a statement that it ought to be stream by stream as opposed to by watershed.

I certainly favor the broader watershed approach.

Mr. OBERSTAR. You continue to raise a question that where there already is a requirement in Federal law to address transboundary pollution problems, that provisions of H.R. 4037 should not apply. I certainly would have no quarrel with that. If you think there is some ambiguity on that point and have some suggestion of clarification or report language that would so clarify we would appreciate your comments.

Ms. BABCOCK. That, quite frankly, was reacting to a problem that occurred on the Senate side concerning the Colorado situation.

Mr. OBERSTAR. Yes.

Ms. BABCOCK. And I thought rather than losing a very valuable concept but not running afoul of a very legitimate concern, that the application of the multi-State transboundary approach might

disrupt arrangements that were basically solidified in law, you could simply solve that problem by exempting from the application of that section those arrangements.

Mr. OBERSTAR. What is your experience if any exists with this Executive order replacing A-95? That goes to the matter of Federal consistency. I think it's extremely important. I wonder if you have had any experience with this Executive order.

Ms. BABCOCK. When I was in the Government, I did not have experience with that Executive order, but I do have a concern about drafting an Executive order into Federal law.

Does that mean the President can at any point in time rescind or modify the order? If that is the solution, that is going to be applied, as seeming to be the solution they came up with on the Senate side, it should be written carefully enough so that one does not have a constitutional powers problem. You do not want to have a practical problem where conditions have changed; you do not want to be frozen in amber in the process.

Mr. OBERSTAR. I have not seen the exact language or proposed language of the Senate bill, but if you incorporate into law Executive order, then give the Executive the authority to change that order, then you are giving the Executive by fiat authority to change Federal law, and you are abandoning the prerogatives of the legislative branch.

Ms. BABCOCK. Or vice versa. He cannot rescind it because the law governs. I am sure it is something that can be drafted around. I am not sure the concept is a bad one, and this would certainly touch the necessary bases, so you would serve the necessary purpose of identifying the programs and achieving a mechanism to be sure they are consistent.

Mr. OBERSTAR. Perhaps you could review the Executive order and suggest some thoughts of legislative language without reference to a legislative order.

Ms. BABCOCK. I will never again go through one of your bills with a fine tooth comb.

Mr. OBERSTAR. I take note of your suggestion about a limit on planning. Clearly we did not intend for the agency to spend a lot of time on plans to develop an implementation program but to get on with the plans to put these programs into effect.

I am concerned about the demonstration programs and the discretionary use. I know you look with some favor on the Senate approach of giving one-third of the funds to the Administrator for his discretionary use.

My reservation is that on my own creative instincts. In squeezing money out of Federal agencies through the back door of their discretionary authority, I am concerned that we could not get in the front door on their regular program. I am very leery of establishing language slush funds for administrators to use even though I must say I have been very successful in squeezing out the money for my own district, but it is not the best policy.

Ms. BABCOCK. I agree that money that is set aside for discretionary use might be used in a way that might not be 100 percent consistent with achieving water quality goals. However, I think it is a good idea to give the Administrator some discretion which would enable him to reward a State that is making a very good effort to

address a difficult problem. It may be as much psychological as financial.

Mr. OBERSTAR. There are those extraordinary cases. For example, the Red River of the North that flows to Canada. Mr. Stangeland might have some unique problems in his district with waters flowing north and water is frozen in Canada and water does not move in that direction, and you have serious back-up problems. That might be one of the cases where discretionary authority a Secretary or Administrator would use to come in and do something unusual.

Ms. BABCOCK. That would cause the State to apply innovative practices, and they might not otherwise feel comfortable in taking an economic risk.

Mr. OBERSTAR. I would like to have something more limited in scope than proposed by the other body.

Those are the principal questions I have and points I wanted to discuss with you, and I appreciate very much your careful examination of the bill, and I appreciate the comments by all of the panel members. Thank you very much.

Mr. ROE. Thank you very much. We appreciate your being with us today and you have added to our thought processes.

Our next panel will be Ms. Merilyn B. Reeves, second vice president, League of Women Voters of the United States, and Mr. Eben Chesebrough, president, North American Lake Management Society.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY OF MERILYN B. REEVES, NATURAL RESOURCES COORDINATOR LEAGUE OF WOMEN VOTERS OF THE UNITED STATES

I am Merilyn B. Reeves, second vice-president and natural resources coordinator of the League of Women Voters of the United States. I am here today representing more than 200,000 league members and supporters in 1,300 communities in every State in the union, the District of Columbia, the Virgin Islands and Puerto Rico. Our members have a long history of active involvement in environmental work at the local, State and national levels. We worked hard for passage of the Federal Water Pollution Control Act Amendments in 1972 and the Clean Water Act in 1977, and leagues have been striving for full implementation of these laws since their passage.

The Clean Water Act has been a tremendous success and stands as a monument to Congressional leadership in the environmental field. We urge you to continue that leadership by maintaining the integrity of the Act. Chairman Howard's bill, H.R. 3282, is an outstanding bill that should be enacted by Congress with the one major addition of nonpoint source controls.

Numerous challenges to the law's basic integrity—from attacks on technology-based standards and the pretreatment program to attempts to weaken wetlands protection—will be faced by this committee. In considering proposed changes, we would like to remind the committee that the vast majority of the American public—94 percent—believe the Clean Water Act should be kept as it is or made even stricter, according to a December, 1982 Louis Harris survey.

The League's views on many of the Clean Water Act issues are set out later in my statement. I would like to concentrate now, though, on those measures that need to be taken to improve the Clean Water Act.

After installation of Best Available Technology (BAT) controls, implementation of pretreatment standards, and the construction and operation of a large number of municipal sewage treatment systems, the goals of the Clean Water Act will not have been achieved. This should come as no suprise. When the Act was passed in 1972, Congress knew that pollution from diffuse, nonpoint sources would have to be

controlled. And Congress knew that controls beyond the basic technology standards would be needed to control toxic pollutants. Now, Congress must develop enforceable programs to control surface runoff and to gain additional controls on toxic discharges. In this round of the Clean Water Act reauthorization, the law must not only be protected; it must be strengthened.

Our message to you today is very simple: pollution from nonpoint sources has reached critical stages in watersheds nationwide and Congress must enact an enforceable program to control it.

WHAT IS NEEDED

League leaders from across the country report that nonpoint pollution control efforts are at a standstill. Although state and local governments have identified the seriousness of uncontrolled runoff and have identified best management practices to control nonpoint source pollution, they lack the stimulus of federal leadership that a Congressional mandate would provide.

Through past initiatives mandated by Congress, such as the Section 208 planning program, the National Urban Runoff Program (NURP), and the Chesapeake Bay and Great Lakes regional research and demonstration projects, states have developed a data base and identified workable, practicable control measures.

Now, Congress must state that implementation of nonpoint pollution control measures is essential, not only for protection of water quality, but also for prevention of soil erosion and cleanup of dirty city streets. At this time, there should be no doubt that control of nonpoint pollution is a cost effective investment in the future.

Rep. Oberstar's bill, H.R. 4037, is a commendable first step toward addressing the problem, and my testimony today will focus on how the bill should be improved. But first, let me briefly review the status of the problem.

Nonpoint source problems differ widely from region to region. Farming practices that result in soil erosion vary depending on topography and climate. Construction practices and urban runoff patterns are regionally variable as well. Clearly states and local units of government are in the best position to assess their problems and develop best management practices (BMPs) for their control. However, experience over the last 10 years has shown that state or local governments cannot do it alone and that nonpoint source pollution problems are too severe to continue uncontrolled. It is time for the federal government to step in: to build on the federal investment made and experience gained in the 208 program; to mandate that all state and local governments address their most serious pollution problems and ahve access to the tools and resources they need for success; to ensure that cleanup efforts by one state or locality are not thwarted by poor conservation practices upstream; to promote better coordination among the numerous federal agencies; and to set firm deadlines and establish sanctions for failure to act.

We know what needs to be done. We need effective, enforceable programs and adequate funding. We need carrots and we need sticks. We need to move from planning to implementation.

NONPOINT SOURCE POLLUTION

To appreciate the scope of the federal program needed, a brief review of the facts is in order. The General Accounting Office has estimated more than half of the pollutants entering the nation's waters come from agricultural, silvicultural urban, mining and construction runoff; from saltwater intrusion and subsurface excavations (such as septic tanks); and from activities that cause modification of water flow (dam building, diversion projects, etc.)—in short from nonpoint sources. Some of the pollutants, such as those contained in urban and agricultural runoff may be contaminated with toxic substances and pesticides that can cause severe damage to ecosystems even in small quantities.

The seriousness of the problems caused by nonpoint source pollution is becoming more and more apparent as the nation progresses in the control of pollution from point sources such as industrial and municipal outfalls. In "Environmental Outlook 1980," EPA's Office of Research and Development estimated that the sediment load entering water bodies from nonpoint sources was 360 times higher than that from treated point sources; BOD—5 times higher than treated point sources, nitrogen—4 times higher, and fecal coliform—50 times higher.

Nonpoint pollution affects most areas of the country. A 1977 EPA Report to Congress stressed that of the 246 river basins, 68 percent from the effects of agricultural runoff; 52 percent from urban runoff; 30 percent from mining; and 15 percent from forestry runoff. In a report released in July 1982, GAO listed nonpoint source pollution along with acid rain, groundwater contamination and ocean dumping as major

unresolved issues that must be addressed if key environmental goals are to be met, if progress in environmental cleanup is to be maintained, and if the benefits from the nation's investment in environmental cleanup are to be maximized. A 1983 EPA study concluded that in six of the ten EPA regions, nonpoint pollution is the principal cause of water quality standards violations, and "a national, coordinated commitment" is needed to stem the pollution. I would like to note parenthetically that nonpoint source contribution to water pollution does not argue for relaxing point source control. Instead it indicates that strict controls are needed on all sources.

In 1972, with passage of the Federal Pollution Control Act Amendments, Congress acknowledged the growing nonpoint pollution problems and directed under Section 208 that states draw up plans identifying these sources of pollution and specifying available control measures. Important work was done under 208 in developing data on nonpoint problems and identifying best management practices to curb nonpoint source problems. But most of these efforts came to a sudden halt at the end of the planning stage since there was no federal mandate for implementation. Since the demise of 208, some states and localities have initiated programs to control the most serious nonpoint problems, but it has been a struggle because of the absence of both federal leadership and federal funding. We urge this committee to re-establish federal leadership in this area to shore up existing state and local efforts and to require states to tackle their most damaging nonpoint problems.

I would like to briefly address the two areas considered to be the greatest contributors to nonpoint source pollution: urban runoff and agricultural runoff.

URBAN RUNOFF

The runoff from our city streets contains many harmful pollutants. EPA's National Urban Runoff Program (NURP) sampled pollutants in test urban centers and found lead, zinc, copper, cadmium, asbestos, selenium, nickel, chromium, arsenic, oil and paint. Examples of the problem abound:

Large percentages of the heavy metals occuring in New York Harbor—such as 69 percent of all zinc—come from runoff from New York City streets. (The Comptroller General's Report to Congress, "Cleaning up the Environment: Progress Achieved but Major Issues Remain," July 1982.)

In Dallas, rainwater runoff, particularly in spring and fall, contributes three times a much Biological Oxygen Demand (BOD) as effluent from sewage treatment plants (Comptroller General's Report).

Nationally, urban runoff contributes more suspended solids to our waterways than all the combined sewer overflow plus effluent from secondary and tertiary sewage treatment plants (Director of Arkansas Department of Pollution Control and Ecology).

About one-half of the 127 priority pollutants listed by EPA are found in sampling of urban runoff at one time or another (EPA data, March 30, 1983).

Conventional pollutants found in the urban runoff in every part of the nation include suspended solids, nutrients, coliform bacteria and oxygen demanding materials (EPA data, March 30, 1983).

EPA data show that urban runoff from 22 test sites contributes an annual median loading of 380 kilos per hectare of chemical oxygen-demanding material plus 62 kilos per hectare of biological oxygen-demanding material and 630 kilos per hectare of suspended solids (EPA data, March 30, 1983).

City debris and contaminated dirt wash into streams, but there is another kind of pollution that is a major component of urban runoff: sediment from construction. Each time another highway is constructed or a shopping center is built, more sediment is washed into our waterways. According to "The Nation's Water Resources 1975–2000" by the U.S. Water Resources Council, small construction sites in eastern urban areas increase the soil washed into waterways 5,000 times. Studies in Maryland and Virginia show that urban construction projects add 40–50 tons of sediment per acre to runoff. White Flint Shopping Center in Rockville, Maryland was constructed with proper safeguards to prevent sedimemtation of Rock Creek. This sediment control system trapped 2,600 tons of soil from only one shopping mall!

These sources of urban pollution can be controlled. Street cleaning with vacuum sweepers or other means of picking up debris rather than washing it into sewers will keep many pollutants out of waterways. More frequent and improved trash pick-up service is another comparatively low cost practice. Sediment control ordinances for construction sites that require preservation of natural drainage patterns, and prompt revegetation of disturbed landscapes, and construction of storage basins will keep tons of silt out of streambeds. Practices as simple as moving hay bales around construction sites can reduce runoff significantly.

AGRICULTURAL RUNOFF

Estimates by EPA indicate that the largest nonpoint pollution problem by volume is sediment entering streams, rivers, and lakes: one-half of that sediment comes from soil erosion from cropland. This sediment carries other pollutants such as pesticides, herbicides, excess nutrients, toxic metals, viruses and pathogens. It smothers feeding and spawning areas and it raises stream beds, causing flood waters to reach higher levels.

Soil erosion and its attendant water quality problems are most acute on marginal cropland where erosion rates are highest and where larger quantities of fertilizers and pesticides may be required to make the land productive. Estimates vary, but according to the Department of Agriculture (USDA), 54% of all soil erosion takes place on 10% of the cropland. Most of this cropland is of marginal quality.

Nutrient runoff is a large problem because nitrogen and phosphorus applied to the land ends up in water bodies disrupting their natural ecology. Pesticide runoff can poison receiving waters even in small quantities.

In addition, return flows from irrigation cause special problems with increased salinity or dissolved solids. In western states, where irrigation is extensive, 90 to 100 million tons of salt enter surface waters each year according to the Department of Agriculture. At high levels, salinity can impair future uses of water for irrigation or for drinking water.

There are many methods available to control agricultural runoff. Conservation tillage, terracing, crop rotation, integrated pest management, sediment dams, and less wasteful irrigation systems all are readily available cost-effective means. In some instances, implementation of BMPs will actually result in cost savings to farmers. For example, USDA estimates that more than 15 percent of the fertilizers applied to croplands are washed away wasting millions of dollars each year.

Although the Department of Agriculture does have numerous cost-sharing programs to promote conservation, funding for these programs is low considering the magnitude of the problem. And the resoruces for these programs have been allocated equally throughout the country rather than targeted to those lands with the worst problems—primarily the marginal lands mentioned earlier. We applaud recent efforts of the Soil Conservation Service to rectify these problems. However, even if the benefits of existing programs are maximized, they still will not go far enough.

We realize that farmers today face difficult economic conditions. We are not proposing measures that would add unduly to their burdens. But we do think that new steps should be taken to ensure the future productivity of farmland and prevent further degredation of water quality—two goals that in the long run will perhaps benefit farmers as much as or more than any other segment of the population. One such step is cross-compliance, or making good soil conservation practices a prerequisite for receiving federal subsidies. The federal government should stop giving mixed signals to farmers, encouraging conservation on the one hand and rewarding poor erosion control practices on the other through loans and price supports.

CONTROL OF NONPOINT SOURCE POLLUTION

We believe that Congress must amend the Clean Water Act to create a program to implement controls on nonpoint source pollution. Rep. Oberstar's bill, H.R. 4037, is a good beginning towards stemming the tide of pollutants from surface runoff, but it needs to be strengthened with firm deadlines backed up by sanctions to make the program enforceable. There are four elements of the Oberstar bill that with some adjustments will constitute a workable, cost-effective program:

The bill focuses the nonpoint control program on those water bodies with severe water pollution problems. It applies only to water bodies which fail to meet water quality standards or the goals of the Clean Water Act due to nonpoint source pollution—other areas would not be affected by the program.

The bill requires that management practices be set by the states, with the cooperation of local agencies and organizations. The information developed under Section 208 would assist, but not constrain, the setting of management practices. The practices would originate at the local level rather than being impsoed from Washington, D.C.

The bill provides monetary incentives to states without making the duty to control pollution dependent on the availability of funds. The League supports the provision for providing fifty-fifty cost sharing grants for state costs over and above what the state spent on nonpoint pollution controls in the two years prior to the enactment of the law. The bill should be amended to make clear that the bulk of the money authorized will be targeted for program implementation rather than plan-

ning. The federal government has already committed millions of dollars to planning for planning's sake with the 208 program. The Oberstar amendment should put a cap on such future spending.

In addition, the League believes that the Oberstar bill should be amended to make clear that the major purpose of the federal grants is to finance the administration of state control programs. The amount of funding provided is very limited, and should not be spent to subsidize the actual installation or operation of BMPs. Also, since the amount of funding authorized—up to $150 million—is so minimal, we oppose special set-asides as provided in the Senate bill.

The bill includes a mechanism for the resolution of interstate water quality problems. The bill allows states to petition EPA to convene a management conference of all states which contribute nonpoint pollution to a water body. This section should be strengthened by requiring EPA to assume the responsibility for interstate coordination in the development of enforceable plans for nonpoint pollution control. Experience with past water quality management conferences has proven that the approach needs to be backed up by an enforcement mechanism such as sanctions.

The Oberstar bill needs to be strengthened in several key respects, however, to duplicate the effective strategies employed by the Clear Air Act and other environmental laws.

First, the bill should require that states implement management practices within four years after enactment. Firm deadlines are necessary to force action and four years would provide adequate time for management practices to be put in place. A date certain for compliance is essential if the nation is not to repeat the experience of waiting decades to achieve clean water. The date certain must be within the reauthorization period of the Clean Water Act if the Congress is to meaningfully review progress under the program when the Clean Water Act is next reauthorized.

Secondly, the bill should require federal activities to conform to state BMPs. The bill does require state plans to identify federal programs and financial support for activities that are inconsistent with state nonpoint control plans. But simple identification does not go far enough. The language of this section must be strengthened to make clear that federally funded projects must be fully consistent with state plans and requirements for BMPs. It makes no sense for the federal government to encourage or fund activities which will directly interfere with federal water quality goals and state programs to achieve those goals.

Thirdly, the bill should require EPA to implement a nonpoint control program if the state fails to submit one. This key element is necessary to ensure that national goals are achieved. Without back-up federal implementation, there is no assurance that state programs will be developed. This mechanism is incorporated in virtually every other federal environmental program and has proven to be an effective incentive to prompt action.

Fourthly, to make the program mandatory rather than voluntary, the bill must provide sanctions to deter the possibility of state inaction. The League recommends such measures as withholding construction grants and other federal monies from states that fail to implement controls on nonpoint sources. Water pollution control will not be effective if carried out in a piecemeal fashion. Control of point sources such as sewage treatment plants must be fully coordinated with the state's plan for addressing nonpoint sources. Construction grants and other federal awards should be contingent on the implementation of control strategies for both categories of pollution sources—point and nonpoint—that are impeding progress toward meeting the Clean Water Act's goals.

With these four improvements—deadlines, federal consistency, back-up implementation, and sanctions—the Oberstar bill will make a fine complement to H.R. 3282, the Water Quality Renewal Act introduced by Rep. Howard. The Howard bill makes many of the other changes we are seeking in the Clean Water Act. I would like to briefly outline for the record the League's views on those changes.

H.R. 3282 maintains EPA's existing pretreatment program, which is necessary to protect water quality, prevent costly damage to municipal sewage treatment works, and avoid contamination of municipal sludge. Congress should keep the pretreatment program in place and should reject proposals for variances that would weaken protection against discharges of toxic effluents or would put the costs of control on municipalities rather than on the generators of toxic wastes. Pollution should be controlled at its source, before it goes down the drain. The pretreatment program is not yet fully in place. Let's give it a chance to work.

The requirement for the use of best available technology (BAT) for industrial sources discharging directly into waters of the United States is also a key element of the Clean Water Act. H.R. 3282 preserves this fundamental program. Because of delays at EPA in promulgating BAT standards, H.R. 3282 extends deadlines to re-

quire control of toxic pollutants within three years, after EPA issues industry specific effluent guidelines. This is sufficient time to allow compliance. Because uniform, technology-based standards are at the heart of the Clean Water Act, we are opposed to industry proposals to allow variances from BAT standards.

The Section 404 dredge and fill permit program helps protect wetlands from destruction and H.R. 3282 maintains the integrity of this program. Numerous attempts over the years have been made to scale back protection of wetlands. Wetlands serve as groundwater recharge areas, flood buffer zones, fish wildife habitat, and natural water purification plants. The Section 404 program should not be cut back. Rather, it must be strengthened to make clear that its protective provisions apply to clearing and draining of wetlands and to give citizens the right to go to court to enforce the law.

H.R. 3282 amends the Clean Water Act to incorporate strong language governing water quality regulations. The League supports this provision to prevent any future attempts by EPA to weaken the regulations.

In addition to the nonpoint source controls discussed earlier, there are two other areas where Congress should take affirmative action. The Howard bill's provisions are paramount in our estimation.

Even after industries meet BAT standards, stream segments around a number of major industrialized sites will still suffer serious toxic water pollution problems. H.R. 3282 amends the Clean Water Act to set a time schedule for identifying these toxic hotspots and taking the necessary steps to further limit toxic effluents.

Estuaries are among our most productive natural resources, but many of them are severely stressed. Polluted shellfish beds have been closed and striped bass and other fish populations are in serious decline. The current law does not address these problems. State lack the resources, incentives, and management tools to solve the problems alone. H.R. 3282 authorizes EPA to convene interstate management conferences, to develop master plans to protect estuaries and authorizes funds to implement them, a provision strongly supported by the League of Women Voters.

The Clean Water Act is a federal legislative success story. With a few improvements, such as better control of toxics and implementation of best management practices for nonpoint sources, Congress can ensure that we continue to make progress toward our national goals of attaining fishable/swimmable waters throughout the country.

Statement of Eben Chesebrough, President, North American Lake Management Society

Mr. Chairman and Members of the Subcommittee: My name is Eben Chesebrough and I am president of the North American Lake Management Society (NALMS), a national organization made up of citizens, scientists, lake associations, and water pollution control professionals who are concerned about poor water quality in our Nation's lakes. We are here today to comment on reauthorization of the Clean Water Act and to apprise you of how serious the nonpoint source problem really is across this country. States and EPA know where these problems are. Scientific studies are demonstrating that best management practices can be effective in reducing nonpoint pollution. What is needed is simply the authority and the mandate to implement what we know now. Human lives are being lost, lakes are being destroyed, public drinking water supplies are being threatened, and massive social costs are being borne by the public. Futher generations of Americans will be forced to pay cleanup costs if this issue is not properly addressed.

NATIONAL SCOPE OF LAKE POLLUTION

This Subcommittee is aware that the lakes and impoundments of this Nation are vital not only for their ecological functions in supporting fish and wildlife but also for the economic basis—measured in the billions of dollars—to many local, state, and national businesses. Unfortunately, our Nation is losing the battle to keep its lakes clean and the damage may be irreversible in many cases because of the high cost of cleanup. In 1971, the University of Wisconsin used a questionnaire to survey the extent of lake quality problems in the United States. Based on 40 responding States, 394 problem lakes were identified. More than 300 were reported to have excessive algal growth or nuisance weeds and 7 were noted to have toxics contamination.

In early June 1983, NALMS sent a questionnaire about lake quality problems to each State water pollution control administrator. Thirty-eight States responded with a grim assessment of what has happened to the quality of our lakes and impound-

ments. More than 10 times more problem lakes were found in 1983 than in 1971 and 40 times more lakes—12,000—were reported by the States to be suffering from nuisance growths of weeds and algae. More than 4,200 lakes were identified with impaired use that adversely affects more than 4 million acres of lakes and impoundments. The NALMS survey found that we are also losing the battle against toxic substances. From 7 contaminated lakes 10 years ago, the 38 responding States now have 120 lakes contaminated with toxics. More than 9,000 lakes were reported to be experiencing excessive nutrient loading. Wisconsin, Massachusetts, Minnesota, Florida, Louisiana, and California lead the way with many impaired lakes. The damage that is occuring is staggering and action needs to be taken not before more lakes are lost.

H.R. 3282—THE CLEAN WATER ACT

The Society would like to voice its support for H.R. 3282 introduced by Mr. Howard. Lakes are more susceptible to pollution than flowing waters because of their ability to trap pollutants. Congress recognized this in 1972 and established the section 314 Clean Lakes Program to clean up polluted lakes. While we applaud H.R. 3282 for including a $30 million authorization for section 314, we would like to advise the Congress that this program has almost been zeroed out of appropriations the last three years. As a result, the Nation is not only not restoring its dirty lakes, but we are rapidly losing our cleaner ones. The authorization you provide, if full appropriations are received, should be adequate to support an orderly process for encouraging States to develop their own expertise and authority in lake restoration. Our recent survey indicates they want to do this.

NALMS also stresses the importance of proposed section 10 of H.R. 3282 for protecting our Nation's few remaining wetlands. These wetlands are essential for the production of fish and wildlife, and research has also shown that they are valuable in trapping and assimilating water pollutants so that adjacent and downstream lakes as well as estuaries are protected. These wetlands are useful as treatment systems for point and nonpoint discharges of pollutants.

Section 9 proposes the establishment of an estuary protection program, including the development of water quality standards applicable to estuaries. This is a significant concept that applies to both estuaries and lakes. Estuaries and lakes are different from running waters, and standards developed for running waters are often not applicable. Unfortunately, many States have not adopted numerical criteria applicable to lakes and estuaries. This gap in our Nation's water quality management programs is likely the largest impediment to restoring and protecting water quality in lakes and estuaries.

NALMS members urge this Subcommittee to act in remedying this deficiency by amending section 303(c)(2) of the Act to emphasize Congressional concern for the adoption of appropriate water quality standards to protect different types of waters. NALMS respectfully requests that the following sentence be added to the end of section 303(c)(2): "Such standards shall reflect the inherent differences among running waters, lakes, impoundments, and estuaries and shall contain appropriate numerical criteria to protect the designated uses os such waters." In the absence of such a Congressional mandate, States will likely not adopt specific numerical criteria to protect these sensitive lakes and estuaries.

Such specific numerical criteria can be successfully adopted as standards and have been used by a limited number of States. The State of North Carolina has a water quality standard of 40 ug/1 of chlorophyll *a* to delineate waters which may be experiencing accelerated eutrophication and a nutrient sensitive waters classification that gives the water quality regulatory agency authority to require abatement of point and nonpoint sources of nutrients. North Carolina has used this to initiate clean up or protection of one estuary and two lakes in three different river basins. A description of the process is included in a paper presented at a recent conference sponsored by NALMS and the U.S. Environmental Portection Agency (EPA) and transmitted to Congress by EPA under section 304(j) of the Clean Water Act. The paper is included as Attachment I to this testimony. A congressional mandate, however, is needed to gain State adoption of specific water quality standards that are designed to protect lakes and estuaries.

Also, we recommend that the Congress ask for a report from EPA on the status of lake quality in the United States. The report should be sufficient to allow Congress and the American public to understand the magnitude of the pollution loading to our freshwater lakes, how this loading has changed over the past 10 years, and the consequences of such pollution both economically and ecologically to our fragile lake resources.

The Congress should ask for this report within one year of reauthorization and should provide a separate authorization for it under 304(j) of the Act. We recommend that the authorization for this report be $1 million.

H.R. 4037—NONPOINT SOURCE POLLUTION

A national program to control nonpoint sources is desperately needed to mitigate economic damage caused by the pollution, to restore designated uses, to protect water quality for future generations, and to preserve valuable land and water resources. Because of nonpoint source pollution, human lives are being lost, lakes are being destroyed, public drinking water supplies are being threatened, and massive social costs are being borne by the public. This Subcommittee has heard that an estimated $3 billion of economic damage is being caused by sediment each year. Of the over 6 billion tons of eroded soil reaching our waterways, about three-quarters comes from agriculture land. In a latter part of this testimony, we provide some specific examples of damage to lakes that has occurred because no national, enforceable program exists to control diffuse pollutants. The damage is staggering and more lakes will be lost if a strong national program is not established.

NALMS supported the original Durenburger-Chaffee concept, but we are reluctant to support the revised, substantially weakened bill, S. 2006. We support H.R. 4037 and do so with recommendations for several revisions to strengthen Mr. Oberstar's proposal. However, our support is given with the realization that the mechanisms proposed in H.R. 4037 may not be sufficient to restore water quality so that standards and designated uses may be attained.

This Subcommittee is aware that 10 years ago a change in Federal policy encouraged farmers to plant "fencerow to fencerow" to feed the world's hungry. Cropland devoted to producing crops for export has increased about 300 percent to about 150 million acres over the last several decades. About one-third of our farmland is planted in crops for export. This Federal policy, the Federal commodity set-aside program, and other programs provides disincentives for nonpoint control. In fact, they provide Federal subsidies for and consequently reward farmers who plow marginal land and cause nonpoint source problems. H.R. 4037 will provide help to some waters, but Congress will not make an appreciable dent in this Nation's serious nonpoint problem until the Federal government provides leadership. It could do so by ensuring that its programs do not cause—and certainly do not promote—nonpoint source pollution and by utilizing the potential loss of Federal grants as an inducement for States to achieve and maintain water quality objectives.

While nonpoint sources are causing critical water quality problems across the Nation, research and demonstration projects have shown that cost effective abatement strategies do exist and are workable. A subsequent portion of this testimony highlights some recent success stories. This Subcommittee is trying to work toward a legislative solution that has a chance of passage and NALMS commends you for that. Pollution loads to some lakes will decrease with passage of H.R. 4037 and we support it with the following revisions for strengthening and focusing its approach. Without these revisions, we fear that the approach is too open-ended and that public funds may not be spent in the most cost-effective manner.

In several subsections, H.R. 4037 states as its purpose reduction of the level of pollution from nonpoint sources. Reduction of some pollution without attaining standards or restoring designated uses will prove to be a waste of the taxpayer's money. NALMS recommends that the criteria set out in 319(a)(1)(A), i.e., attaining standards and achieving designated uses, be considered as the water quality objective of the bill, not just some reduction of pollution. This water quality objective should be inserted in sections 319(a)(1)(D), (b)(1)(A), (b)(2)(B), (b)(2)(D), and (h). Specific wording is included in Attachment II.

Mr. Oberstar's bill suggests in section 319(b) that each State should submit one plan for all the nonpoint work that it proposes to undertake. Such a plan, not focused or tailor made to each river basin or watershed needing abatement, may spread resources too thin to achieve water quality objectives. NALMS recommends that a priority area implementation plan, with specific milestones toward achievement of water quality goals, be prepared for each watershed or river basin that has a priority nonpoint source problem and that these implementation plans then become part of the State plan under 319(b). Resources should be targeted or focused on the sources of concern in the watersheds, not statewide and not on all nonpoint sources. This approach is essential for achieving cost-effective use of public funds and for restoring suitable water quality to support designated uses. NALMS recommends a new section 319(b)(1)(C) be included with wording similar to the following: "(C) a separate priority area implementation plan shall be submitted for the water-

shed of each priority portion of navigable waters proposed for nonpoint source control implementation as part of the State plan."

No time limit for achieving BMP implementation is currently included in H.R. 4037. Without a specific deadline being included, States may not participate effectively in the program. NALMS suggests that six years is an adequate timeframe for BMP implementation in a river basin or watershed. We recommend the phrase "as expeditiously as possible but no longer than six years" be used in section 319(b)(2)(C).

The Federal oversight role in H.R. 4037 does not appear to be consistent with other major environmental legislation, including other sections of the Clean Water act. In other legislation, if States do not choose to accept delegation of an environmental program, or if they fail to properly implement it, a Federal program is established for those States. NALMS sees no reason why a national nonpoint source abatement program should be different. NALMS respectfully requests that section 319(f) be revised to authorize the Administrator to prepare and implement the plan under subsection (b) for any State that fails to submit an approved plan or fails to implement it.

NALMS is also concerned that the proposed provision regarding interstate nonpoint source pollution may be insufficient to achieve attainment and maintenance of water quality standards and designated uses. This interstate pollution causes priority problems across the country, from the Snake and Colorado Rivers to Palisades Reservoir (Idaho and Wyoming), Greenwood Lake (New York and New Jersey), Big Stone Lake (South Dakota and Minnesota), Reelfoot Lake (Kentucky and Tennessee), and the Chowan River (Virginia and North Carolina). The reauthorization bill introduced by Mr. Howard contains the concept of a master plan for specifying control measures to be implemented to restore and protect estuarine waters draining several States. This excellent idea of a master plan, which is made up of component State plans with specific compliance schedules for implementation, should be followed in all interstate waters. NALMS suggests that Mr. Oberstar's bill be revised to include this concept of a master plan (made up of State plans) as part of resolving interstate nonpoint source problems in section 319(h). Specific language in recommended in Attachment II.

The Society is fearful that the public will not have sufficient opportunity to understand, analyze, and comment on the adequacy of State designated priority waters under 319(a)(1)(A), State management plans, or EPA approval of these plans. Mr. Oberstar's bill only requires a description of public participation rather than a requirement for up-front public involvement. In order to avoid essentially after the fact public hearings on State proposals, NALMS urges the Subcommittee to be more specific in 319(a)(1)(D) about the need for public participation throughout the process.

The longer Congress waits to deal with the tough issue of nonpoint sources, the greater will be the cost of restoring polluted lakes because more will become damaged. Once pollutant loads are reduced, dirty lakes will still need to be cleaned up and this will require more funding if these valuable resources are to remain usable for future generations of Americans. The Society wishes to reiterate that without strong Federal leadership, specific milestone dates to measure progress, and a targeted approach to areas with the worst water quality problems, nonpoint sources will continue to cause widespread damage across the country and additional lake resources may become essentially irretrievably lost.

ECONOMIC IMPACT OF NONPOINT SOURCES

Lake Apopka in Florida and Ocean Lake in Wyoming were national treasures in the 1950s. People were attracted from across the Nation for water-based recreation, and the fisheries were of national significance. In the last two decades, massive loads of nutrients from agricultural activities have turned both lakes into pea soup blooms of algae. The famed fisheries have collapsed under the eutrophic conditions, recreation is impaired, and tourism has been seriously affected. The economic losses in tourism have not been estimated, but the price for restoring Lake Apopka is nearly $25 million.

A potentially more serious economic problem is being faced in south Florida because of serious eutrophication problems in Lake Okeechobee. The lake serves as a primary water source for south Florida. Very large loads of nutrients from agricultural activites reach the lake and cause the water quality problems. Measures to reduce the nutrient loading 34–40 percent are projected to cost more than $160 million, with $100 million of that to restore wetland areas in the channelized Kissimmee River enabling it to absorb nutrients from upland agricultural activities.

These channelization projects not only destroy aquatic life but they eliminate wetlands that are valuable in filtering pollutants from runoff water. Channel projects are often used to remove sediment deposits that cause flooding and the costs of such projects should be considered as damage caused by soil erosion. The North Carolina 208 plan indicated that millions of dollars had to be expended in channelization projects in that state to remove eroded sediment that was swamping previously productive cropland. A similar situation exists in west Tennessee. In the Obion-Forked Deer River basin, the U.S. Corps of Engineers reported that upland erosion deposited in channels has caused extensive economic damage by killing 54,000 acres of timber and turning 5,000 acres of productive cropland into swamp. Cropland erosion rates in this area of Tennessee are among the highest in the Nation (averaging 40 tons/acre/year). With tens of millions of dollars of public funds already expended for channel projects, with tens of millions of dollars of economic loss suffered by the private sector each year, and with additional proposals for channelization work on the order of $75 million in this one river basin, the extent of economic damage caused by soil erosion is clear.

The deposition of eroded soil in west Tennessee has destroyed aquatic populations to the point that the rivers do not meet the goals of the Clean Water Act. In addition, levels of pesticides such as methoxychlor, toxaphene, and parathion exceed EPA criteria in the rivers, and fish in Reelfoot Lake are contaminated with several pesticides. Tragedies have also occurred. Eight bridges over channelized streams in west Tennessee have collapsed in the last five years killing six people. A recent analysis made by the U.S. Geological Survey attributes bridge collapses in the area to the channelization projects.

Other economic costs are borne by the public. Flood damage and dredging costs are extremely high. Almost three million dollars are expended each year to keep waters open for navigation. Federal water projects such as Fishtrap and Dewey Reservoirs in Kentucky are filling with sediment. In the West, sediment is deposited in Federal water projects and displaces water that could be stored for irrigation. The state of Wyoming has identified Boysen Lake as such an example suffering from accelerated sedimentation. Some lakes such as Herman in South Dakota, Temescal in California, McQueeny in Texas, and Mirror in Montana have established limited Federal assistance to slow down the sedimentation problems. Other lakes are less lucky and are being filled in or have already been filled; among these are Davy Crockett and Reelfoot in Tennessee, Oakwood and Kampeska in South Dakota, Cameahwait and Boysen in Wyoming, Charleston and Taylorville in Illinois, and Wallenpaupack in Pennsylvania. Must the public lose the benefits and enjoyment of these lakes before action is taken? Must their public water supplies be filled with sediment and new expensive reservoirs built? Raleigh, Durham, and Chapel Hill, North Carolina face this. Lake Charleston in Illinois has filled. Eighty-six percent of Illinois's 84 public water supply reservoirs are filling at excessive rates and agricultural erosion is the major cause. $18 million would need to be spent annually to dredge these Illinois reservoirs to keep this current, albeit reduced storage capacity.

An additional type of economic damage results when expenditures are made for point source controls when principal contributors to the water quality problem were nonpoint sources. Examples include phosphorous controls imposed in the Great Lakes on point sources, the expensive advanced wastewater plant constructed in the Occoquan Basin of Virginia, and requirements for land disposal of municipal effluent in the eutrophic Chowan River basin of North Carolina. And damage is also caused to land resources because of nonpoint sources. The swamping of productive cropland has already been mentioned. Loss of soil productivity and concomitant loss of expensive fertilizers and pesticides threatens the Nation's ability to supply food to feed the hungry in other countries. Irrigation return flows in the West not only seriously affect water quality of major rivers but salt is accumulating on downstream land and may threaten soil productivity. Recent studies on the South Platte River in Wyoming, Colorado, and Nebraska confirm this soil salinity problem.

PUBLIC HEALTH CONCERNS

The public is very concerned about contamination of its recreational areas, its food resources, and its drinking water. Urban runoff and sewer leakages have caused public health concerns about bacterial contamination across the country, from Lake Houston in Texas, Sloan's Lake in Wyoming, and Temescal Lake in California to Fort Loudoun in Tennessee, bays of the Great Lakes, and Myrtle Beach. Concerns are also expressed about bacterial contamination of shellfish waters from animal waste as well as failing septic tank systems. More than 20 percent of North Carolina's shellfish waters are closed due to bacterial pollution. Other southeastern

states have higher percentages closed to shellfishing. The economic effect of the closuers has been reported to be in millions of dollars annually for single coastal counties with a majority of waters closed.

Fish are contaminated in urban areas as well as rural. Lake George in New York and Summit Lake in Ohio have fish contaminated with toxics from urban runoff; and fish have been eliminated from Como Lake in Michigan. In rural areas such as Reelfoot Lake in Tennessee and Old Town Lake in Arkansas, pesticides contaminate fish. The public is concerned not only from a fisheries standpoint but also from the standpoint of biological indicators of conditions that may be toxic to humans. The state of Tennessee 305(b) Report to Congress notes that water quality criteria for copper and zinc are violated in Parksville Lake downstream of thousands of acres of eroding land surrounding a copper smelter. Fish populations and algae are essentially nonexistent in the 2,000 acre lake because of the toxicity problem. Should not this biological indication of a serious problem be a warning to us about toxic substances?

The public is especially concerned about its drinking water supply. We understand that EPA is considering making the statement that a serious potential exists for adverse impacts from urban runoff on drinking water supplies located downstream of urban areas. This is based on the results of the EPA Nationwide Urban Runoff Program (NURP). A good example of the problem involves Rapid City, South Dakota. The NURP effort in that city documented that lead from urban runoff exceeded drinking water standards in the downstream water supply.

Concerns also exist for drinking supplies with eutrophication problems. This nutrient loading results in nuisance weed growth, pea soup algal blooms, fishkills, impaired recreation, and taste and odor problems in finished drinking water. Examples can be drawn from across the country of these troubled water supplies: Occoquan Reservoir in Virginia, Deer Creek Reservoir in Utah, Loch Raven in Maryland, Liberty in Oklahoma, Dillon in Colorado, and Myna in South Dakota. When this algae filled water is chlorinated for water supply, the organic matter may combine with chlorine to form chlorinaated hydrocarbons such as trihalomethanes, which are suspected to be weak carcinogens. Use of multimillion dollar treatment systems such as granulated activated carbon may be necessary in the future if such organic compounds pose actual threats to health. In extreme cases, water supplies must be abandoned because of the extra cost and poor quality finished water. Vandalia Lake and Ureka Lake in Illinois are examples. The City of Twin Forks on the Snake River was forced to abandon its water supply as Milner Reservoir became infested with pea soup algal blooms. Intensive agricultural activities were upstream. Such agricultural activities also affect water supplies in the East. A survey of 380 water supplies in the Southeast found that more than 10 percent suffer from poor water quality caused by upstream agricultural and livestock activities. In Illinois, 80 percent of the 84 public water supply reservoirs must use copper sulfate to combat the algae problems. The cost is staggering. Lake Marion must apply 3,000 pounds six times a year and water treatment costs are greatly increased.

MEETING CLEAN WATER ACT GOALS

The 1983 interim goal of the Act involves ensuring a water quality for the protection and propagation of aquatic life and recreation in and on the water. Unfortunately, this goal is not being met across the country in rivers, streams, lakes, and estuaries and not only imposes social costs on the public, but it also causes actual economic damage. A good illustration involves the results of an EPA analysis of the benefits that accrue when good quality water is restored to degraded lakes. The analysis showed that on the average $8 of benefits accrued from each Federal dollar expended. On only four lakes that were restored in Washington State, California, Virginia, and Maine, benefits from recreation, water supply, property values, and fish/wildlife that resulted from water quality improvements totaled $90 in discounted benefits for each Federal dollar invested. Clear economic damage results when state designated uses of waters are impaired.

Nonpoint source pollutants from agricultural activities and urban areas cause the majority of nonpoint problems in our Nation. It is said that the Missouri basin, with its high density of livestock operations, has an organic pollution wasteload equivalent to the population of China. Some of these operations are classified as point sources, many are classified as nonpoint sources. Excessive loadings of nutrients from animal waste and cropland have caused serious eutrophication previously mentioned in lakes (algal blooms, weeds, fishkills) that concern the public. The problems previously mentioned in Lake Apopka and Okeechobee in Florida and Ocean Lake in Wyoming are related to this excessive nutrient loading. Other serious problems

have been caused from Cobbossee Lake in Maine, Cannonsville Reservoir in New York, and Black Hawk Lake in Iowa. Such problems involving algal blooms and fishkills occur in Boysen Lake, Wyoming, and EPA estimates that 94 percent of the phosphorus loading in this lake comes from nonpoint sources, mostly agricultural in nature. And now, the State of Wyoming is concerned about pea soup blooms of algae on Flaming Gorge Reservoir, the most recreationally important lake in Wyoming with its nationally recognized fishery. The problem is getting worse according to the state and 90 percent of nutrient loading is attributed to nonpoint sources, again much of it agricultural in origin.

Similar eutrophication problems related to excessive nutrient loading from agriculture are also evident in North Carolina. While citizens are concerned about Phelps Lake and Lake Waccamaw in the coastal area, they are more concerned about damage in the estuarine areas. A good example involves the Chowan River basin. For the last decade, massive blooms of algae have been implicated in causing fishkills, reducing commercial and sports fisheries, impairing recreation, and decreasing property values. Scientific investigations by the State of North Carolina have shown that nonpoint sources, mostly agriculture, contribute more than 95 percent of nitrogen and phosphorus in the river. The problem is not limited to this basin but it occurs throughout the coastal waters. Entire populations of commercial fisheries have been eliminated in some coastal waters. I am attaching to this testimony a report on this serious nonpoint source problem in North Carolina that recently appeared n a peer-reviewed scientific journal. As the algae die, oxygen is used up in the waters. This deoxygenation resulted in eight fishkills of greater than 25,000 fish or crabs in North Carolina estuaries during the summer of 1978 and 1979.

Part of coastal North Carolina's problem can be attributed to the development of corporate "superfarms," farms of greater than 100,000 acres in areas that were once wetlands but were drained for agriculture. The drainage canals deliver storm water to fish and shellfish nursery areas and shrimp and oysters are especially affected. Rose Bay oysters were famous on the East coast years ago, but they no longer can flourish because of the agricultural canals and poor water quality. Serious economic impacts may soon be felt by the coastal fishing industry if best management practices are not ultilized.

In contrast to the lack of salinity caused by stormwater drainage in coastal North Carolina is the increase in salinity caused by irrigation practices in the West. The Arkansas River in Colorado increases in salinity from a trace to 2,000 parts per million in 120 miles and the Pecos River in New Mexico increases salinity threefold to 2,000 parts per million in only 30 miles. This salinity damages fisheries and impairs use of the water. An example of damage comes from the State of Wyoming. Fishkills and physiological problems in the fish occur in Soda Lake because best management practices are not utilized.

DO BEST MANAGEMENT PRACTICES WORK?

It is clear that economic damage of national importance is being caused by nonpoint sources. The public is concerned about health implications of water quality problems caused by these diffuse sources, and goals of the Clean Water Act are not being attained across the Nation because of this pollution. Similar to the debate over acid precipitation, opponents of BMP implementation say that not enough information is known about cause and effect, cost effectiveness, or social acceptability of BMPs. I would answer these concerns by saying that the nonpoint problems are known and are causing unacceptable economic damage, scientists have shown BMPs to be effective in reducing nonpoint source loads, and it is time to simply implement what we know before our valuable lakes and estuaries are irretrievably lost.

The EPA Clean Lakes Program was a leader in years past in funding implementation of urban and agricultural best management practices to protect lake quality. Enough experience has been gained from that program to know that BMPs are effective in protecting water quality. Diversion of the first flush of urban stormwater to recharge basins was effective at Lake Eola, Florida. Wetlands can even be created to filter urban runoff in certain areas. This was done at Lake Jackson, Florida. Retention basins and wetlands were utilized effectively to remove urban stormwater pollutants at Clear Lake and Phalen Lake in Minnesota. Diversion of stormwater at Mirror Lake in Wisconsin reduced phosphorus concentrations 65 percent and algal blooms did not recur. Settling ponds were effective at Hylan Lake, Minnesota, and Temescal Lake, California. The EPA Nationwide Urban Runoff Program is finding detention basins to be quite effective in improving stormwater quality. Suspended solids reductions commonly exceed 70 percent, nutrient reductions exceed 50 per-

cent, and heavy metals reductions exceed 70 percent. BMPs have also been developed to abate combined sewer overflow problems. The BMP program for Syracuse, New York to protect Onandaga Lake is a good example of cost-effective sewer overflow abatement to protect lake quality.

Agricultural BMPs have also been implemented under EPA's Clean Lakes Program. Agricultural BMP implementation has been funded for agricultural pollution control in the watersheds of Spiritwood Lake (North Dakota), Chochrane Lake and Herman Lake (South Dakota), Cobbossee Lake (Maine), Skinner Lake (Wisconsin), Broadway Lake (South Carolina), and Rivanna Lake (Virginia). At White Clay Lake, BMPs resulted in about 60 percent reductions in annual phosphorus loading. Results are also available from USDA's Model Implementation Program (MIP). BMPs helped to reduce nutrient and sediment loads at Cannonsville Reservoir (New York), Lake Herman (South Dakota), and Pittsfield Lake (Illinois).

Other information on agricultural BMP effectiveness is available from the Black Creek study in Indiana and other research from the Great Lakes region. In North Carolina, soil conservation practices were implemented in a watershed and sediment transport was reduced 70 percent. Near Raleigh, North Carolina, best management practices in a small watershed were recently shown to reduce sediment loss 99 percent, nitrogen loss 92 percent, and phosphorus loss 90 percent. Use of buffer strips in Minnesota reduced solids and nutrients from animal feedlots by greater than 75 percent. Use of biological filters downstream of cropland in Florida reduced nutrient loads by greater than 70 percent. Effectiveness of conservation tillage, grassed waterways and other conservation practices has been known for decades. Likewise, water conservation techniques have been known for years to reduce salinity problems from irrigated agricultural land in the West. Simple retention ponds in irrigation lateral ditches were monitored for five years near Milner Reservoir in Idaho. About 75 percent of sediment and 30 percent of phosphorus was removed and better pond designs would likely provide more removal efficiency. In both the northern and southern Great Plains, limited tillage has been shown to reduce erosion and phosphorus delivery to rivers, and in Texas it has been shown to increase profits almost threefold on limited irrigation of crops while minimizing pollutant generation. Research and actual field experience have shown BMPs to be effective in abating combined sewer overflows, urban runoff, and agricultural pollution. Currently, the public is being forced to bear the billions of dollars of damage caused by this pollution. It is now simply a matter of deciding whether our Nation's waters should remain polluted by nonpoint sources or whether we should utilize existing knowledge to eliminate these water quality problems.

The North American Lake Management Society appreciates the opportunity to speak on behalf of our Nation's water resources before this Subcommittee. This concludes my testimony.

ATTACHMENT I

KEYS TO LAKE WATER QUALITY: LAKE QUALITY STANDARDS AND POINT/NONPOINT SOURCE ABATEMENT TRADEOFFS

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ABSTRACT

During the last year, many issues of uncertainty have been raised about water quality management strategies in the United States. These issues directly affect efforts to restore acceptable quality water to our Nation's lakes and to maintain lake-related public benefits for future generations. Based on an examination of the nature of these uncertainties, several activities are identified as key tools for restoring and protecting lake water quality. The development of scientifically defensible lake (or impoundment) water quality criteria/standards is one of these activities. An example of such an approach adopted by the State of North Carolina to resolve eutrophication problems is highlighted. The implementation of point/nonpoint source abatement tradeoffs is the other key activity needed for protecting lake quality. Such determinations of tradeoffs in controlling point and nonpoint source pollutants are essential for achieving cost-effective improvements in lake quality.

INTRODUCTION

This year has been marked by uncertainty in the field of water quality management in the United States. The Nation's fundamental approach to pollution control was challenged by proposed new approaches for establishing water quality standards. Proposals to withdraw effluent limitations and pretreatment regulations have been made by the U. S. Environmental Protection Agency (EPA). Amendments to the Clean Water Act were proposed, and drastic Federal funding cuts in Federal and State water quality programs made them difficult, if not impossible, to implement. In particular, proposed Federal and State budget cuts have seriously affected lake restoration and protection efforts.

This uncertainty comes at a time when lake restoration efforts should be accelerated, not stopped. The general public is entitled to a whole host of socioeconomic benefits from lakes—benefits that involve not only fishing, recreation, and aesthetic enjoyment, but also public water supplies, industrial and agricultural water supplies, flood control, wastewater assimilation, and economic development. But these public benefits are now in jeopardy.

The U. S. Council on Environmental Quality noted that more than 80 percent of urban lakes are degraded and in need of restoration and fully one third of all lakes and impoundments are adversely impacted by pollution (Counc. Environ. Qual., 1980). When lakes that are threatened by acidification are included in this assessment, the national extent of this pressing lake quality problem comes into focus. The economic impact of these problems may be staggering. For instance, in the Tennessee River Valley, eutrophication is aggravating a low dissolved oxygen problem in lakes and rivers of the Tennessee River system, posing a very real hindrance to economic development (Tenn. Valley Auth., 1980).

This paper examines the nature of some of the uncertainties that have recently been raised about water quality management in the United States. It appears these uncertainties are meant to challenge the course set by Congress and to delay water quality improvement even longer. Based on this examination, two activities are identified as key tools for restoring and protecting the socioeconomic benefits that the public is entitled to from our Nation's lakes. They are the development of lake (or impoundment) water quality criteria/standards and the implementation of point/nonpoint source pollution abatement tradeoffs. Legislation is not needed to authorize these two key activities; they can be accomplished under existing provisions of the Clean Water Act.

HISTORICAL PERSPECTIVE

To better appreciate the significance of questions currently being raised about water quality management strategies in the United States, one must understand past pollution control efforts. The approach chosen by Congress in 1972 to direct the Nation's water quality improvement effort resulted from 40 years of experience in trying to solve pollution problems. Until 1948, State and local governments were primarily responsible for pollution control. While numerous bills were introduced into Congress in the 1930s to authorize Federal pollution control planning and enforcement, the issues of States' rights and financial impacts were used to defeat the legislation.

In 1948 the first major Federal legislation was passed, but it proved unworkable because State consent was required before enforcement could be initiated. By 1965 Congress became discontented with the slow pace of pollution control and passed the Water Quality Act of 1965. This compromise statute used violations of water quality standards as the basis for enforcement, but States were hard pressed to demonstrate in court that a certain discharger was responsible for violations of standards. Very few States succeeded with the water quality standards approach, and Congress recognized that an effective nationwide approach would have to involve national minimum effluent criteria. This new approach was established in the 1972 amendments (P. L. 92-500) and was fine-tuned in the 1977 Clean Water Act.

Consequently, it is because of this very slow progress over the last half century that Congress mandated national minimum standards for point source treatment (technology-based effluent limitations and categorical pretreatment standards) and nonpoint source controls (best management practices (BMPs)). This strategy is designed so that economic advan-

tages are not created among different industries, different municipalities, or different regions of the Nation. And because Congress specified a phased approach to pollution control, many types of controls have not yet been implemented. Conventional pollutants have been addressed and some progress has been made. Toxics and nonconventional pollutants (such as nutrients) remain to be addressed in the coming years and are of utmost importance to lake quality management.

TECHNICAL UNCERTAINTY

With the Clean Water Act scheduled for reauthorization during 1982, special interest groups have raised numerous technical questions about the scientific adequacy of water quality management strategies in the United States. Among these uncertainties are questions about: unnecessary treatment associated with technology-based effluent standards; scientific inadequacy of water quality criteria and standards; the controllability of nonpoint source pollutants; and the lack of cause/effect predictive relationships between pollution control and water quality improvement. Each issue merits a short discussion.

Technology-based Standards

Some groups may point out that the effectiveness of categorical technology-based standards for controlling toxics and nonconventional pollutants is not well documented. They may feel that implementation of such controls will result in unnecessary expenditures and treatment for treatment's sake. Since the need for using such treatment has not been proven in every case across the country, the proposed solution is to remove the requirements and allow States to set effluent limitations based on site-specific water quality conditions and local needs.

Water Quality Standards

Other groups criticize Federal water quality criteria and the resulting State standards for their lack of scientific adequacy. Cox (1980) presented a spirited discussion of this view. The criteria are alleged to be too stringent, too uncertain, too costly to meet, and based on too primitive a science (aquatic toxicology). In addition, criticisms are leveled at the margin of safety associated with the use of worst case conditions and at laboratory development of criteria for use in ambient waters (Lee et al. 1982). The proposed solution to such uncertainty is once again a return to State flexibility to set standards that reflect local interests, goals, needs, conditions, etc., rather than using the best available data assembled on a nationwide basis. Other suggestions are being made to ignore criteria and standards for protecting water-related public benefits. In place of standards, state officials may be given authority to subjectively judge whether or not uses of public waters are "significantly impaired."

Nonpoint Source Pollution

In a recent study, the U. S. General Accounting Office (1982) identified nonpoint source pollution as a major contributor to the overall lack of significant water quality improvement in the country. The findings noted that the extent of the nonpoint pollution problem is unknown, data on its effects are inadequate, and funding is now sadly lacking (since the ill-fated section 208 planning has concluded).

Some groups logically ask why point source controls should be implemented when nonpoint source controls are voluntary in nature and, indeed, may overshadow point source inputs. However, when controls are suggested for nonpoint sources, others voice opposing arguments and once again raise uncertainty. A good example involves highly eutrophic coastal rivers in eastern North Carolina that drain extensive amounts of agricultural land. Agricultural groups continue to raise issues of uncertainty about agricultural nutrient inputs and question whether nutrient control measures could really improve downstream water quality (Gilliam et al. 1978; Humenik, 1980).It took a very costly, intensive monitoring investigation to produce scientifically defensible data that implicated agricultural runoff as a major contributor to the eutrophication problems in eastern North Carolina (Duda, 1982).

It is clear that sufficient monitoring strategies need to be employed to accurately assess the contribution of both point source and nonpoint source pollutants. Unfortunately, adequate water quality monitoring strategies are rarely used. In fact, the U. S. General Accounting Office (1981) recently criticized the fixed station/fixed sampling interval strategy used virtually around the country as grossly insufficient for determining true water quality conditions. If inadequate monitoring and analysis strategies continue to be used just because they are less costly, the result will be the familiar old refrain that more data are needed before widespread implementation of best management practices can be required.

Cause and Effect Relationships

Closely related to the problem of inadequate data is an imperfect knowledge of cause and effect relationships between pollution control measures and water quality improvement. While some professionals may believe that such relationships must be thoroughly documented before spending money for pollution controls, others may question the government's ability to shoulder this burden. Some may even question whether scientists can ever know the complex ecosystem impacts that occur from wastewater discharges.

A good example involves eutrophication in Cherokee Reservoir, an impoundment of the Holston River in east Tennessee. The Holston drains the most industrialized area of Tennessee, and Cherokee Reservoir—with its 9,000 km^2 drainage area—is located directly downstream of many wastewater discharges. Numerous water quality problems were noted in Cherokee Reservoir in a report by the Tennessee Valley Authority (Iwanski et al. 1980): interference with public water supplies from the reservoir (taste/odor and iron/manganese); nuisance growths of algae (up to 30 million cells per liter dominated by the blue-greens *Oscillatoria* and *Anacystis*); fishkills; diseased fish; and hypolimnetic oxygen depletion that resulted in dissolved oxygen below the 5 mg/l standard for more than 50 miles downstream from the reservoir.

Some professionals might point toward the water quality improvement that has occurred in the Holston River over the last decade (as controls for conventional pollutants were implemented) as proof that very little further improvement can be made. Figure 1 illustrates the reduction in biochemical oxygen demand (BOD_5), total nitrogen (TN), and total phosphorus (TP) over a number of years in the river as it flows into Cherokee Reservoir. Note that almost 70 percent reductions in BOD_5 and 50 percent reductions in TN and TP have occurred. Some improvement in hypolimnetic dissolved oxygen levels was noted for the days with dissolved oxygen less than one mg/l. Despite these improvements, the problems listed in the previous paragraph still occurred.

The Tennessee Valley Authority undertook an intensive investigation of the eutrophication problem in Cherokee Reservoir. Point and nonpoint source nutrient loadings were estimated (more than 50 percent of annual TP loading was attributed to point sources) and a state-of-the-

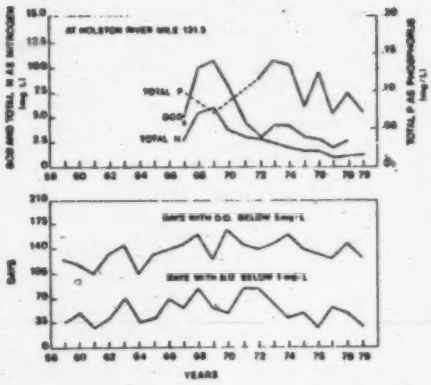

Figure 1.—Trends of water quality flowing into Cherokee Reservoir and dissolved oxygen depletion in the reservoir releases.

art simulation model was used to predict improvement following implementation of control measures (Iwanski et al. 1980). Yet, control measures were not implemented because the modeling exercise only raised more questions about cause and effect relationships: Is a two or three dimensional model needed to improve predictions? While history can be simulated using calibrated model coefficients and literature values for rate constraints, are predictions of improvement following waste load reductions valid? Do nutrient and organic matter inputs from extensive upstream macrophyte beds greatly influence trophic conditions? What influence do bottom-feeding fish or zooplankton have on nutrient dynamics? What is the significance of sediment oxygen demand, anaerobic processes, or internal nutrient cycling?

There will always be questions about cause and effect relationships because monitoring resources are limited, as is our ability to understand natural processes. Consequently, some professionals such as Beasley et al. (1982) conclude that state-of-the-art simulation models should be accepted for use in basing environmental management decisions.

But simulation models have become more and more complicated. While some modelers pile complex algorithm on algorithm and rate constant upon rate constant in an attempt to force complex models to mimic calibration data, they invariably add a disclaimer proclaiming the model to be valid only for the specific modeled condition. If such models can't be used for making predictions and decisions, they become only useless intellectual toys as suggested by Baski (1979) for entertaining intellectuals.

Based on uncertainties in nature, should pollution control efforts stop until scientists agree on the usefulness of predictive tools? Can different scientists ever agree on the scientific acceptability of tools for predicting the impact of control measures? In 1972, Congress decided that water quality improvement could not wait until—or if ever—scientists resolve such uncertainties. The public's use of the common property resource known as water was in jeopardy, and the Nation must act to restore these uses.

COMMON PROPERTY RESOURCES

Common property resources are those held in common by the public—water, air, fisheries, and government-owned land resources. It is government's job to protect the public's interest in these resources. Competition in the free marketplace ends up in exploitation of common property resources as industry attempts to externalize production costs. It is profitable to pollute because individual control costs are usually much larger than the polluter's proportionate share of readily quantifiable damage to common property.

A good example of this situation involves a Tennessee Valley Authority impoundment on the Nolichucky River in Tennessee. The reservoir has filled with sediment associated primarily with feldspar and mica mining in North Carolina. In addition to interfering with public water supply intakes and treatment facilities, destroying game fishery and other aquatic life in 110 miles of river, and increasing flooding, the sediment forced abandonment of the electric generating facility (Tenn. Valley Auth., 1981).

Not only has the public had to forego benefits of the river and the lake, but they now must pay much more for replacement electricity. Assuming that the hydropower facility generated 75 percent of the time, the cost of replacing this lost electricity over 10 years with more expensive coal power would be at least $15 million over the cost of hydropower; actual replacement or dredging of the reservoir would cost millions more.

This inevitable situation involving the abuse of common property resources was termed the "Tragedy of the Commons" by Garrett Hardin (1968). He likened the situation to a "commons" or pasture used by a community for grazing. In self interest, herdsmen would keep adding cattle to graze on the commons until the numbers exceeded the carrying capacity. As a result of each herdsman trying to maximize his gain, the commons was overexploited and erosion and weed dominance eventually ruined the resource.

This situation arises because real costs of producing a product are not always being incorporated into the marketplace and the external costs are being borne by the public. Hardin concluded that the only way to avoid this dilemma of abused resources was to enact laws so that there would be "mutual coercion mutually agreed upon." When laws are enacted, a danger still exists because enforcement is delegated to bureaus that might not follow the intent of the law. In the words of Hardin (1968):

> The result is administrative law, which is rightly feared for an ancient reason—*Quis custodiet ipsos custodes?*—"Who shall watch the watchers themselves?" John Adams said that we must have "a government of laws and not men." Bureau administrators, trying to evaluate the morality of acts in the total system, are singularly liable to corruption, producing a government by men, not laws.

In passing the 1972 and 1977 clean water statutes, Congress recognized that water quality is a common property resource and that the public should not bear the social costs and risks of polluted water. Congress also recognized that the government (as custodian of this public property) cannot bear the unreasonable, impossible burden of proving that a certain source is responsible for a certain pollution problem.

Congress decided that the mutual coercion that Hardin spoke of should take the form of national minimum pollution control standards for all sources for the first round of water quality improvement. For those waters still dirty after implementing the minimum controls, an additional level of control would be required based on violations of water quality standards and on the benefits and costs of improvement. These site-specific determinations would take place under section 302 of the act, placing the burden of proof for determining that controls are not needed on dischargers.

While we engineers often pride ourselves on our modeling prowess and our wasteload allocations, we do not have the resources, time, or technical knowledge to make sure that just the right allocation of toxic chemicals or other

pollutants is made all across the country. We have major problems in determining actual impacts on individual species let alone ecosystem impacts and we cannot even detect the significance of many pollutants. Congress understood this when it changed the course of the Nation's water pollution control effort in 1972. The challenge facing water quality management professionals today is to use the tools that Congress has provided in a cost-effective manner to restore and maintain public benefits from this common property resource.

KEYS TO LAKE QUALITY MANAGEMENT

The Clean Water Act contains many provisions that are essential for restoring acceptable water quality to our Nation's lakes. Certainly the promulgation of effluent guidelines for toxic substances and nonconventional pollutants (such as nutrients) in the coming years will improve the point source abatement program. In addition, lake waters requiring controls beyond technology-based limits to restore acceptable quality will benefit from proper implementation of section 302 of the act. While these provisions may improve influent water quality, section 314 Clean Lakes Program must continue to be emphasized to deal with in-place pollutants that have accumulated for decades and still influence lake quality. Appropriate levels of Federal and State funding are needed to accomplish these programs. Beyond these efforts, two activities authorized by the Clean Water Act—but not effectively implemented nationwide—are necessary for lake quality improvement. These key activities involve criteria/standards for protecting lake and impoundment water quality and effective implementation of point/nonpoint source abatement tradeoffs.

Lake Quality Standards

A recent survey by the National Governors' Association (1982) found that almost 50 percent of all State water quality program budgets are supported by Federal funds. With funding cuts proposed on both the Federal and State levels, it is likely that priorities will have to be established for addressing water quality matters. While local residents may feel their lake is degraded, unless a water quality standard has been violated, such concerns may generate little government attention to do something about the problem.

Criteria must be established to protect public uses of lakes and impoundments. This will allow State water quality standards to be used to maintain clean waters and provide a priority to address dirty waters. These criteria will vary across the country, from natural lakes in Maine to those in Florida and from impoundments in the West to those in the Southeast.

Many States have not adopted the necessary criteria to protect public uses in the variety of lakes and impoundments that exist. Criteria developed for flowing waters may not be appropriate for still waters. Likewise, criteria for natural lakes may be inappropriate for impounded waters with less hydraulic retention time. Since pollution problems are most often biologically related, it makes sense that these criteria involve biological parameters rather than just measurements of water chemistry; aesthetic considerations may also be appropriate. In the future, as funding resources diminish, authorities may overlook water quality problems in lakes unless a water quality standard has been violated.

A good example of the use of such a standard for determining water quality improvement priorities is the approach used by the State of North Carolina in dealing with eutrophication. The State adopted a chlorophyll *a* water quality standard for lakes and reservoirs to indicate whether accelerated eutrophication may be occurring. This standard is a simple growing season maximum limit of 40 $\mu g/l$ for warm waters and 15 $\mu g/l$ for cold waters. If this standard is exceeded, the State begins an analysis of seasonal algal diversity to determine whether desirable algae (indicative of a balanced, highly productive system) or noxious algae (indicative of nutrient overenrichment) predominate. If noxious algae are impairing use, the entire watershed upstream of the problem water may be declared nutrient sensitive, and scientific investigations conducted to determine major sources of nutrient loading and to identify cost-effective abatement actions.

The key to this approach is the adoption of the chlorophyll *a* water quality standard so that the eutrophication problem can be declared a priority problem. However, the State must also have authority to require abatement of the problem. In North Carolina, the establishment of a "nutrient sensitive waters" classification gives broad authority to the Environmental Management Commission to correct nutrient-related problems. This regulation (included as Appendix A to this paper) is activated by a violation of the chlorophyll *a* standard and provides a means for controlling both point source and nonpoint source inputs of nutrients in a nutrient sensitive river basin.

While some professionals may agree that chlorophyll *a* contents of different types of algae vary widely (and therefore make it an inappropriate tool), the criteria value of 40 $\mu g/l$ represents a very large bloom of algae that would certainly merit further investigation. This practical approach is quite simplistic, but it is also scientifically defensible because of the three-step process involved: a violation of a standard occurs, a scientific investigation into the significance of the problem is conducted, and if evidence merits it the waters are declared nutrient sensitive.

The establishment of a lake quality standard is a key not only for dealing with eutrophication but also for other lake quality problems. Lakes are more sensitive to accumulation of toxic substances than are flowing waters. Lake quality standards, based on criteria that may differ from those in rivers, will be necessary to avoid bioaccumulation of toxic substances similar to the accumulation of selenium in Belews Lake, N. C., that decimated the resident fish population (Cumbie, 1978). A cooperative effort between the States, EPA, and the research community will be needed to establish such criteria for different types of lakes and impoundments on a regional basis in order to pool resources and eliminate duplication of effort. It is up to those professionals interested in restoring and maintaining public benefits from lakes and impoundments to see to it that these criteria and subsequent standards are established.

Point/Nonpoint Source Abatement Tradeoffs

Once violations of a water quality standard occur, threatening or impairing the use of lake waters, the key to cost-effective water quality improvement is the implementation of point source and/or nonpoint source control measures necessary to correct the problem. Determination of these tradeoffs is often an exceedingly difficult task. Section 208 of the Clean Water Act contains the provisions for determining tradeoffs between point source and nonpoint source abatement strategies. Unfortunately, the 208 planning process evolved into something different than an examination of tradeoffs; for the reasons explained by Duda et al. (1982) the program did not fulfill its expectations and funding has been eliminated.

It is clear that such tradeoffs need to be considered to provide cost-effective water quality improvement. A good example involves a highly eutrophic reservoir in northern Virginia, the Occoquan Reservoir. An extensive monitoring study was undertaken to determine the significance of different nutrient sources in the watershed. Randall et al. (1978)

reported the investigation found only 5 percent of annual nitrogen loading and 7 percent of annual phosphorus loading to the reservoir came from point source discharges. In this case, strategies to control nonpoint source contributions would be most appropriate.

Obviously, a strong monitoring program is essential to accomplish such a determination. In addition, the monitoring, analysis, and simulation investigations should be conducted in cooperation with major dischargers and special interest groups in the area. Whatever techniques are employed, they need to be discussed with all parties before the investigations begin to ensure that state-of-the-art techniques are used and to resolve reasonable questions of uncertainty.

An example of the importance of implementing point/nonpoint source abatement tradeoffs can be seen with the eutrophication problem in the Chowan River basin of North Carolina. While an extensive description of the problem has been given elsewhere (Duda, 1982), a short discussion will be included here. For the last decade noxious blooms of blue-green algae have depressed recreation activities, caused odor problems, and been suspected of contributing to a drastic decline in commercial fishing in slow-moving waters of the basin. Fish populations have been devastated by both red sore disease and fishkills from oxygen depletion following bloom collapse. *Aphanizomenon flos-aquae*, *Microcystis firma*, and *Anabaena circinalis* are the blue-green algae of concern. While the State of North Carolina water quality standard for chlorophyll *a* (40 μg/l) is commonly exceeded during the growing season, massive blooms with chlorophyll *a* values exceeding 200 μg/l are not uncommon.

Extensive water quality investigations as described by Duda (1982) were conducted in the late 1970s. While 130 point source dischargers were identified in the 13,000 km² watershed of Virginia and North Carolina, the basin is mostly rural-agricultural in nature and only four of the point sources discharge more than one million gallons a day. The total loading of nutrients in the main river was determined as was the contribution of point source dischargers. The result is given in Figure 2 in terms of average daily loading of phosphorus and nitrogen. For the 1979 water year, point source dis-

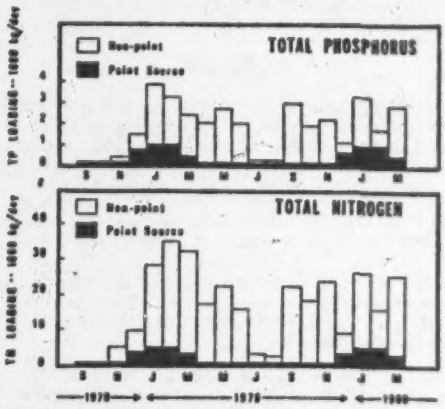

Figure 2.—Average daily loading of nutrients to the Chowan River at Holiday Island on a monthly basis.

chargers were estimated to contribute only 3 percent of total nitrogen loading and 6 percent of total phosphorus loading.

Concurrent with determination of river nutrient loading, automated samplers were placed in small agricultural watersheds (1.6–13 km² in area) to provide estimates of relative significance of nutrient contributions from agricultural watersheds in different physiographic areas, with different amounts of livestock and different drainage characteristics. Nutrient levels in these watersheds were compared with nutrient levels monitored in a concurrent study by the U. S. Geological Survey of forested watersheds in North Carolina (Simmons and Heath, 1979). Once again, details of the comparison may befound elsewhere (Duda, 1982).

One way to represent the results is by plotting the variation of average stormflow nutrient concentration recorded in the watershed with the number of livestock in the watershed. Figure 3 gives an example of such a relationship for

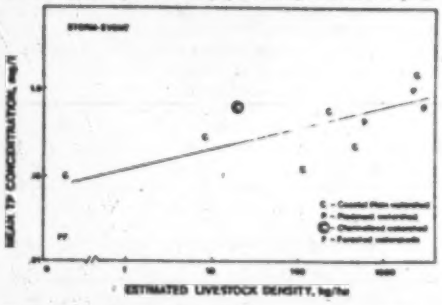

Figure 3.—Variation of mean stormflow total phosphorus concentrations with estimated livestock density recorded in small North Carolina agricultural watersheds.

total phosphorus. Note that as more livestock are present, average concentrations greatly increase over levels recorded in forested watersheds. In addition, much greater concentrations arefound in the watershed that has extensive drainage improvements such as channelization.

This exercise for determining tradeoffs in controlling point and nonpoint source pollutants was very valuable. It suggested that agricultural activities contributed much to the eutrophication problem. To reduce nutrient loading, extensive point source controls would not be effective. Rather, nutrient control measures for agricultural activities would be more appropriate and should be implemented in the following priority: controls for livestock waste, controls for nutrients from cropland in watersheds with extensive drainage improvements, and controls for nutrients from cropland draining directly to watercourses (without buffer zones).

Implementation of those control measures should first be attempted through voluntary means. Multiagency, cooperative projects are appropriate for seeking the use of such control measures on a watershed-wide basis. If these efforts prove futile, State and Federal regulatory actions should be taken under section 302 of the Clean Water Act or under State authority (such as the nutrient sensitive waters regulation). The challenge for regulatory agencies is to use the tools they already have to achieve cost-effective cleanup and protection of our Nation's lakes.

CONCLUSIONS

Improving lake water quality will be a challenging task in the years ahead. Professionals will face crippling budget cuts, changes in regulations, and the nagging cry of technical uncertainty from opponents of clean water. Attempts will be made to ignore criteria and standards and to replace them with subjective judgements whether uses of public waters are significantly impaired. While changes in legislation are called for in the name of economic and procedural efficiency, and scientific uncertainty, many professionals recognize

that such reasons have been used in the past to delay water quality improvement. By enacting the 1972 statute, Congress rejected the old vagaries of administrative law that had failed to protect the public's common property water resources. Instead, Congress established a local-State-Federal partnership that is quite cumbersome and quite complex, yet it represents the only strategy that will work to clean up public waters. The existing Clean Water Act is workable and necessary; it is essential to public welfare and to the restoration and protection of suitable lake quality.

The real challenge facing those concerned about lake quality is to ensure that the tools Congress has provided to cost-effectively restore and protect lake waters are properly used by water quality management professionals. This paper has identified two of these key tools: lake quality criteria/standards and point/nonpoint source abatement tradeoffs.

With pending budget cuts, priorities will be set in dealing with pollution problems. Without sufficient criteria and standards to protect the use of lake waters, public complaints may fall on deaf ears. A nationwide cooperative effort between the States, EPA, and the regulated community is needed to establish defensible standards on a regional basis to protect public uses of different types of lakes and impoundments.

Once a water quality standard is violated and use of lake waters is threatened or impaired, the key to cost-effective water quality improvement is the implementation of point source and/or nonpoint source control measures necessary to correct the problem. While this is often a difficult task, it is not impossible if sufficient resources are devoted to collecting the needed information and to conducting scientifically defensible analyses. An example was given to illustrate how such tradeoffs were determined for a eutrophication problem in North Carolina.

For implementation of these tradeoffs in control strategies, point source controls can be readily specified under section 402 of the Clean Water Act. If nonpoint source controls are needed, many States do not have appropriate authority to require implementation. In this case, multiagency, cooperative projects involving all levels of government and the private sector need to be undertaken in the watershed upstream of the lake or impoundment to address the pollutants of concern. Those interested in protecting lake quality need to assure that sufficient funds are appropriated to support such cooperative, watershed-wide projects, or alternatively that authority is established to require implementation of needed controls.

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APPENDIX 1

Regulation 15 North Carolina Administrative Code 2B .0214; NUTRIENT SENSITIVE WATERS; has been adopted and reads as follows:

.0214 NUTRIENT SENSITIVE WATERS

(a) In addition to existing classifications, the commission may classify any surface waters of the State as nutrient sensitive waters (NSW) upon a finding that such waters are experiencing or are subject to excessive growths of microscopic or macroscopic vegetation. Excessive growths are growths which the commission in its discretion finds to substantially impair the use of the water for its best usage as determined by the classification applied to such waters.

(b) NSW may include any or all waters within a particular river basin as the commission deems necessary to effectively control excessive growths of microscopic or macroscopic vegetation.

(c) For the purpose of this rule, the term "nutrients" shall mean phosphorous and/or nitrogen. When considering the assignment of this classification the commission may specify as a "nutrient" any other chemical parameter or combination of parameters which it determines to be essential for the growth of microscopic and macroscopic vegetation.

(d) Those waters additionally classified as nutrient sensitive shall be identified in the appropriate schedule of classifications as referenced in Section .0300 of this Subchapter.

(e) For the purpose of this rule the term "background levels" shall mean the concentration(s), taking into account seasonal variations, of the specific nutrient or nutrients upstream of a nutrient source.

(f) Quality Standards applicable to NSW: No increase in nutrients over background levels unless it is shown to the satisfaction of the director that the increase

(1) is the result of natural variations, or
(2) will not endanger human health, safety or welfare and that preventing the increase would cause a serious economic hardship without equal or greater benefit to the public.

Historical Note: Statutory Authority, G. S. 143-214.1; Eff. May 10, 1979.

LAKE RESTORATION, PROTECTION, AND MANAGEMENT

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1 nonpoint sources to each such portion of the navigable
2 waters, including but not limited to those programs
3 which are receiving Federal assistance under subsec-
4 tion (i); and
5 "(D) describes the process, including intergovern-
6 mental coordination and public participation, for identi-
7 fying waters under subparagraph (A) and best management practices and measures to con-
8 trol each category and subcategory of nonpoint sources
9 identified under subparagraph (B) and to reduce, to the
10 maximum extent practicable, the level of pollution re-
11 sulting from such category or subcategory so that subsection (a)(1)(A) water quality objectives shall be attained.
12 "(2)(A) Each State shall annually update in writing the
13 report submitted by such State under paragraph (1) with the
14 most recent information available.
15 "(B) Each report submitted under paragraph (1) and
16 each update submitted under this paragraph shall be based on
17 available information including, but not limited to, informa-
18 tion available under sections 208, 303(e), 304(f), and 305(b)
19 of this Act, and may include all or part of an existing water
20 quality management program approved under section 208 or
21 303 of this Act.
22 "(b)(1) Not later than two hundred and seventy days
23 after the date of enactment of this section, the Governor of
24 each State shall prepare and submit to the Administrator for
25 his approval—

1 "(A) a plan, developed in cooperation with local
2 agencies and organizations with expertise in control of
3 nonpoint sources of pollution, which such State pro-
4 poses to implement in the four-fiscal-year period begin-
5 ning after the date of submission of such report for
6 controlling pollutant loadings added from nonpoint
7 sources to the navigable waters within the State (so that subsection (a)(1)(A) water quality objectives shall be attained) and
8 "(B) a report which identifies each department,
9 agency, or instrumentality of the United States which
10 will be engaging in, supporting, or providing financial
11 assistance for any activity or program within the State
12 in the four-fiscal-year period beginning after such date
13 of submission which, if carried out, would be inconsist-
14 ent with implementation of such plan in such period
15 and recommends to the Administrator methods by
16 which such department, agency, or instrumentality
17 could modify administration of such activity or program
18 so that such activity or program is consistent with, and
19 assists the State in implementation of, such plan.
20 "(c) — See Wording in Testimony
"(2) Each plan proposed for implementation under this
21 subsection shall include—
22 "(A) a list of those specific portions of navigable
23 waters in the order in which the State plans to begin
24 control of pollution added from nonpoint sources in the
25 four-fiscal-year period beginning after the date of sub-

1 mission of such plan and, with respect to each such
2 portion, those categories and subcategories of nonpoint
3 sources of pollution with respect to which the State
4 proposes to implement control measures in such period;
5 "(B) a description of proposed best management
6 practices and measures which the State proposes to
7 implement in each fiscal year of such period to reduce
8 pollution resulting from nonpoint sources;
9 "(C) a schedule which requires each category or
10 subcategory of nonpoint sources of pollution to imple-
11 ment as expeditiously as possible (but no longer than 6 years) the practices and
12 measures identified in subparagraph (B) of this para-
13 graph and indicates estimated dates for implementation
14 of these practices and measures in each such year;
15 "(D) an identification of methods (including, as
16 appropriate, programs for enforcement, technical assist-
17 ance, education, training, and cost-sharing) for encour-
18 aging, assisting, or requiring implementation of such
19 practices and measures in such period so that subsection (a)(1)(A) water quality objectives shall be attained
20 "(E) an identification, description, and estimated
21 cost of such practices and measures proposed to be im-
22 plemented with Federal assistance provided to the
23 State under subsection (i) in each such year;
24 "(F) an identification of sources of Federal and
25 other assistance (other than assistance provided under

The Administrator shall prepare and implement the plan under subsection (b).

9

1 period. Upon request of a local agency or organization which
2 has expertise in, and authority to, control pollution resulting
3 from nonpoint sources in any area of such State and after
4 approval of such State, the Administrator shall provide tech-
5 nical assistance to such agency or organization in developing
6 for such period for such area a plan described in subsection
7 (b) which meets ~~the requirements of subsection (e)~~ and shall become part of the Federal plan. After de-
8 velopment of such plan, such agency or organization shall be
9 eligible to receive in such year assistance under subsection (i)
10 for implementation of such plan.

11 "(g) Upon request of a State, the Administrator shall
12 provide technical assistance to such State in developing a
13 plan referred to in subsection (b) for those portions of the
14 navigable waters requested by such State.

15 "(h) If any portion of the navigable waters in any State
16 which is implementing a plan approved under this section is
17 affected by pollution resulting from nonpoint sources in an-
18 other State, such State may petition the Administrator to
19 convene and the Administrator shall convene a management
20 conference of all States which contribute pollution resulting
21 from nonpoint sources to such portion. The purpose of such
22 conference shall be to develop ~~an agreement~~ and achieve implementation of a Master Plan among such
23 States to reduce the level of pollution in such portion result-
24 ing from nonpoint sources so that section (a)(1)(A) water quality objectives shall be attained. Each State which contributes sig-

1 nificant pollutant loadings from nonpoint sources to such por-
2 tion in amounts which contribute to such portion—
3 "(1) not meeting applicable water quality stand-
4 ards; or
5 "(2) not attaining a water quality which ensures
6 protection of public health, the use and value of such
7 portions for public water supply, agricultural, industri-
8 al, and other purposes, and propagation of a balanced
9 indigenous population of shellfish, fish, wildlife, and
10 plants and which allows recreational activities in and
11 on the water;
12 shall develop, submit to the Administrator for his approval,
13 and implement a plan referred to in subsection (b) (That is the State's portion of the Master Plan) to reduce
14 the level of pollution in such portion resulting from nonpoint
15 sources in such State.
16 "(i)(1) Upon application, the Administrator shall make
17 grants to each State for which a report, or an update of a
18 report, submitted under subsection (a) and a plan submitted
19 under subsection (b) of such subsection is approved under this
20 section for any fiscal year. Any such grant shall be made to
21 carry out in any fiscal year such plan for controlling in such
22 year pollution added to the navigable waters from nonpoint
23 sources. An application for a grant under this subsection shall
24 be in such form and shall contain such information as the
25 Administrator may require.

1 organization with authority to control pollution from nonpoint
2 sources in any area of such State.
3 "(5) There is authorized to be appropriated to carry out
4 this subsection not to exceed $150,000,000 per fiscal year for
5 the fiscal years ending September 30, 1984, September 30,
6 1985, September 30, 1986, September 30, 1987, and Sep-
7 tember 30, 1988.
8 "(j)(1) Not later than January 1, 1985, and each Janu-
9 ary 1 thereafter the Administrator shall transmit to the Com-
10 mittee on Public Works and Transportation of the House of
11 Representatives and the Committee on Environment and
12 Public Works of the Senate, a report for the preceding fiscal
13 year on the activities carried out under this section and the
14 progress made in reducing pollution in the navigable waters
15 resulting from nonpoint sources.
16 "(2) Not later than January 1, 1988, the Administrator
17 shall transmit to Congress a final report on the activities car-
18 ried out under this section. Such report, at a minimum, shall
19 include—
20 "(A) an analysis of the effectiveness of plans car-
21 ried out under this section and of the best management
22 practices and measures utilized under those plans in
23 controlling nonpoint sources of pollution;
24 "(B) an analysis of the level of State participation
25 in implementing such plans; and
"(C) an analysis of which waters not originally meeting subsection (a)(1)(A) objectives have attained those water quality objectives;

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MUNICIPAL POINT SOURCE AND AGRICULTURAL NONPOINT SOURCE CONTRIBUTIONS TO COASTAL EUTROPHICATION[1]

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ABSTRACT: Tidally influenced reaches of several coastal rivers in eastern North Carolina are suffering from very serious water quality problems – massive surface blooms of noxious blue-green algae, major fish kills from anoxic water, epidemics of red sore disease among fish, fresh water intrusion into estuarine waters, and declining commercial and sports fisheries. An intensive investigation of point source and nonpoint source inputs of nutrients was conducted in one of the eutrophic rivers, the Chowan River. Nonpoint source loading dominated the estimated annual flux of nutrients from the river basin. Automated water quality samplers were utilized to record nutrient levels in stormflow and baseflow from several small agricultural watershed in the basin. Levels of nitrate nitrogen and total phosphorus were from five to 40 times greater in these agricultural watersheds than levels in mostly forested watersheds. Existing water quality data in these eutrophic river basins implicate agricultural activities – particularly animal operations and cropland in watersheds with extensive drainage improvements – as the major contributing factor to the water quality problems.
(KEY TERMS: point/nonpoint source tradeoffs; eutrophication; agricultural nonpoint source runoff; nutrient loading; algae; water quality management.)

INTRODUCTION

While the eutrophic nature of many lakes has been well documented in the United States (EPA, 1980), much less information is available concerning the eutrophic status of coastal waters. Tidally influenced rivers are particularly susceptible to eutrophication. They serve as a repository for legal and illegal point source discharges as well as all nonpoint source discharges from activities such as agriculture and urban runoff that occur in their entire watersheds. While the serious nutrient problem in the Potomac River has received national attention due to extremely large point source discharges (Feliciano, 1979), problems in other coastal rivers have escaped widespread attention.

In areas where eutrophication problems are known to exist, the implementation of nutrient controls has been given a low priority due to pressing problems from toxic substances, the elimination of advanced treatment (nutrient removal) from the EPA Construction Grants Program, and the complexity of identifying contributing sources (point/nonpoint source tradeoffs). In particular, the contribution of agricultural activities to eutrophication problems has been disputed by some agricultural interests. While Omernik (1977) clearly demonstrated significant increases in nutrient concentrations draining agricultural versus forested watersheds across the country, some interests claim that such an analysis does not imply cause and effect relationships due to natural differences in nutrient concentrations of soils (Taylor, 1977). In other cases the use of inadequate data bases and inappropriate statistical methods have resulted in not being able to demonstrate significant differences in nutrient levels draining forested and agricultural land (Haith, 1976; Humenik, *et al.*, 1980; Thomas and Crutchfield, 1974). In all too many cases, however, deficiencies in cause and effect relationships, the need to conduct more studies, and the need to collect more data have been used to delay widespread implementation of nutrient control measures on agricultural land (Agricultural Task Force, 1979; Gilliam, *et al.*, 1978; Humenik, *et al.*, 1978; Loehr, 1979).

This paper presents the results of an investigation of point source and nonpoint source inputs of nutrients to the Chowan River in eastern North Carolina. The very serious eutrophication problem in this coastal river has been extensively researched by the State of North Carolina and is only one example of the nutrient problem plaguing a series of eutrophic coastal rivers in the state. Based on the extensive amount of data collected, a description of the nature and extent of the eutrophication problem is presented and agricultural activities are implicated as a major contributor to the water quality problem. In addition, comparisons are made between the nutrient problem in the Chowan River and similar problems in adjacent coastal rivers that also receive drainage from extensive amounts of agricultural land.

DESCRIPTION OF STUDY AREA

Location

The presence of a chain of barrier islands along the North Carolina coast shields much of the state's estuarine waters from the effects of ocean tides. This has resulted in longer

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residence times for nutrients and has made several coastal rivers more susceptible to eutrophication. Figure 1 illustrates the position of these barrier islands and the location of the three major rivers (Chowan, Pamlico, and Neuse) that are experiencing accelerated eutrophication.

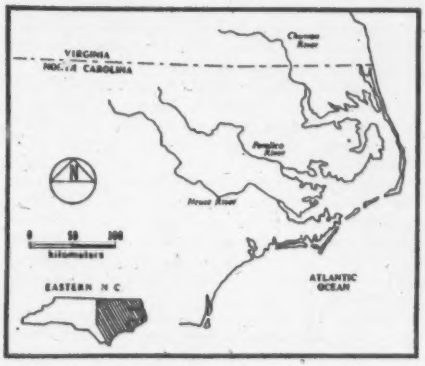

Figure 1. Location of Eutrophic Coastal Rivers in Eastern North Carolina.

This paper focuses on the nutrient problem in the northernmost of these tidal rivers, the Chowan. Draining about 12,700 km^2 in southern Virginia and eastern North Carolina, the Chowan River is tidally influenced from the border between the two states to its mouth at Edenton, North Carolina (Figure 2). The river varies in width from several hundred meters in its upper reaches to 8 km at Edenton. The shallow lower river from Holiday Island to Edenton (averaging 4 m. in depth) has a very long retention time and acts more like a lake than a river with summer flushing times on the order of two months (Daniel, 1977).

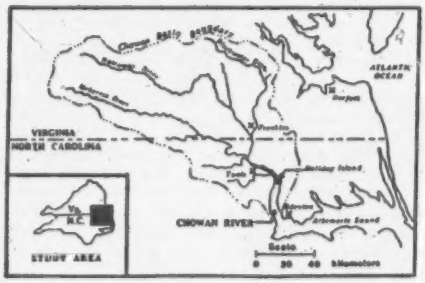

Figure 2. Map of the Chowan River Basin.

The watershed is very rural in nature, with a population of less than 275,000 people and with only small towns – all less than 10,000 people. While the eutrophication problem is manifested in the North Carolina portion of the river basin, almost three quarters of the watershed is located in Virginia, and about 20 percent of it is estimated to be agricultural land – about 150,000 ha. in Virginia and 81,900 ha. in North Carolina (Division of Environmental Management, 1980). The most widely grown crops are tobacco, soybeans, peanuts, and corn. Hog production is common in several North Carolina counties in the basin.

The Water Quality Problem

The Chowan River is very important to the livelihood of many North Carolina residents because of the significance of the sport fishing, commercial fishing, and tourism industries to this historic area of the state. For the last decade, blooms of noxious blue-green algae have depressed water based recreation activities, caused odor problems, fouled swimming beaches with 15 centimeter deep piles of decaying algae, caused tourism to slacken, and are suspected of being linked to the drastic decline in fishing success. In addition to fish kills, the important commercial herring fishery in the river is down 60 percent over normal catches, striped bass catches are down 80 percent, and catfish catches are down 50 percent according to studies by the North Carolina Division of Marine Fisheries (Johnson, 1980).

In addition to the algal blooms, epidemics of red sore disease have devastated fish populations in the area in 1976 and 1979. Caused by a bacterial infection, the disease causes lesions to develop on the fish and commonly results in death. During the epidemics, many commercial and game fish catches had to be discarded due to 70-100 percent contamination with the disease. Very high levels of the disease causing bacterium as well as infected fish were noted in the Chowan during 197[illegible] (Esch and Hazen, 1980). The public outcry that has arisen from these water quality problems has made the restoration of the Chowan River the top priority environmental goal of the Governor of North Carolina (Division of Environmental Management, 1980).

WATER QUALITY MONITORING STRATEGY

Since a devastating bloom of algae occurred in 1978, the North Carolina Division of Environmental Management has conducted extensive sampling in the Chowan River for nitrogen and phosphorus levels as well as algal biomass. Twenty four stations on the river from Virginia to Edenton are monitored weekly and eighteen tributary stations, encompassing the major North Carolina inputs to the main river, are monitored every other week. Chemical samples are collected from the entire water column by depth integrating techniques. Samples are placed on ice and delivered to the Biological and Agriculture Engineering Department Laboratory at North Carolina State University where the nutrient analyses are run on Technicon Autoanalyzer II using standard methods (Overcash *et al.*, 1975). Algal samples are collected by depth integrati[illegible]

techniques through the top meter to represent the photic zone of the tea colored water. The algal samples are analyzed at North Carolina State University as specified in Witherspoon, *et al.* (1979). Estimates of river flow rates were provided by the U.S. Geological Survey based on recorded flows in the watershed and stage measurements in the lower river (Daniel, 1977).

In addition, four small watersheds (1.6-12.9 km^2) with at least 50 percent of each watershed in agricultural use have been instrumented in the basin to monitor nutrient loadings. A recording rainfall gage, a digital stage recorder, and an automated stage activated sampler were installed on each stream during late 1979. The sampler (ISCO Model 1680) collects a water sample at each 7.6 cm rise or fall in stage and stores it in acid washed, plastic bottles with sulfuric acid used as preservative. These samples were collected several times weekly and delivered to the North Carolina Division of Environmental Management's Central Water Quality Laboratory for nutrient analysis with a Technicon Autoanalyzer using EPA approved methods (American Public Health Association, 1976). Nutrient levels recorded during wet weather and dry weather conditions were compared to nutrient concentrations draining almost completely forested watersheds in the North Carolina Coastal Plain. These low flow and storm flow levels of nutrients in forested watersheds were recorded by the U.S. Geological Survey and have previously been summarized by Simmons and Heath (1979).

RESULTS

Dynamics of Algal Populations

In response to the first massive surface bloom on the river in 1972, the State of North Carolina funded several studies that investigated the dynamics of the eutrophication problem in the Chowan River. Based on these investigations (Stanley and Hobbie, 1977; Witherspoon, *et al.*, 1979), three types of blooms appear to occur in the river. The spring bloom, consisting of a mixture of unicellular species dominated by diatoms such as *Melosira* and dinoflagellates such as *Peridinium*, blends in well with the tea colored water and does not usually form nuisance surface blooms. While the magnitude of this bloom is symptomatic of the nutrient overenrichment, it is not noticed by the public. From early summer to fall (depending on temperature and flow), a second type of bloom, the visible blue-green bloom, is presentt in the water column. Each of the three nuisance species (*Anabaena circinalis*, *Microcystis firma*, and *Aphanizomenon flos-aquae*) appears to gain a competitive advantage over the unicellular species in different sections of the river based on the flow regime and presence of nutrients in that section.

Wind action and flow conditions normally keep these blue-green algae dispersed throughout the water column and only small, localized surface blooms occur. However, when the wind slackens, river flow decreases and air temperatures increase in the "dog days" of late summer, the blue-greens come to the surface, aggregate into mats, and then turn portions of the river into "peasoup." This surface manifestation of th blue-green bloom can be referred to as a "sociopolitical" nui sance bloom (third type of bloom) because this is the bloom that the public is worried about and is the one that provoke political action. This nuisance bloom, which reached massiv proportions in 1972 and 1978, is very transient, and within several hours, a massive surface bloom can disappear as wind mix the cells throughout the water column. Dissolved oxygen depletion and fish kills may follow this collapse just as they do elsewhere in the country (Barica, 1978).

It is clear from the observations that physical factors control the occurrence of massive surface blooms in the river Water flow, channel geometry, retention time, and wind all play important roles in determining when and where surface blooms will occur. During a summer with low flow, a parcel of water entering the lower river at Holiday Island may not enter Albemarle Sound until late fall (Figure 2). In fact, daily evapotranspiration from the water surface and the surrounding riverine swamps can account for as much as the entire river flow into the lower river at Holiday Island (Daniel, 1977). This very long retention time fosters the efficient utilization of nutrients by the algae.

Following the massive bloom of July 1978, weekly measurements of algal biomass (as reflected by chlorophyll *a* determinations) and nutrient levels were made in the river. Figure 3 presents the variation of chlorophyll *a* with levels of orthophosphate and nitrate nitrogen at the sampling station near Holiday Island for a two-year period. The average flow of the river at this point is also presented on a monthly basis. Note that algal biomass increases greatly whenever flow is low during the warm season and decreases during high flows. Nitrate concentrations were found to be greatest during winter and spring, and a post agricultural fertilization peak in both nitrate and ortho-phosphate was evident in May and early June 1979. The very explosive growth in algae in late spring depletes these two nutrients down to undetectable limits (< 0.01 mg/l). Chlorophyll *a* concentrations exceeded the state water quality standard of 40 $\mu g/l$ for seven weeks during the summer of 1979 at this station despite the absence of the nuisance surface bloom. Frequent cloudiness, winds, and rain from tropical depressions seemed to prevent the buildup of surface mats.

During 1980, the bloom was much less noticeable than in 1979 and appears to be linked to the magnitude of spring inputs of agricultural nutrients to the river. During spring of 1978, very high amounts of rainfall occurred, and weather conditions were such during summer that massive blooms resulted (chlorophyll *a* levels exceeded 230 $\mu g/l$ at several points in the lower river). In contrast, May and June 1980 were abnormally dry and the spring peak in nutrient transport did not occur. This caused nutrients in the river to reach very low levels more than two months earlier than they did in 1979. The decline in algal biomass during June 1980 (the decline continued throughout summer) shows a nutrient limitation during this dry year. More detailed analyses of nutrient and biomass data are available elsewhere (Division of Environmental Management, 1979).

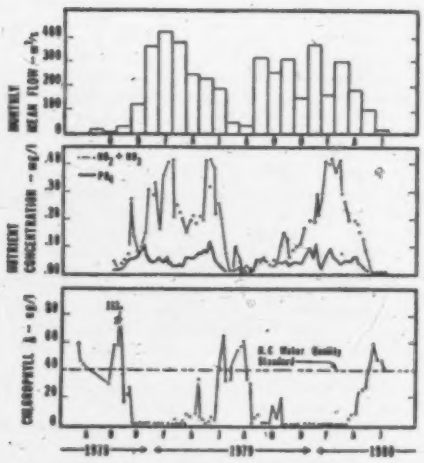

Figure 3. Variation of Chlorophyll *a* and Nutrient Concentrations with Average Flow in the Chowan River at Holiday Island.

River Nutrient Loading

Average daily loadings of nitrogen and phosphorus in the Chowan River at Holiday Island (at this point receiving drainage from over 95 percent of the watershed) were estimated on a monthly basis for the period September 1978 to March 1980. The loading rates were developed from the monthly average of weekly measurements of nutrients and the flow rates provided by the U.S. Geological Survey and are presented in Figure 4. The shaded portion of each estimated average daily loading represents point source discharges from the entire basin.

This point source loading was estimated from sampling conducted on effluent from the larger discharges and extrapolations made for smaller dischargers based on existing levels of treatment. The details of this analysis are given in a summary report (Division of Environmental Management, 1980). In this rural river basin, 130 point source discharges of nutrients were identified in Virginia and North Carolina – most of them being very small discharges such as from schools. Only four point sources discharge more than one million gallons/day (3.79 million liters/day), another three discharge between one-half and one million gallons/day, and 62 have discharges less than 0.01 million gallons/day. The increase in loading during winter (December-March) results from the seasonal discharge from Union Camp waste water lagoons in Franklin, Virginia. The waste water is treated and stored in large holding ponds until the high flows of winter occur. Of the total point source load of nutrients discharged in the Chowan basin, 63 percent of the load of total nitrogen and 83 percent of the load of total phosphorus was estimated to be contributed by dischargers in Virginia.

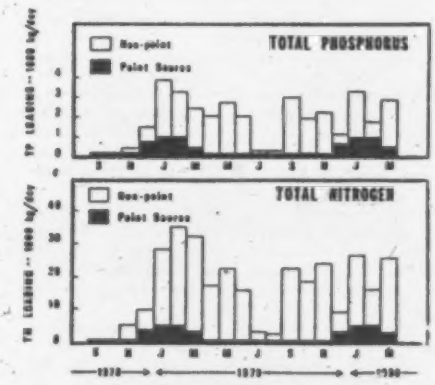

Figure 4. Average Daily Loading of Nutrients to the Chowan River at Holiday Island on a Monthly Basis.

An estimate of annual nutrient flux to the lower river Holiday Island was made for the 1979 water year (Octo 1978 to September 1979) by summing up the monthly loa presented in Figure 4. Total nitrogen loading for the low river at Holiday Island was estimated as 61.3 x 10^5 kg/y and total phosphorus loading at 6.3 x 10^5 kg/year. Of th values, point source discharges were estimated to contrib only 3 percent of the total nitrogen load and 6 percent of t total phosphorus load. While these estimates would be grea in high flow years and lower in low flow years, they indic that most of the nutrient load can be attributed to nonpo sources – 97 percent of the nitrogen load and 94 percent the phosphorus load for water year 1979. Of the nitrog load 36 percent was inorganic nitrogen and 64 percent w organic nitrogen. Of the phosphorus load, 49 percent was the reactive form of ortho-phosphate. In a detailed study eutrophication in a northern Virginia river impoundment l cated in the same physiographic area as the Chowan Ri basin), Randall, *et al.* (1978) found that 5 percent of the nit gen and 7 percent of the phosphorus loading on an ann basis came from point source discharges and the rest from n point sources.

Nonpoint Source Nutrients

Given the major contribution of nonpoint source dischar to total nutrient loading, it was necessary to determine whet agricultural or forested areas contribute greater levels of trients in the river basin. Storm event monitoring of nutri

levels in the four small agricultural watersheds began late in 1979. The monitoring stations were established as part of a cooperative demonstration with North Carolina State University to document the extent of water quality improvement once farmers implement "Best Management Practices" (BMP's).

Two watersheds were located in the well drained Coastal Plain, which is characterized by cropland in the uplands that drains to low lying swamps bordering the creeks. The other two watersheds were located in the poorly drained Coastal Plain, characterized by clayey soils and flat land requiring extensive drainage improvements and channelization to allow crop production. Each of the four study watersheds was at least 50 percent agricultural land, and general characteristics of each are given in Table 1. In this portion of eastern North Carolina, totally forested watersheds are scarce, except for managed pine stands on forest industry land. Fortunately, the U.S. Geological Survey had just completed detailed monitoring of water quality in a number of totally forested watersheds in the North Carolina Coastal Plain, and this data base provided a suitable comparison with nutrient levels in the agricultural watersheds.

Table 2 contrasts mean values for low flow and storm flow nutrient concentrations in the agricultural and the forested watersheds. The agricultural values represent data from the first year of sampling, which yielded between 7 and 12 storm events for each watershed. In general, variability of the mean values, as measured by the relative standard deviation, was greater for storm event concentrations than for low flow levels of the four primary nutrient parameters (ammonia, nitrate, Kjeldahl nitrogen, and total phosphorus). Of the four agricultural watersheds, the catchment with less livestock, WD-1, had the least variable level of nutrients – with relative standard deviations ranging from 20-60 percent for low flow values and 35-90 percent for storm flow values. PD-2, with the variability introduced by the swine, had the largest relative standard deviations, ranging between 70-160 percent for storm flow concentrations. For all watersheds, Kjeldahl nitrogen concentrations were most stable (ranging from 30-60 percent of mean values), while phosphorus values were the most variable (40-160 percent). The forested watersheds, with their very low mean concentrations, had the smallest absolute values for standard deviations, yet due to the low concentrations their relative values approached 100 percent of the mean.

The difference in mean concentrations of nitrate and total phosphorus between the paired watersheds WD-1 and WD-2 may be the result of greater amounts of livestock. Five-fold increases in average low flow and storm flow concentrations of nitrate were found in WD-2. Watershed PD-1, the extensively channelized watershed, had several-fold increases in nitrate, organic nitrogen, and total phosphorus over the swamp lined agricultural catchment WD-1. When swine were present in stream side areas of PD-2, very large increases in nitrate and storm flow concentrations of organic nitrogen and total phosphorus resulted (Table 2).

TABLE 1. Characteristics of Small Agricultural Watersheds Monitored in the Chowan River Basin.

Watershed	Drainage Area (ha)	Land Use (percent of watershed)			Livestock Population	Major Crops
		Forest	Cropland	Pasture/Idle		
WD-1	1890	50	46	4	none	peanuts, corn
WD-2	2639	51	48	1	32,000 broilers 400 swine 90 cattle	corn, peanuts, beans
PD-1	293	45	53	2	6 swine	corn, beans
PD-2	196	39	56	5	50 swine (near creek)	corn, beans

TABLE 2. Comparison of Mean Low Flow and Storm Flow Concentrations of Nutrients (mg/l) in Small Forested and Agricultural Watersheds in the North Carolina Coastal Plain.

Constituent	USGS Forested Watersheds		WD-1 (Swamp Lined)		WD-2 (Some Livestock)		PD-1 (Channelized)		PD-2 (Hoglot)	
	Low	Storm	Low	Storm	Low	Storm	Low	Storm	Low	Storm
Number of Samples	24	25	21	43	24	35	10	51	7	63
Ammonia	0.01	0.01	0.14	0.06	0.08	0.12	0.08	0.07	0.10	0.18
Nitrite plus Nitrate	0.03	0.06	0.06	0.17	0.42	0.69	0.14	0.42	1.93	1.47
Total Kjeldahl Nitrogen	0.38	0.48	0.69	0.50	0.52	0.73	0.96	1.08	0.54	1.83
Total Nitrogen	0.41	0.54	0.75	0.67	0.94	1.42	1.10	1.50	2.47	3.30
Total Inorganic Nitrogen	0.04	0.07	0.20	0.23	0.50	0.81	0.22	0.49	2.03	1.65
Organic Nitrogen	0.37	0.47	0.55	0.44	0.44	0.61	0.88	1.01	0.44	1.65
Total Phosphorus	0.01	0.02	0.09	0.09	0.10	0.19	0.25	0.32	0.09	0.78

When compared to mean nutrient levels in the U.S. Geological Survey forested watersheds, organic nitrogen values were about the same in the two well drained watersheds (with agricultural drainage leading to the wooded swamps) but were higher in the poorly drained areas. However, very large increases were noted in total phosphorus (TP) and total inorganic nitrogen (TIN) concentrations for the four agricultural catchments. The increases over the forested situation were 5-10 fold for WD-1 and about 10 fold for WD-2, with its moderate livestock population. In the channelized watershed, 5-7 fold increases occurred in TIN concentrations, and due to greater surface runoff and erosion, 15-20 fold increases occurred in TP levels. With the small hoglot in FD-2, 20 to 40 fold increases in mean TIN and TP concentrations were found over mean levels recorded in forested watersheds. Since water export from these agricultural watersheds is probably greater than from totally forested catchments, the increase in nutrient loads should be greater than the simple increases in concentration. Rigorous statistical anlayses and loading estimates will await completion of the second year of sampling.

Very high concentrations of nutrients have been found in many other Coastal Plain agricultural watersheds from Georgia (Jackson, *et al*, 1973) to North Carolina (Gambrell, *et al*, 1975; Kuenzler, *et al*, 1977; Skaggs, *et al*, 1980) and Delaware (Ritter, *et al*, 1979). The presence of livestock wastes (Kuenzler, *et al*, 1979; Liebhardt, *et al*, 1979), and the use of drainage improvements such as tile drains or channelization (Gambrell, *et al*, 1975; Kuenzler, *et al*, 1977; Humenik, *et al*, 1980) have been found to greatly increase nutrient levels of Coastal Plain waters. In particular, values of inorganic nitrogen species – normally the limiting nutrient in estuarine waters – are greatly elevated over the forested situation. The comparison of nutrient levels in forested and agricultural watersheds suggests that nutrient levels (especially nitrate nitrogen and total phosphorus) are much higher in agricultural watersheds. These increases may be up to five fold for watersheds with extensive swamps, ten fold for swampy watersheds with significant populations of livestock or extensive amounts of drainage improvements, and up to 20-40 fold increases when livestock wastes are poorly managed in the agricultural watersheds.

Delivery of Agricultural Nutrients

Despite the high levels of agricultural nutrients that have been found to be present in Coastal Plain streams, some agricultural interests "doubt that reduction of nutrient loss from cropland would be noticed at the estuary" due to the "natural" loss of nutrients that occurs between agricultural fields and coastal waters (Gilliam, *et al*, 1978). Such interests maintain that processes such as denitrification, assimilation, and overbank deposition prevent the nutrients from reaching coastal waters (Gambrell, *et al*, 1975; Agricultural Task Force, 1979). While some reduction certainly occurs through denitrification and assimilation in swamps, the extensive amounts of agricultural drainage improvements and transformation of nutrient species to other forms appears to ensure that agricultural nutrients do reach coastal waters of eastern North Carolina.

From the upland Piedmont and the upper Coastal Plain, some overbank deposition and assimilation does occur, but the confined stream channels on an annual basis should flush nutrients and transformed nutrients (algae and detritus) to coastal waters. It is in the Coastal Plain swamp lined streams (well drained areas) or swamps in the streams (poorly drained areas) that the potential for assimilation is greater. There is ample evidence from South Carolina (Kitchens, *et al*, 1975) and Louisiana (Patrick, *et al*, 1976) that Coastal Plain swamps do remove pollutants, assimilate nutrients, and therefore protect water quality of coastal waters. It is when these natural nutrient removal systems are overloaded by agricultural drainage improvements and animal wastes or are eliminated by channelization that increased amounts of nutrients are delivered to estuarine areas.

Agricultural drainage improvements and channelization projects have been conducted all across eastern North Carolina. More than 70 percent of the cropland in the 17 coastal counties has been artificially drained (Doucette and Phillips, 1978), and millions of additional hectares in the inner Coastal Plain have also had improved drainage. In the North Carolina portion of Chowan basin, five channelization projects (with over 600 kilometers of channel excavations) have been completed by the U.S. Soil Conservation Service and others are planned. The data presented in this paper as well as other monitoring results reported by Kuenzler, *et al* (1977), and Humenik, *et al* (1980), show much higher delivery of nutrients from watersheds with channel improvements than those with intact swamps.

Even in large (150 square kilometers) watersheds, increases in annual flux of nutrients (20 fold for inorganic nitrogen and 30 fold for total phosphorus) have been documented in channelized streams compared to similar agricultural watersheds draining to swamps (Kuenzler, *et al*, 1977). Five to ten fold increases in annual inorganic nitrogen and phosphorus flux were also found in large agricultural watersheds with intact swamps when substantial populations of livestock (hogs) were present in the watershed (Kuenzler, *et al*, 1977). It is clear that livestock runoff and drainage improvements dramatically increase downstream nutrient delivery, especially when channel improvements destroy the assimilative capacity of poorly drained, swampy areas in small watersheds.

Additional support for this hypothesis that smaller swamp associated watersheds are more important in nutrient assimilation than larger coastal rivers that receive agricultural drainage comes from an analysis of suspended sediment transport measurements made by the U.S. Geological Survey in two large creeks in the Chowan basin. Ahoskie Creek (with a 150 km^2 drainage area) was extensively channelized several decades ago. Potecasi Creek is a larger stream (with a 495 km^2 drainage area) and is lined by swamps along much of its channel. It receives at least one-third of its drainage from channelized agricultural watersheds. Figure 5 illustrates the variation of normalized sediment transport (metric tons/day/km^2) with normalized flow (cubic meters/second/km^2) for the two creeks as well as four other creeks that flow through swampy areas. South River (No. 1) and Drowning Creek (No. 2) represent larger watersheds the size of Potecasi Creek (No. 3), when

Creeping Swamp (No. 4) and Black River (No. 5) represent smaller watersheds the size of Ahoskie Creek (No. 6). The suspended sediment measurements were taken from the U.S. Geological Survey's annual data reports (*Water Resources Data for North Carolina*) for water years 1974 to 1979.

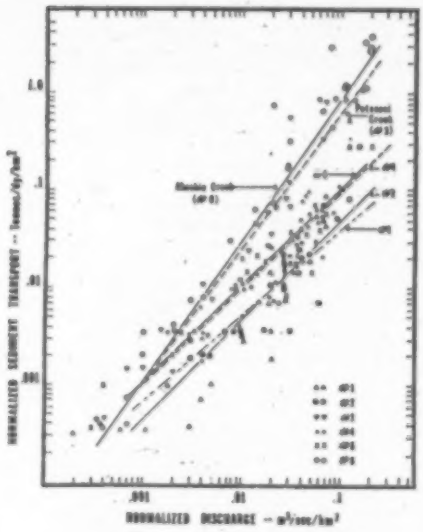

Figure 5. Variation of Normalized Sediment Transport With Normalized Flow for Coastal Plain Streams With and Without Extensive Drainage Improvements.

The four unchannelized creeks, despite having different amounts of agricultural land and different size drainage areas, are all clustered with much lower normalized solids transport at a given normalized flow than Ahoskie and Potecasi Creeks. The difference is less at lower flows due to the large amount of nonfilterable residue (detritus) that is present in these swampy, black water streams. Logarithmic regressions were run to generate least squares equations for each of the relationships and the best fit for each creek is depicted in Figure 5. Very high R^2 values resulted (from 0.77 to 0.82 for the four natural creeks and 0.92-0.96 for Potecasi and Ahoskie Creeks). An analysis of covariance was also conducted to detect differences between the relationships. Each of the natural streams was found to be significantly different ($p = 0.01$) from Ahoskie Creek and Potecasi Creek.

Despite having a larger watershed and some adjacent swamps, the suspended solids transport in Potecasi was not significantly different ($p = 0.01$) from that in smaller, mostly channelized Ahoskie Creek. This suggests that once the pollutant assimilative capacity of small, swampy watersheds is destroyed or overwhelmed, less assimilation of particulate pollutants occurs in the confined, downstream channels of larger creeks. The statistically significant difference in pollutant transport in Potecasi Creek compared to the two other larger creeks also suggests that larger creeks serve more as transmission zones rather than as zones for assimilating agricultural pollutants (suspended solids, probably phosphorous, maybe nitrogen). In fact, ten fold increases in total phosphorus and total inorganic nitrogen (compared to forested watersheds) are normally monitored in Potecasi Creek as it empties into the tidally influenced Chowan River despite the absence of significant point source discharges (Division of Environmental Management, 1979).

Timing of Agricultural Nutrient Inputs

The timing of agricultural inputs to the main river may be the most significant factor in initiating the massive surface blooms of blue-green algae. Earlier analyses pointed out that large amounts of reactive nitrogen and reactive phosphorus are transported to the river in late winter and spring – very likely from agricultural sources. Researchers suggest that the spring pulse blooms of diatoms and dinoflagellates trap some of those nutrients for remineralization, recycling, and uptake by the noxious blue-greens in the Chowan during summer (Stanley and Hobbie, 1977). Davis, *et al.* (1978), noted a similar "storage of nutrients and subsequent remineralization" in the nearby eutrophic Pamlico River.

Algal growth is commonly observed during spring at agricultural tile outlets and in drainage ditches, and nuisance plant growth commonly chokes stream channels below agricultural drainage improvements in the Coastal Plain during early summer (Swicegood and Kriz, 1973). It is obvious that this growth assimilates some nutrients during spring and early summer, but depressed dissolved oxygen and stagnant conditions may cause remineralization and recycling in these tributaries. Moderate summer storm flows may just flush the nutrients and plant material down to the main river and provide a boost for the nuisance algae to develop into massive surface mats.

The larger the spring contribution of nutrients, the more massive the noxious algal bloom appears to be in the Chowan River if optimum weather conditions exist during summer. The two years with massive surface blooms (1972 and 1978) were characterized by very wet spring seasons and dry summers with little wind. While above average rainfall also occurred during spring of 1975 and 1979, tropical depressions and frequent summer rainfall washed much of the blue-green algae out of the river and prevented massive surface blooms in 1975 and 1979. In contrast, 1980 spring rains were very much below normal and little rain fell after May. Despite the continued input of point source discharges, no massive blooms occurred in the Chowan River during summer, 1980, indicating nutrient limiting conditions when nonpoint source agricultural nutrients do not overload the river. The lack of blooms during the dry year of 1980 implicates nonpoint source agricultural nutrients as a significant contributor to the eutrophication problem in

the lower Chowan River and perhaps in adjacent eutrophic rivers. Additional discussions of the importance of weather and flow conditions to the occurrence of algal blooms in the Chowan are presented by Witherspoon, *et al.* (1979).

ADJACENT COASTAL RIVERS

The findings of this investigation in the Chowan River basin document what has been suspected for nearly a decade in North Carolina – that nutrient controls need to be implemented throughout drainage basins (especially in agricultural areas) to reverse the eutrophication of North Carolina coastal waters. This management strategy applies not only to the Chowan but also to the Neuse and Pamlico River basins. The very serious eutrophication problem in the Chowan is expressed in a different manner than the problems in the more saline Neuse and Pamlico estuaries. In these more saline estuaries, the deoxygenation that accompanies blooms of blue-green algae and dinoflagellates results in massive fish and shellfish kills when certain weather conditions persist. In an intensive study of this eutrophication problem, Davis, *et al.* (1978), noted seven fish kills during a 40-day period in June and July 1977. This phenomenon has also occurred in the Neuse. During summer 1978 and 1979, the Division of Environmental Management investigated eight of these massive (greater than 25,000 fish) kills in both the Neuse and the Pamlico. Bluefish, shad, croaker, flounder, spot, menhaden, and crabs have perished in these massive kills.

In the Neuse, an intensive study found that the estuary has lower species diversity than other southeastern estuaries (Hester and Copeland, 1975). Furthermore, the researchers documented that there is not a resident population of fish in the Neuse during the summer, which is unlike other estuaries in the Southeast, and that the migratory population leaves the area just as the deoxygenation develops in early summer. This absence of a normal population of fish in the Neuse during summer is indicative of the very serious water quality problem that exists there.

The Coastal Plain of the Neuse and Pamlico River basins is also intensively used for agriculture. More than a dozen large scale channelization projects have been completed or authorized and tens of thousands of kilometers of tile drains and open ditches have been installed. The Coastal Plain of these two basins has the highest densities of cropland, tobacco, corn, and swine in the state (Agricultural Task Force, 1979).

The Neuse and Pamlico Rivers are located adjacent to the Albemarle-Pamlico peninsula of eastern North Carolina. This very flat area is made up of several types of wetlands and has extensive deposits of peat. The wetlands have been intensively drained and are being converted to cropland. More than 20 percent of wetlands in coastal counties of North Carolina have been drained and converted to agricultural use (Doucette and Phillips, 1978). Corporate farms, containing up to 145,000 hectares of contiguous agricultural land and having clearings up to 20 kilometers long, have been developed in the coastal counties (Taylor, 1978). Drainage canals five meters deep and field ditches spaced on an 30-meter grid are used to drain the wetlands. Figure 6 illustrates the larger canals in one of th affected counties as mapped from aerial photos by the U.S Geological Survey (Daniel, 1978). Figure 6 covers an area of 36,0 hectares.

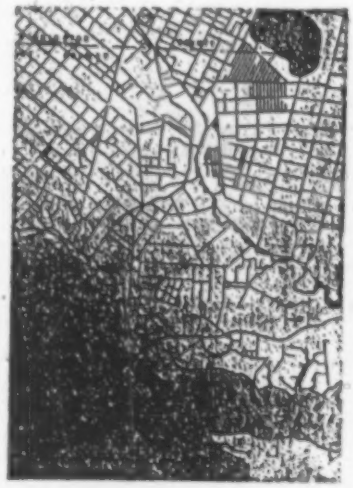

Figure 6. Major Agricultural Canals in Close Proximity to Coastal Waters.

These extensive agricultural drainage systems, the appl tion of fertilizer, and wastes from beef cattle and swine op tions appear to be having a profound influence on w quality in portions of the Neuse and Pamlico estuaries. I drainage improvements have been found to cause 3-5 t increases in peak flows following rainfall (Skaggs, *et al.*, 198 These slugs of fresh water have reduced salinity in prime tuarine nursery areas, resulting in reductions of shrimp pop tions and the elimination of oysters from entire bays (Sn and McCloes, 1981). This decrease of salinity in estuarine ters can make the waters more susceptible to blooms of bl green algae and infestations of red sore disease (Esch and Hazen, 1980). Entire populations of commercially impor fish species have perished from red sore disease in sect of coastal North Carolina (Esch and Hazen, 1980). In addit high levels of nutrients and fecal coliform bacteria have b recorded in waters leaving these corporate farms (Kirby-S and Barber, 1979; Skaggs, *et al.*, 1980).

These coastal water quality problems have not been fined to North Carolina. Livingston (1975) reported that tensive agricultural drainage has impacted water qualit Apalachicola Bay, Florida. Increased peak storm flows i

reduced salinity levels and increased sedimentation to the point that shrimp resources are no longer plentiful. Also in Florida, the contribution of agricultural runoff to the algal problems and fish kills in Lake Apopka are well known (Schneider and Little, 1972). In addition, agricultural drainage improvements have been implicated in the increase of eutrophication problems in the Kissimmee River basin (Carter, 1974).

MANAGEMENT IMPLICATIONS

As noted by Stanley and Hobbie (1977), levels of nutrients in the Chowan River are not much different than in other North Carolina estuaries. Due to differences in salinity, retention time, and physical factors, the eutrophication problem is manifested in different ways and appears to be getting worse in each estuary. However, common to each estuary is a very large late winter-spring slug of inorganic nitrogen that appears to have as its source agricultural activities. As suggested by Stanley and Hobbie (1977), spring blooms may "store" these nutrients until they are recycled later in the summer, resulting in nuisance algal blooms and fish kills from dissolved oxygen depletion.

It is apparent from existing water quality data that nutrient abatement in these three river basins needs to be focused on agricultural livestock operations, cropland located in the well drained Coastal Plain, and cropland in poorly drained watersheds that have been subjected to extensive agricultural drainage improvements. While municipal point source discharges undoubtedly contribute to these eutrophication problems, it is likely that expensive point source nutrient control programs will not alleviate the problem without the abatement of agricultural nutrients. This issue of point/nonpoint source tradeoffs will remain the major obstacle to the solution of eutrophication problems during the 1980's.

As a result of a 1975 court decision, each state was required by Section 208 of the Federal Water Pollution Control Act Amendments to produce a plan for controlling critical water quality problems from both point and nonpoint source pollutants. The Section 208 planning process was relied on by citizens of North Carolina to initiate abatement programs for solving these agricultural nonpoint source water pollution problems. However, agricultural interests were given responsibility to prepare the "208 Agricultural Plan" (Agricultural Task Force, 1979), and a purely voluntary program was the result. The Plan recommended that existing programs (S.C.S., Agricultural Extension, etc.) continue to do what they can to educate agricultural interests in the voluntary use of practices for minimizing pollutant generation. This voluntary program was highlighted by several studies that would be undertaken if additional funds became available.

Such a low profile, voluntary program may not be successful in addressing agricultural nonpoint source pollution problems in coastal areas. Likewise, regulatory programs will be of little utility in solving coastal water quality problems in North Carolina because state legislation has been systematically enacted to exempt agricultural activities from existing regulatory programs. Agricultural activities are now exempt from the North Carolina Coastal Area Management Act and the Sedimentation Pollution Control Act. Agricultural activities, including livestock operations, were recently exempted by the North Carolina state legislature from "Special Orders" issued by the North Carolina Environmental Management Commission under state water quality legislation, and the authority for approval of watershed workplans (P.L. 566) and the use of channelization in agricultural watersheds was deleted from the powers of the Environmental Management Commission.

The wholesale exemption of agricultural activities from state environmental regulations and inadequate funding for agricultural education and assistance programs ensures that existing programs will not be able to solve coastal eutrophication problems. If aggressive, new programs are not implemented to reduce the loading of agricultural nonpoint source pollutants, coastal water quality will continue to decline in North Carolina. Such inaction should be accompanied by a downgrading in the classification of these coastal waters so citizens understand that the approved use of the waters is for "pollution disposal" rather than for the protection and propagation of indigenous aquatic life.

CONCLUSIONS

With the current reduced level of expenditures for water quality management, abatement efforts must first focus on waters whose designated use has been impaired. A watershed-by-watershed approach is needed to implement the most cost effective tradeoff in point/nonpoint source control programs to optimize water quality improvements. This paper examined the nature and extent of the nutrient enrichment problem in one of several eutrophic coastal rivers in eastern North Carolina. Detailed monitoring conducted during water year 1979 illustrated that nonpoint source loadings dominated the annual flux of nutrients from the more than 12,000 square kilometer Chowan River watershed, with 97 percent of the nitrogen and 94 percent of the phosphorus load estimated to come from nonpoint sources.

The results of storm event water quality sampling undertaken in small agricultural watersheds in the basin were compared to concentrations of nutrients draining mostly forested watersheds. The data demonstrate that widespread agricultural fertilization of cropland in the Coastal Plain may increase average concentrations of inorganic nitrogen and total phosphorus five fold over the forested situation. Large populations of agricultural livestock may increase the values from 20-40 fold over forested basins. In agricultural watersheds which have extensive drainage improvements (including channelization, average concentrations of some nutrients may be increased up to 20 fold over forested watersheds depending upon the soils.

The timing of the spring input of nutrients from nonpoint sources and the high levels of nutrients recorded in agricultural watersheds implicate agricultural sources as an important factor in determining whether massive blooms of blue-green algae occur in the Chowan River during a given year. In years with high spring precipitation, massive surface blooms of algae have occurred. However, in years with low spring flows, such

as 1980, the noxious blooms of blue-green algae do not occur despite continued input of municipal and industrial point source discharges. Evidence was presented suggesting that the large spring load of nutrients delivered to coastal waters may be assimilated by spring blooms of algae such as diatoms and that these nutrients are temporarily stored in algal biomass until recycling later in summer makes them available to nuisance types of algae.

Agricultural drainage improvements such as tile drains, intensive ditch systems, and channelization projects through wetlands were identified as being responsible for increasing the delivery of agricultural nutrients to coastal waters. Wetlands in small watersheds were postulated as being most important for assimilating nutrients, but drainage improvements have commonly overloaded or reduced their assimilative capacity. Existing water quality data support the need to (1) focus nutrient abatement on agricultural livestock operations, cropland in the well drained Coastal Plain, and cropland in watersheds that have extensive agricultural drainage improvements as well as to (2) preserve swamp land (and limit agricultural drainage improvements) in small Coastal Plain watersheds to protect estuarine water quality.

State water quality standards for levels of algae (chlorophyll *a*) and dissolved oxygen are violated in the Chowan, Neuse, and Pamlico Rivers of coastal North Carolina. The designated use of these waters by the citizens of North Carolina (for the protection and propagation of indigenous aquatic life) has been impaired through accelerated eutrophication. Reduced sport and commercial fishing success, diseased fish, massive finfish and shellfish kills, fresh water intrusion, floating mats of noxious blue-green algae, and affected tourism and recreation industries are symptoms of the water quality problem that may worsen as agricultural nonpoint source pollutants continue to reach coastal waters – especially in the vicinity of rapidly expanding corporate "superfarms."

While scientists still cannot explain some of their observations associated with eutrophication problems (Golterman, 1979), enough is known about the overenrichment problem in coastal North Carolina to warrant an accelerated nutrient abatement program. These waters do not have sufficiently good quality water to support their classified best use, and agricultural nonpoint sources of nutrients are implicated as being much greater contributors of nutrients than municipal point source discharges. If common sense nutrient control practices are not implemented in short order, the state must be prepared to downgrade the designated uses of the waters to reflect their degraded water quality condition – an alternative indicating that the approved use of the waters is for "pollution disposal" rather than for the uses that citizens have been accustomed to.

ACKNOWLEDGMENTS

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Mr. ROE. Please proceed.

TESTIMONY OF MERILYN B. REEVES, NATURAL RESOURCES COORDINATOR AND SECOND VICE PRESIDENT, LEAGUE OF WOMEN VOTERS OF THE UNITED STATES; AND EBEN CHESEBROUGH, PRESIDENT, NORTH AMERICAN LAKE MANAGEMENT SOCIETY

Ms. REEVES. Thank you very much, Mr. Chairman.

I am Merilyn B. Reeves, second vice president and natural resources coordinator of the League of Women Voters of the United States. The members of our organization participate in the planning and publicly participate in activities involving water quality projects, and particularly the 208 projects that occurred across this country.

I am reminded perhaps that the diligence of our members on 208 might be comparable to the diligence of this committee in the hearing process today and on other days, and the thoroughness by which you are trying to seek out facts for some very difficult issues. On behalf of my organization, I would like to commend you for the very careful and thoughtful way you are doing this.

I will briefly summarize my basic points. I would like to begin by indicating to you that we recognize this is a very severe problem, and it is a difficult problem which you address. Our members have told us that the nonpoint pollution efforts are at a standstill. Our members know very well that State and local governments have identified the seriousness of the problem, both in urban as well as rural areas, and have also identified best management practices to begin to attack the problem, to begin to control this pollution. We believe that those elements of government now lack the stimulus that is badly needed and we believe a Congressional mandate will provide this stimulus.

Clearly, the chairman's bill, Representative Howard's bill, is one we can wholeheartedly support, and we are very pleased to see that Representative Oberstar's bill, H.R. 4037, has been introduced because it is a very, very commendable first step toward addressing the problem.

In looking at the nonpoint source problems, our members clearly understand how these problems differ from region to region, from an urban dirty street to the runoff from rural farmland. Farming practices that result in soil erosion vary depending on topography and climate; and the construction practices and the urban runoff patterns are regionally variable as well. We believe clearly that State and local units of government are in the best position to assess their problems and to develop the best management practices for their control.

Again, I must reiterate, we believe the experience over the last 10 years has shown that State or local governments cannot do this alone, and nonpoint source pollution problems are too severe to continue uncontrolled.

So we really believe it is time for the Federal Government to step in. We have a Federal investment which has been made and experience gained in the 208 program. We need to build on this. We need to mandate that all State and local governments address

the most serious pollution problems and we need to provide them with tools, give them access to tools and resources to help them to be successful in doing this. So, naturally, we support the incentives.

We believe it is time for the Federal Government to assure the cleanup efforts of one State or locality are not thwarted by poor conservation practices upstream. There has to be better coordination among the numerous Federal agencies and Congress has to set firm deadlines. Although we recognize that deadlines are not always met, we support amendments to set firm deadlines and to establish sanctions for failure to act.

In other words, we need to move from planning to implementation.

Beginning at the bottom of page 10 and going to page 14, I have some specific comments I would like to make in terms of some suggestions that we have and some support that we would like to offer to H.R. 4037.

We believe that the Congress must amend the Clean Water Act to create a program to implement controls on nonpoint source pollution. Representative Oberstar's bill, H.R. 4037, is a good beginning towards stemming the tide of pollutants from surface runoff, but it needs to be strengthened with firm deadlines backed up by sanctions to make the program enforceable. There are four elements of the Oberstar bill that with some adjustments, will constitute a workable cost-effective program:

The bill focuses the nonpoint control program on those water bodies with severe water pollution problems. It applies only to water bodies which fail to meet water quality standards or the goals of the Clean Water Act due to nonpoint source pollution—other areas would not be affected by the program.

There has been discussion today as to whether that should be a watershed, a watershed approach, or just what this should be.

We would like to remind you we believe that this is the responsibility of the local and State entities to define which this may be, and it may be a segment of a watershed or a watershed approach, or it may be a body of water.

The bill requires that management practices be set by the States, with the cooperation of local agencies and organizations. The information developed under section 208 would assist, but not constrain, the setting of management practices. The practices would originate at the local level rather than being imposed from Washington, D.C. We believe this is a very key element.

The bill provides monetary incentives to the States without making the duty to control pollution dependent on the availability of funds. The league supports the provision for providing 50-50 cost-sharing grants for State costs over and above what the State spent on nonpoint pollution controls in the 2 years prior to the enactment of the law.

The bill should be amended to make clear that the bulk of the money authorized will be targeted for program implementation rather than planning. The Federal Government has already committed millions of dollars to planning for planning's sake with the 208 program. The Oberstar amendment should put a cap on such future spending.

In addition, the league believes that the Oberstar bill should be amended to make clear that the major purpose of the Federal grants is to finance the administration of State control programs. The amount of funding provided is very limited and should not be spent to subsidize the actual installation or operation of best management practices. Also since the amount of funding authorized—up to $150 million—is so minimal, we oppose the special set-aside as provided in the Senate bill.

The bill includes a mechanism for the resolution of interstate water quality problems. The bill allows States to petition EPA to convene a management conference of all States which contribute nonpoint pollution to a water body. This section should be strengthened by requiring EPA to assume the responsibility for interstate coordination in the development of enforceable plans for nonpoint pollution control. Experience with past water quality management conferences has proven that the approach needs to be backed up by an enforcement mechanism such as sanctions or the ability of EPA to affect something after the conference is held.

I want to make it clear we participated through the sixties on the enforcement conferences, and we recognize this as a very important means of communication, but this has been many years ago and we are well beyond this now. We still need the means for communication, and we need that means of communication with some ability to be able to implement after the communication and to get on with the job at hand.

We believe there are four basic areas, other areas in which we would like to see some strength.

First, the bill should require that States implement management practices within 4 years after enactment. Firm deadlines are necessary to enforce action, and 4 years would provide adequate time for management practices to be put in place. We have chosen the 4 years because we believe it would provide adequate time for management practices to be put into place. A certain date for compliance is essential if the Nation is not to repeat the experience of waiting decades to achieve clean water. The date certain must be within the reauthorization period of the Clean Water Act if the Congress is to meaningfully review progress under the program when the Clean Water Act is next reauthorized

Second, we would like to have you consider that the bill should require Federal activities to conform to State best management practices. We recognize the bill does not require State plans to identify Federal programs and financial support for activities that are inconsistent with State nonpoint control plans. We believe that simple identification does not go far enough. The language of this section must be strengthened to make it clear that federally funded projects must be fully consistent with State plans and requirements for best management practices. Our members clearly believe that it makes no sense for the Federal Government to encourage or fund activities which will directly interfere with Federal water quality goals and State programs to achieve those goals.

Third, we believe the bill should require EPA to implement a nonpoint control program if the State fails to submit one. This key element is necessary to insure that national goals are achieved, and our members affirmed long ago the need for these national

goals that do not recognize State boundaries. Without backup Federal implementation, there is no assurance that State programs will be developed. This mechanism is incorporated in virtually every other Federal environmental program and has proven to be an effective incentive to prompt action.

Fourth, to make the program mandatory rather than voluntary, the bill must provide sanctions to deter the possibility of State inaction. The league recommends such measures as withholding construction grants and other Federal moneys from States that fail to implement controls on nonpoint sources. Control of point sources, such as sewage treatment plants, must be fully coordinated with the State's plan for addressing nonpoint sources. Construction grants and other Federal awards should be contingent on the implementation of control strategies for both categories of pollution sources—point and nonpoint—that are impeding progress toward meeting the Clean Water Act's goals.

With these four improvements—deadlines, Federal consistency, backup implementation, and sanctions—the Oberstar bill will make a fine complement to H.R. 3282, the Water Quality Renewal Act introduced by Representative Howard. The Howard bill makes many of the other changes we are seeking in the Clean Water Act.

We will support these and we urge your consideration for strengthening this. We believe the problem is severe enough for some severe action.

Thank you very much.

Mr. ROE. Thank you very much.

Mr. Chesebrough.

Mr. CHESEBROUGH. Thank you, Mr. Chairman and members of this distinguished subcommittee.

My name is Eben Chesebrough and I am president of the North American Lake Management Society, a national organization made up of citizens, scientists, lake associations, and water pollution control professionals who are concerned about poor water quality in our Nation's lakes.

We appreciate very much this opportunity to share with you our concerns.

I would like to add I also represent and speak on behalf of Massachusetts and the New England Association of Environmental Biologists, all of whom support our position.

My comments today address the bill introduced by Mr. Howard relative to the reauthorization of the Clean Water Act, and the bill introduced by Mr. Oberstar relative to amending the Clean Water Act for the purpose of addressing nonpoint source pollution.

My comments will be brief, and I refer you to our comprehensive statement for specific information in support of documentation.

I would like to begin by highlighting the result of a nationwide survey our organization conducted this past summer. In this survey, 38 States responded with a grim assessment of our lake water quality. More than 4,200 lakes were declared impaired due to pollution, and 4 million acres of lakes and impoundments were declared in worse shape than when a similar survey was conducted 10 years ago. Ten years ago, there were found to be seven lakes contaminated by toxics. The 38 States responding to our survey indicated we now have 120 lakes contaminated with toxics, and

12,000 lakes were reported by the States to suffer from nuisance growth of algae and weeds, impairing public recreation. Estuaries such as Chesapeake Bay are now getting attention through their nutrient and pollution overloads, but we must not forget the thousands of lakes suffering a similar fate.

The society supports H.R. 3282 introduced by Mr. Howard as an effective measure to address lake pollution.

We specifically applaud Mr. Howard for including a $30 million authorization for section 314 of the clean lakes program. Although the amount is rather small, it is an immensely popular program.

We also applaud the provision to strengthen wetlands protection. Our wetlands play an important role in protecting lakes and estuaries.

Section 9 of Mr. Howard's bill establishes an estuary protection program which includes the development of water quality standards applicable to estuaries. The society feels our Nation's lakes also need a system of water quality standards.

In my own State of Massachusetts, we have numerical standards for rivers and streams but none for lakes.

Such a system would be valuable for prioritizing our efforts for effectuating control through our State's clean lake program.

In our prepared statement, we propose amending section 303 of the Act to provide a congressional mandate for the State's adoption of water quality standards appropriate to protect lakes. We feel this to be a constructive and positive step in protecting and enhancing the protection of our lakes. Quite clearly, an ounce of protection is worth a pound of restoration. Water quality standards would certainly help in this regard.

The second major topic I would like to address here is the subject of nonpoint source pollution. All but one of the 38 States responding to the State survey stated that nonpoint source pollution was seriously affecting their lakes and reservoirs.

As manager of the Massachusetts clean lakes program, I can honestly state nonpoint sources of sediments and nutrients are the principal factors affecting our lakes. We believe that a strong national nonpoint abatement program is needed to control the serious damage that is occurring to our Nation's waters.

States and the EPA know where and why this damage is occurring. Our statement provides specific documentation on the economic damage of lakes caused by nonpoint sources.

Numerous scientific studies have shown the best management practices can be effective in controlling inputs from agriculture, mining, urban runoff, forestry, construction, septic systems, and the like. Our statement provides specific information on where and how BMP's have worked to protect water quality. Let me mention a few examples.

In Tennessee, conservation tillage reduced soil loss by 90 percent, and saved farmers 95 percent fuel costs, and provided higher yields.

In North Carolina, soil conservation practices were implemented in a watershed, and sediment loss was reduced 99 percent and nitrogen and phosphorous loss was reduced 90 percent.

In Minnesota, use of buffer strips reduced solids and nutrients from animal feed lots by greater than 75 percent. Use of biological

filters downstream of cropland in Florida reduced nutrient loads by greater than 70 percent.

BMP's reduced suspended solids by 70 percent, nutrients by 50 percent, heavy metals by 70 percent. That data is supported by many studies documented in our written statement.

Nationwide, you have heard the Conservation Foundation estimate that $3 billion damages caused by soil erosion and sedimentation annually. Almost three-quarters of it is from agricultural land.

Among other things, I am also a farmer, albeit a small one. I till some 48 acres in Massachusetts, into hay and feed corn. I personally understand and appreciate the diverse problems facing the agricultural community.

In New England, you have to look for the soil under the rocks. Once you find it and till it, by God you don't want to lose it.

The North American Lake Management Society supports Mr. Oberstar's bill, H.R. 4037, with some qualifications. Like Mr. Oberstar, we believe it has a reasonable chance of passage, and it will provide some good to a limited number of lakes.

Our statement recommends a priority area implementation plan for achieving cost-effective use of public funds and for restoring suitable water quality to support designated uses.

First, we recommend that accent be placed on attaining standards and achieving designated uses because abatement of only some nonpoint pollution without achieving water quality controls is not cost effective. This would add accountability to those receiving public funds.

Second, we recommend the specific implementation plans with milestone schedules for achiving standards and uses be prepared for each watershed area, with priority nonpoint problems.

Then, each of these plans would become part of the entire State plan under 319(b). This would allow the more efficient use of limited resources, and would be essential to achieve standards and designated uses.

Third, we feel that there should be a deadline for implementation of BMP's to assure cost-effective expenditure of the public funds. We recommend 6 years as a workable deadline for each priority watershed area.

Fourth, in order to be consistent with other environmental legislation enacted by Congress, we feel there must be an element of Federal oversight.

We recommend that the Administrator of EPA be authorized to take steps to insure implementation of plans in negligent States.

Finally, on the important subject of interstate waters, we feel that the bill's approach can be strengthened and improved.

We recommend a Federal master plan be developed in a manner similar to the concept in Mr. Howard's bill for estuaries.

Specific plans with specific schedules, coupled with EPA oversight, are needed if interstate pollution problems are to be remedied.

In summary, nonpoint source pollution is the major cause for degradation of our lakes.

As a State program manager and president of this society, I constantly meet and talk with the public, I can assure you that clean lakes is a very dear and important issue with them.

We appreciate the opportunity to speak before you.

Thank you.

Mr. ROE. We want to thank you both for your excellent testimony. We have learned a lot today in listening to the dialog.

One point that has been going through my mind is that both of you have talked to the issue of sanctions, sort of like the carrot and the stick, when we talk about strong Federal leadership. I think Federal leadership has been strong in developing the legislative process since 1972, albeit there was programing before that as to point source sewage grants that were involved.

I think you are right, Ms. Reeves. If you are going to do anything, it has to be mandated. Many States are not going to get into sanctions, in the first place, and that will change the entire interstate relationship. That is No. 1.

No. 2, if you were to mandate, you could bonus the issue for someone's expediting their program. We found that to be partially effective in the public works program a couple of years ago, versus the point of reducing or mandating a proportionate share of the State money has to go toward the implementation of management programs and nonpoint discharge.

What do you think of that—literally mandating it?

Ms. REEVES. We believe the problem is very serious. We testified on the Senate side that one such step is cross compliance, and we recognize the political reality of such a program. We recognize the severity of it, but we also believe we need to talk about this, and we need to talk about what kind of sanctions might work. Bonuses might work, but there still need to be a bottom line, and you still have to mandate.

We believe we are at the point to implement. To implement means you are just beyond planning. Now you are into the implementation stage and there has to be equity across this country, and I think the eloquent testimony that came from the State of Wisconsin described that very well, and again, that is part of the sanctions.

I do not know if I answered your question.

Mr. ROE. Bonusing is where someone reaches out for the bonus. If it is a political problem, they could lose money because they did not participate.

Ms. REEVES. Both elements could be used, but we addressed sanctions.

Mr. ROE. I get letters sometimes from the voters of my own State which sometimes exasperate me. So I would hope you would tell your representatives out there what we are doing here.

Ms. REEVES. I will call her up and tell her how helpful you have been.

Mr. ROE. In thinking about next year, I have to be realistic.

I participated from the very beginning in this program. It is all well and good.

Mr. OBERSTAR. If the chairman will yield, I must excuse myself. I have to go to the Rules Committee to testify.

I wanted to express my appreciation to the witnesses for the very thorough analysis they have given to this legislation which is pending, and to my bill.

Mr. ROE. Do not take anything away from public works.

This is what I am trying to get at. In my judgment, the reason that some of our legislative proposals have failed, or have not been as productive as they could or should have been, is because Congress did not speak adroitly enough to the issues. It could be that Congress did not know how to speak to the issues, and maybe no one else did in 1972. But we do have, and both of you expressed in your testimony that we do now have an extraordinary wealth of information. None of us is going into this blind.

I admire when you said put a ceiling on any more planning. We have planned until we are green in the face, the same as with our clean lakes program.

Having said that, I can see a lot of fine tuning that is needed to the language now to achieve the goals. Both of you said we are not just looking for language euphemisms and philosophy now. We are looking for specific language that is going to tell people, including the agencies that are supposed to do the administrating, to do specific things.

Do you think that we should be that firm?

Mr. CHESEBROUGH. I do, yes, sir. I think it is time to get on with it.

Ms. REEVES. We clearly recognize the difficulty, and our members are very supportive of this approach as best they possibly can be, in notifying our members of Congress that this is how we feel.

We also feel the opinion polls continue to show us the American public is now behind any effort, so there needs to be a message sent there, that the American public is interested and clearly sanctions indicate a firmness, and indicate a resolve, and we believe the Congressional mandate is very important.

Mr. ROE. You both also used time elements. You were dealing with time elements, and I notice you smiled when one of you talked about 4 years, and one of you talked about 6 years. That gives rise to a point that we have been able to keep the heat on this issue, because the authorization periods were relatively short.

Now, I am wondering if we should consider as part of the dynamics that we need now to take the next steps that have to be taken if, instead of authorizing a 3-year bill, only authorize a 2-year bill.

Think about that a moment before you respond.

Ms. REEVES. I would have to think about it, because I am cognizant of the length of time for startup, and I am sympathetic with too short a deadline under which things do not get underway.

The Government works very slowly, and it trickles down, and State governments face many problems now.

Mr. ROE. If you understand the process—and I am just asking because sometimes we shut ourselves out of the process by longer authorizations—there have been many issues that have been included in the original legislation. And even amendments, through the appropriations process, which have not been implemented. We were set back a year and a half in the EPA shakeup, and it did not give us a chance to address that so that we could move faster.

I want to get it down, however, so that we can get it done.

The gentleman from Minnesota.

Mr. STANGELAND. Thank you very much, Mr. Chairman.

I think you will find a great deal of support on this committee for the clean lakes program, realizing it is not all as we would like it to be.

Support was evidenced by the chairman's efforts on behalf of the clean lakes earlier this year, when we had the appropriations bill on the floor. I think you should be commended for that.

Mr. CHESEBROUGH. I was working on that yesterday, Mr. Chairman.

Mr. STANGELAND. In Wisconsin, I have been concerned about the clean lakes program.

Do you feel we need to have more implementation, rather than identification of study?

Mr. CHESEBROUGH. The diagnostic feasibility study has to remain, and be an integral part of a complete project. What is important is the monitoring of the implementation project so we have a clear understanding of the various technologies now being used to clean up these lakes.

Mr. ROE. If the gentleman will yield, we have been trying to convince—here we go again—those in the decisionmaking process—the connotation that a clean lake is the figment of someone's imagination, vis-a-vis use for boating and swimming. We are trying to say that is a totally erroneous point of view, that the lakes are an integral part of the water supply system, and should be treated as such.

Do not fall off the chair at this point.

Suppose we should speak to the lakes per se as being points of pollution, and should be considered point sources of pollution.

In view of the long length of testimony we have received, not only today, but the last couple of weeks, saying that because of watershed runoffs, and runoff from river basin systems, become basins of concentrations of pollution, if we want to call sedimentation pollution.

I am wondering if we want to treat them with an equal relationship to any grant funds that come back for cleaning up these areas. Not as a third finger on the left hand way out here to make the decision. Yes, we will placate the lakes, because the boaters live on the lakes, we use them for recreational purposes, and it is popular, and we will give them $150 million to solve a $2 million problem. That is total nonsense versus the point of view saying, OK, we have forced the concentration of materials into those lakes by the processes that took place. However they took place, as is the case of concentrating domestic or industrial sewage.

If we are going to deal with that, we should deal with it as a point source of pollution.

Mr. CHESEBROUGH. It is an interesting point. I believe there was, recently, within the past year, a court case in this district concerning reservoirs and their discharge that addressed that, whether it is nonpoint or point.

Mr. ROE. That was the dam structure issue.

Mr. CHESEBROUGH. As I understand the ruling, they declared it an ongoing source.

Mr. ROE. Because that is something the courts determined. If they declared it to be a concentration in lakes, what would you think about that?

Mr. CHESEBROUGH. Yes, if I may comment on lakes being entire integral water supply. That argument held a lot of weight with our legislative endeavors prior to the passage of our clean lakes program.

We were providing for future water when the groundwater is hard to get at.

Mr. STANGELAND. To the extent that total pollution comes from nonpoint sources, do you have any information that shows to what extent lake pollution problems come from point and nonpoint?

I am looking at lakes up in my area, in northwest Minnesota. It would seem that, for many if not most of them, the primary type of pollution would be more point pollution than nonpoint.

I think of Coronis at Paynesville. The bulk of the pollution is from wastewater treatment facilities, septic tanks, and that has been a problem in Minnesota.

We have a zoning law forcing septic tanks back where you have a high concentration.

Do you have any information which would show what percent of the pollution problems are point, and which are nonpoint?

Mr. CHESEBROUGH. I do not have specific figures available at this time, but I would certainly be very happy to provide this committee with data pertinent to that.

Are these river impoundments, or bona fide lakes, in your area?

Mr. STANGELAND. They are bona fide natural lakes.

Mr. CHESEBROUGH. It is the reverse in Massachusetts. All of the pollution is in the brooks, streams, and rivers.

Mr. STANGELAND. I have just one last question.

In Mr. Ruckelshaus' testimony, he felt that the voluntary action would be a disincentive. Could you comment on that?

Mr. CHESEBROUGH. In my experience, it would be the reverse. There would be an aggressive interest taken on.

Mr. STANGELAND. I guess his point was people would wait in line before they would get going.

Mr. CHESEBROUGH. No. I think they would get their thoughts going and hustle.

Ms. REEVES. I would like to also indicate that it is our experience when we look at the long history particularly with respect to pollution control on water and considering the construction grants program, while it has received much criticism as a massive incentive program to clean up, we believe there has been a tremendous amount of water cleanup success. We attribute this to the incentive the Federal Government has given, and we do believe in the carrot and the stick approach, and the carrot is the incentive.

The other aspect I would like to point out is that if, in fact, this Congress mandates a nonpoint pollution program and you gear up for it, I believe we have individuals who will work very diligently on the 208 on the public participation programs, and they will have no anticipation of letting their States sit idly by but will want to immediately gear up.

Mr. STANGELAND. Thank you very much for your extensive testimony and the contribution you have made to this hearing.

Mr. ROE. Again I want to echo those statements of our distinguished member from Minnesota. We appreciate you taking the

time to be here today and we will be calling upon you to do some spade work in some other areas.

Mr. CHESEBROUGH. We would be more than willing to do so.

Mr. ROE. Our next two witnesses are Mr. Les Coy, chairman of the National Cattlemen's Association 208 Water Quality Subcommittee, and Mr. Bruce Hawley, assistant director of the Washington office of the American Farm Bureau Federation.

If there is no objection, your statements will be placed in full in the record and we invite you to summarize.

[Statements referred to follow:]

STATEMENT OF THE NATIONAL CATTLEMEN'S ASSOCIATION,[1] BY LES COY, CHAIRMAN

Mr. Chairman, Members of the Committee: My name is Les Coy. I am a farmer and cattle feeder from Iowa. I currently am in my second year as chairman of the National Cattlemen's Association (NCA) 208 Water Quality Subcomittee, as well as serving on NCA's Private Lands and Water Committee. In addition, I am a chairman of the Public Lands, Private Lands and Water Committee of the Iowa Cattlemen's Association.

The National Cattlemen's Association and I want to compliment this subcommittee for holding these hearings. It is reassuring to know that you, like us, are vitally interested in controlling nonpoint source pollution. Congressional hearings such as this provide an opportunity for all interested groups to consciously and constructively work together to solve our problems related to nonpoint source pollution. We are exteremly pleased to have a part in these hearings and we trust that our thoughts and ideas will merit your earnest consideration. Our comments will relate to the cropland management practices of cattle feeders and producers and the grazing land management practices of producers.

The National Cattlemens Association recognizes the need and desirability of improving, maintaining and protecting our nation's land and water from erosion and sedimentation. It is further recognized that agricultural nonpoint source pollution does exist and a nonpoint source program is needed. We believe that such a program for agriculatural lands should have the following principles in mind:

1. Nonpoint sources of pollution cannot always be corrected in a one-time cleanup operation.

2. Agriculture nonpoint source pollution may be improved, but is a problem that will exist into infinity because of ever changing variables. Adverse weather causes a fluctuation on pollution levels. Even with implementation of best management practices, adverse weather may cause excessive pollution for a period of time.

3. To maintain satisfactory levels of pollution control continuous funding and technical assistance will be required.

4. Members of the ranching and farming industries have been voluntarily carrying out the best management practives for many years to improve the quality of the nation's environment. Continued efforts need to encourage the continued use of these best management practices. As of this date, past and current research is and has been adequate to scientifically evaluate and provide concrete data relative to needs of providing sound guidance on the many facets related to nonpoint source pollution.

5. Generally, unconfined livestock operations are very compatible with a high-quality environment. However, there is a potential for problems where vegetation is excessively grazed, excess and undesirable wooky species have invaded, and in areas where animals tend to concentrate.

6. The cornerstone of our nation's conservation efforts related to water quality has been successful under a flexible voluntary program. The NCA desires that policies and programs related to agricultural nonpoint source pollution be kept and carried out through a voluntary approach.

The nation's ranching and farming industries have been consistent supporters and active participants in helping to control nonpoint source water pollution on agricultural lands. The conservation measures that ranchers and farmers have and

[1] The National Cattlemen's Association is the national spokesman for all segments of the nation's beef cattle industry—including cattle breeders, producers, and feeders. The NCA represents approximately 245,000 professional cattlemen throughout the country. Membership includes individual members as well as 50 affiliated state cattle associations and 19 affiliated national breed organizations.

are carrying out have not only improved their own resources, but enhanced fish and wildlife habitat, erosion control, and improved both water quantity and quality. We have often been disappointed that the public benefits from private conservation efforts are overlooked. Out interest in and dedication to controlling nonpoint source pollution are rooted in moral, economic, and ecological reasons.

We fully recognize that our nation's number one pollutant, silt and sediment, results from past land abuse or current neglect. Our industry largely depends upon forages and grasses grown on cropland, rangeland, and forestland, all of which are soil conserving land uses. However, overgrazing of these lands for prolonged periods reduces the quantity and quality of protective plant cover, leaving the soil surface bare. This exposed soil is then at the mercy of nature's erosive processes. Not only is precious topsoil lost, but the soil that is washed away also carries with it nutrients, pesticides, salts, and other potential pollutants. As stewards of nearly 61 percent of the land area of the United States, cattlemen feel a moral obligation to care for this land which is vital to mankind's existence now and which is essential for the sustenance of future generations of Americans. We view conservation of our soil, water, plant and wildlife resources as a never-ending task.

The conservation of our natural resources is inseparably linked to our efforts to control nonpoint source pollution. You simply cannot have one without the other. Each farmer and rancher is a practicing ecologist who employes knowledge of the interaction of soil, plants, water and animals (including wildlife) in managing this land for its maintenance and perpetuation and for a sustained economic return from his investment.

America's animal agriculture is anchored in thousands of small, family business operations across this great land, and continues to serve as an impetus for economic productivity. Every livestock farm and ranch is a dynamic ecosystem and economic system. Our work toward achieving nonpoint water pollution control has kept these principles in mind.

Earlier I pointed out that cattlemen are stewards of nearly 61 percent of the land area in the United States. Much of this is rangeland that can only produce crops for grazing. However, cattlemen also manage a sizable portion of the land in many major crop producing areas. A typical cattle operation in a crop producing region also has pasture and forage acres. These cattlemen do not plant every available acre to row crops. They rotate their crops and use their more erodable acres for pasture and hay production to produce feedstuffs for their cattle. This contributes significantly to improved soil conservation in these areas. This is done voluntarily by the cattlemen and is in the best interests of us all. Current federal farm programs have discouraged the continuation of these practices. The federal government needs to analyze the impact of their programs and be sure that producers are not paid to discontinue sound soil conservation practices.

Other natural occuring obstacles contribute to nonpoint source pollution in grazing regions of the United States. Noxious woody plants known as brush, compete directly with desirable plants which cover the ground. The result of this competition is bare ground and resultant erosion. The established brush also utilizes water that could go to recharge underground aquifers. Thus, the result of heavy brush densities is accelerated erosion, reduced water quality and a reduced supply of clean water. Our best estimate is that more than 100,000,000 acres of grazing lands in the United States need brush management applied to control the nonpoint source pollution problem. At today's prices, the cost of reducing the density of brush on these acres would cost between $4 billion and $6 billion depending upon the methods of control required. A recent report issued by the Office of Technology Assessment cautions that brush encroachment and invasion poses a major long-term threat to range productivity in addition to increasing nonpoint source pollution.

The cost of controlling excessive brush has skyrocketed in recent years. Both chemical and mechanical brush control methods in Texas and the southwestern rangelands have increased six to tendold in the past few years. We believe that integrated brush management systems which employ combinations of brush control methods including mechanical means and environmentally safe chemicals offer the most cost-effective approach to solving our U.S. brush problem, and resultant environmental degradation.

The approach we have found to be most successful in implementing nonpoint source control programs is founded upon a voluntary approach with educational and technical assistance and where needed, financial assistance. This assistance is made available through locally-elected and governed soil and water conservation districts. Water pollution abatement plans are developed with individual landowners within the framework of a comprehensive soil and water conservation plan for each farm or ranch in the district. Full landowner involvement in this on-the-land planning

process helps insure the full implementation of the plan. The plan thus developed with the landowner and not for him is one which he supports and is committed to carrying out on a voluntary basis.

We believe the results speak for themselves and reflect the success of this approach. As an example in Texas data supplied by the Texas State Soil and Water Conservation Board shows an upward trend in land adequately treated since that agency developed its statewide control strategy for agricultural nonpoint source pollution.

LAND ADEQUATELY TREATED ANNUALLY IN TEXAS

Year:	*Acres (millions)*
1979	9.4
1982	10.7

In Iowa the Soil Conservation Service reports that out of 22 million crop acres, 16 million control soil erosion by having crop residue left on the soil surface. The following tillage practices in Iowa are compared in 1980 and 1983 in the following table:

	1980	1983
Conservation tillage:		
Number of farms	38,000	48,000
Acres (million)	5.5	6.5
No-till:		
Number of farms	1,400	5,500
Acres	110,000	420,000
Initial acres affected by terracing	40,000	89,000

It is noteworthy that these accomplishments have been made in spite of reduced technical and financial assistance and severely depressed prices for agricultural products.

Our industry has also taken a major initiative to inform all of our members on steps to take in achieving water pollution control from point and nonpoint sources through a publication entitled "A Cattlemen's Guide to Water Pollution Control and 208 Water Quality Planning." Mr. Chairman, I am submitting a copy of this guide developed by the National Cattlemen's Association for the record. We are also submitting for the record an article which recently appeared in the Ranch magazine which illustrates the success of a range management program in Texas.

The purpose of a nonpoint source pollution program should be to improve both quality and quantity of water. When such a program is implemented, the result is more clean, clear water for municipal, industrial, agricultural, wildlife, and aquatic uses. Water quality means many things to many people, but seldom is the term well defined. Water, and especially good water, is taken for granted perhaps because water is so abundant on our planet. However, the ranching and farming industries know the value of good, clean water since water is typically in short supply on our nation's grazing lands. Our livestock and our families depend on a continuous supply of water of the highest quality. As scarce as our water supply is, its useable quantity must be increased and pollution reduced or maintained at an acceptable level. Water is our survival.

NCA RECOMMENDATIONS

1. The National Cattlemen's Association supports the need for a nonpoint source pollution control program to improve water quality and quantity and to conserve our natural resource base.

2. The cornerstone of our nation's successful environmental and conservation efforts related to water quality has been a voluntary program carried out through nearly 3,000 locally-governed soil and water conservation districts. The NCA desires that policies and programs related to agricultural nonpoint source pollution be kept and carried out through a voluntary approach. Existing agencies and structural arrangements should be utilized for program implementation. As an example, use soil and water conservation districts with assistance provided by the Soil Conservation Service, Cooperative Extension Service, Agricultural Stabilization and Conservation Service, U.S. Forest Service, and cooperative research agencies and institutions.

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3. The Clean Water Act amendment relating to a nonpoint source pollution control program should be so structured as to address nonpoint source pollution of agricultural lands in one section and nonpoint source pollution of nonagricultural lands in another. The problems and treatments of these two uses of land are generally nonrelated.

4. A provision for demonstration projects on small hydrologic units (50,000 acres or less) should be included in the nonpoint source control program on agricultural lands. Education and technical assistance should be provided through local soil and water conservation districts.

5. Research studies to identify and quantify the movement and fate of pollutants on agricultural lands under different resource management systems and to test the economic viability of different best management practices should be authorized in any program to control nonpoint source pollution. Whenever possible these studies should be carried out on a small watershed area (100,000-300,000 acres in size).

6. If the private sector implements a sound nonpoint source pollution program the federal agencies responsible for federal lands should also implement a sound nonpoint source pollution program. We believe the lessee of federal lands should be permitted to carry out sound nonpoint source pollution programs.

7. Re-define the criteria for making grants to states to also include acreage needing treatment on a watershed basis.

8. Any funds for this program should be new funds. Funds should not be taken away from existing programs that don't have enough funds or technical personnel to carry out programs that are now directly improving nonpoint source pollution.

9. We believe it is important to utilize already established terminology in the nonpoint source control program. For example, "best management practices" is a commonly understood term and should be retained.

10. Consider funding the Rural Clean Water Program authorized in the 1977 amendments to the Federal Water Pollution Control Act.

11. Consideration must be given to increasing useable water quantity—not just quality alone.

Rocky Creek Lives

(By Mark Mosely, Range Conservationist, U.S. Department of Agriculture, San Angelo, Tex.)

A West Texas creek, dry for decades, has started flowing again and residents of nearby San Angelo, Texas, can thank ranchers and their conservation work in a 74,000-acre watershed.

In the early 1960s landowners on five ranches, covering about half the watershed, began rootplowing, reseeding, treedozing, aerial spraying and chaining. The ranchers received technical assistance and cost-sharing for the work through the Great Plains Conservation Program. The program is administered through the local Soil and Water Conservation Districts in selected Great Plains counties by USDA's Soil Conservation Service. The ranchers did not start out to prove anything—it just happened.

West Rocky Creek flowed yearlong until the drought of 1918-1919, when it became an intermittent stream. By 1935, springs feeding the creek has been dried up by mesquite and other invading woody plants.

Located in the Edwards Plateau region, West Rocky Creek is a tributary of the Middle Concho and about 20 miles west of San Angelo. Average annual precipitation is about 18 inches. Shallow soils formed over limestone and caliche are characteristic of the plateau regions, and early day travelers described the rough, rolling hills as barren. The only timber was along the draws and the need for firewood was a real concern to these pioneers.

Before the area was settled, prairie fires were common—set naturally by thunderstorms and also by Indians. Early travelers reported seeing prairie fires that would burn for miles prior to being extinguished by either a lack of fuel or by rainfall. Fires suppressed the brush. As the early pioneers began to fence the rangeland, several things triggered. Their apparent lack of understanding about grazing management depleted the cover of prairie grass such as sideoats gramma, the state grass of Texas. In pristine condition, most of the watershed supported a plant cover averaging 2,000 pounds of production per acre—mostly grasses.

Settling of the land stopped the wildfire for two reasons—one—they fought the wildfires and—two—there was no longer enough grass to burn. This lack of ground cover allowed erosion to take place and held little water on the land. Not only did

the reduced ground cover short circuit the aquifer recharge cycle but it provided a favorable environment for the establishment of brush plants. The brush first encroached the deeper soils and then gradually moved up the draws to the hillsides. The watershed now would support only about 500 pounds per acre of protective grasses.

Mesquite was the main brush problem. With its extensive root system it can draw water from far below the five foot depth that is generally the limit for native grasses such as sideoats gramma, buffalo grass, curly mesquite and tobosa. Its thirst for water is much greater than that of the native grasses. In fact, it takes about 1,725 pounds of water to grow a pound of mesquite but only 705 pounds of water to grow a pound of sideoats gramma. It is interesting to note that scientists estimate that 38 percent of the rainfall in Texas is used up by non-economic plants. This equates to about 138 million acre feet per year.

In 1964, following the accelerated range conservation program, one of the five ranchers noticed that a spring—dry since 1935—had started flowing again. By replacing the water hungry brush with a good grass cover, more rainfall soaked into the aquifer, recharging the dormant springs. By 1970, springs had begun flowing on all five ranches. West Rocky Creek, which now flows at a rate of 475 to 4,000 gallons per minute is not big by most standards but its sparkling waters are a welcome sight in this part of Texas. All the conservation work was done in a manner that would benefit whitetailed deer and turkey—a valuable hunting resource.

The role of sound grazing management cannot be overlooked. The ongoing grazing management on each ranch enhances the cover of grasses on the watershed. The soils now, under good grazing management, are producing an estimated 2,000–2,500 pounds of forage per acre—still mostly grasses.

This grass cover retards the re-invasion of brush and helps hold water and soil on the land. The turf decreases the sediment load in surface water supplies. Sediments reduce water quality and the storage capacity of reservoirs and streams. Although the brush succession is retarded, these ranchers periodically must do maintenance brush work just to keep things in the desired balance.

Even though the rangeland improvements have reduced erosion in the watershed and increased forage production for the ranchers' livestock, the story of West Rocky Creek may be more important to the 70,000 residents of San Angelo. Water from the creek supplements the city's water supply reservoirs. Currently, water in San Angelo homes costs $3.05 for the first 2,000 gallons and 67 cents for each 1,000 gallons thereafter. The West Rocky Creek Watershed yields an estimated 525,600 gallons annually. If water costs are calculated at $1.50 per 1,000 gallons, the West Rocky Creek Watershed yields $788,400 of clear water annually. In other words, each acre of West Rocky Creek Watershed yields approximately $10.63 worth of water annually.

West Rocky Creek now contributes approximately seven percent of San Angelo's total water needs. Its watershed occupies three percent of the entire watershed that supports the municipal and recreation supplies of San Angelo.

If the West Rocky Creed treatment were expanded to the entire watershed above San Angelo, one could predict a long lasting supply of clear water, increased livestock and wildlife production and decreased sedimentation of downstream water supplies.

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A CATTLEMAN'S GUIDE

to

WATER POLLUTION CONTROL

&

208 WATER QUALITY PLANNING

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FOREWORD

The National Cattlemen's Association (NCA) is interested in the improvement of the nation's waters as are most U. S. citizens.

The nation's concern for water quality improvement was brought to focus when Public Law 92-500, the Federal Water Pollution Control Act (FWPCA) Amendments of 1972, was passed by Congress. Several sections of that legislation directly or indirectly related to the nation's farms and ranches. Sections 208 and 402 on nonpoint and point sources of pollution and the Section 404 dredged and fill permit program have the most potential impact on cattlemen. The FWPCA was extended by the Clean Water Act of 1977.

This guide has been prepared to explain how these sections affect cattlemen and to offer some suggestions on what cattlemen can do to help the nation meet its water quality goals.

Cattlemen as conservationists are interested in the soil and water resources. They are interested in improving the quality of life for them and their neighbors. Many have voluntarily joined in the nation's program for water quality improvement. Today, livestock operators have a high level of compliance with the state and federal water pollution programs. I am pleased with this record.

The need to increase world food production makes it most urgent that we all cooperate: cattlemen, environmentalists, government officials, researchers, educators, land managers and the general public. Together we can solve ranch management and environmental issues for the benefit of all mankind.

The 208 Water Quality Subcommittee of NCA's Environmental Management Committee had the responsibility for developing and publishing the guide and I want to express my special thanks to Committee Chairman Bob Bliss and Subcommittee Chairman Walter LeFevre.

J. W. Swan
President
National Cattlemen's Association

INTRODUCTION

Many water quality laws and programs apply to ranching and feedlot operations and this guide is written to explain: (1) how these laws and the water quality management programs might affect you; (2) where you can go to get more information; (3) how you can avoid causing water pollution; and (4) ways you can participate in water pollution decisions affecting your operations. Forms you can use to evaluate your present operations and to plan your future efforts are also provided.

What water pollutants might arise from your ranching or feedlot operations? The experts have identified six major pollutants that might result from agricultural activities: (1) sediment, (2) nutrients, (3) salts, (4) pesticides and herbicides, (5) organic materials, and (6) disease-producing organisms (pathogens). Some examples of pollution: rain washing fertilizers, pesticides or topsoil into streams, rivers or lakes; animal wastes from feedlots spilling into a waterway; irrigation return flows that carry pollutants. These problems, and what you can do to prevent them, are discussed in this guide.

Although the major national law in water pollution control mandates an unprecedented public role in the

development and enforcement of water pollution programs there has been relatively little informed public participation in the decision-making processes. This is understandable because with the maze of ever-changing laws and regulations (federal, state and local), the plethora of public hearings and conferences, and the tendency to overuse technical jargon, only those who have closely studied and followed these programs could begin to understand the implications of these programs. For that matter, even the experts are confused at times because the basic laws and policies are not all that clear and there are uncertain purposes and responsibilities in the programs.

It is unwise, however, for cattlemen to let this built-in confusion and complexity discourage them from expressing their views in the public participation process. The issues are too important to you to let them remain the providence of the so-called experts.

Actually, you have the expertise that most of these pollution experts don't have: an intimate knowledge of your business and what is feasible or practical as far as your operations are concerned.

This booklet will not make you an expert in water pollution control programs or clarify all the confusion. It is intended as a

basic guide, or starting point, for cattlemen who want to better understand current water quality programs and their impact on cattle raising and feeding. It is an outline of the basics and an explanation of some of the specialized terms that are often used in connection with water quality programs.

It is important for cattlemen to become more aware of water quality programs and issues because we are entering an era of increased attention to the effect of agricultural activities on water quality. As pollution from industries and municipalities are being alleviated, more questions are being asked about what can be done to identify and control pollution from agricultural, forestry and mining activities. These questions also are being prompted because the states are now deeply involved in the areawide planning processes called for in Section 208 of the 1972 Federal Water Pollution Control Act (FWPCA), which, among other things, must consider actions to reduce pollution from agricultural activities. This areawide planning process offers the most potential for public participation and it is crucial for agricultural interests to be represented if they wish their viewpoints and concerns to be adequately considered.

As a matter of fact, the impetus for this booklet arose from the perceived need for cattlemen to better understand this planning process. It was later decided to expand the scope of the booklet to other water quality provisions and programs affecting cattlemen, especially since this would help explain the areawide planning process by placing it in context with these other programs.

HISTORY OF WATER POLLUTION PROGRAMS

Some historical perspective is helpful in understanding today's water pollution programs.

In the early days of this country, America's interest in its waters focused on its use. We were more interested in water quantity than quality. Early legislation dealt with how our waters were to be used for navigation, power, agriculture, recreation, industrial processes and home supplies. We were concerned about water shortgages and water surplus, i.e., floods.

In the past few decades, however, more and more people became concerned that human activities were causing undesirable elements to enter the nation's waters jeopardizing some water uses and perhaps even causing health hazards. One of the first water pollution laws was the Refuse Act of 1899 which outlawed the discharge of pollutants other than municipal sewage into navigable

waters without a permit from the Army Corps of Engineers which, while ostensibly a military branch, had begun to take jurisdiction over navigation and flood control projects on such waters. (In 1970, President Nixon used that 1899 law to greatly expand the requirement to obtain a permit before discharges into waters could be made. This extension was based on a broader definition of what constituted "navigable waters.")

It was not until the 1950's however, that water pollution control, or water quality, became more important politically than water development. Congress responded to the increasing public concern over water pollution by passing several laws which increased federal funds for construction of waste treatment plants and sewers and which required states to establish so-called water quality standards for their interstate waters, meaning that the states were to decide what pollutants must be abated to support a chosen water use and were to draw up a plan for achieving that end. If a state didn't do this, or its standards weren't acceptable to the Federal agency, the Federal agency was to step in and set federal standards.

Development of these standards, however, engendered bitter disputes and controversies over what they should be, how the standards should be enforced, what were water "pollutants," and how "clean" must our water be. Although it became clear by the end of the 1970's that considerably more scientific and eco-

nomic knowledge was necessary to determine what could be done to clean up our waters, this did not deter public interest and public demands that "something be done."

Congress responded - as it usually does when there is public interest - by enacting another bill: the Federal Water Pollution Control Act of 1972 (FWPCA), the most sweeping Federal law on water pollution to date. This Act builds on and "strengthens" past anti-pollution laws. Despite is many provisions, however, this Act does not lay out a precise roadmap of how "clean water" will be achieved. Rather, its approach is to establish some goals and general procedures, with the details to be worked out later by federal, state and local agencies and by legislative refinement at a later date. (The Act's unclear language has led to a number of court decisions regarding the meaning of certain sections.)

The provisions in the law of most interest to cattlemen are reviewed in this guide.

WATER QUALITY GOALS

The overall "objective" and the two "goals" established in the Water Pollution Control Act of 1972 are important because they influence or "drive" the development of programs and policies to curb water pollution. The Act states that the objective of all water quality programs must be:

To "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

Of perhaps more practical effect are the following two national goals in the Act:

1) To reach, "wherever attainable," a water quality that "provides for the protection and propagation of fish, shellfish, and wildlife" and "for recreation in and on the water" by July 1, 1983. This is usually referred to as the interim "fishable and swimmable" goal.

2) To eliminate the discharge of pollutants into navigable waters by 1985. This final goal is generally called the "no-discharge" goal.

Congress establishes these 1983 and 1985 goals even though sponsors of the Act admitted that there were uncertainties as to whether we had the technologies or the institutional systems - or whether in fact our economy can stand the enormous expense - to meet these deadlines. Until they are changed, however, they remain the "marching orders" that guide policy formation and planning. (Budget reductions at the federal and state levels have caused cutbacks in program planning and implementation which make it questionable that these deadlines can be met.)

TYPES OF WATER POLLUTION SOURCES

There are three types of water pollution sources identified in the federal law that are of interest to cattlemen:

(1) point sources, (2) nonpoint sources, and (3) dredge and fill discharges. It is important for cattlemen to understand these terms and the distinctions among them as federal and state governments deal with each in different ways. Drainage from feedlots, particularly larger feedlots, may fall under the point source type. Cattle grazing operations generally would fall in the nonpoint category. Some activities and projects on a farm or ranch could come under dredge and fill regulation.

CONTROL OF POINT SOURCE POLLUTION

Point sources originate from man's activities and are discharges from a specific point, such as the end of a pipe from sewage or industrial plants. Section 402 of the FWPCA requires those who discharge water from such "points" to obtain a federal EPA or state permit (with some exceptions). Permits specify the types and amounts of pollutants that can be discharged into waterways. Violators of the permit provisions are subject to fines and civil penalties.

Federal law has identified cattle feedlots as potential point source of pollution. Every feedlot of 1,000 or more head must obtain a permit. Some smaller feedlots must obtain permits depending upon certain conditions. The table on the following page summarizes which operations must obtain permits.

The pollutants most closely associated with feedlot or confined cat-

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tle operations are nutrients, organics, salts, and pathogens. Unless controlled, such pollutants may cause water quality problems. The livestock industry has worked closely and cooperatively with the Environmental Protection Agency and other public interests and it is estimated that more than 96% of the nation's cattle feeding operations has already achieved the 1983 national water quality goal.

EPA REGULATIONS FOR FEEDLOTS

Concentrated animal feeding operations. Exemption: No animal feeding operation requir a NPDES permit if it discharges only in the event of a 25-year, 24-hour storm.

Operations With 1,000 or More Animal Units	*Operations With Less Than 1,000 But With 300 or More Animal Units*	*Operations With Less Than 300 Animal Units*
Permit required for all operations with discharges of pollutants	Permit required if operation (1) discharges pollutants through a man-made conveyance, *or* (2) discharges pollutants into waters passing through or coming into contact with animals in the confined area.	No permit required (unless case-by-case designation as provided below)
	Operations subject to case-by-case designation requiring an individual permit only after onsite inspection and notice to the owner or operator.	Case-by-case designation only if operation (1) discharges pollutants through a man-made conveyance, *or* (2) discharges pollutants into waters passing through or coming into direct contact with the animals in the confined area; *and* after on-site inspection, written notice is transmitted to the owner or operator.

CONTROL OF DREDGE AND FILL ACTIVITIES

(3) Dredge and fill activities may also cause water pollution and Section 404 of the FWPCA requires enforceable permits be obtained from the Corps of Engineers of the U. S. Army for discharges of dredged or fill materials into streams, swamps, marshes and wetlands. Dredged material means material excavated from a stream or waterway. Fill material means material used to create dry land from an aquatic area or used to raise the bottom of a body of water.

Normal farming and ranching activities do not require a permit. Material resulting from usual plowing or harvesting, or from the construction of roads, terraces, stock ponds, settling basins, etc., are not covered.

If a construction activity will involve direct discharge of dredged or fill material into navigable waters or a water body, however, you should confer with the District Engineer of Corps of Engineers, the State Pollution control agency, or one of the local USDA agencies as to whether a permit is needed. A permit will be needed if you change the water course and also in some cases where construction activity will occur in an artificial wetlands such as those created by excess waters from irrigation. (NCA is not satisfied with

the exemption language in Section 404, as amended by the 1970 law, and is working on legislative language that would redefine navigable waters so as to make the exemption more meaningful.)

EPA in conjunction with the Corps of Engineers is required to develop guidelines for use in specifying disposal sites for dredge and fill material covered by a permit. EPA may prohibit use of an area as a disposal site based on environmental considerations.

Obtaining a dredge or fill permit often takes a long time. Notices must be given and opportunity for public hearings provided. By regulation in 1977 and in September, 1980, the Corps of Engineers provided for some activities to be allowed under general and nationwide permits. Also, in states where the Governor has requested, and the Corps of Engineers have approved the state plan, the granting of permits has been transferred to the state.

CONTROL OF NONPOINT SOURCE POLLUTION

Nonpoint sources of water pollution refers to runoffs and seepage of pollutants into groundwater and waterways; that is, they are not specific, identifiable points as point sources are. Nonpoint pollution originates from rainwater and melting snow which carry pollutants along dispersed pathways. Some

examples: water running off urban buildings and streets carrying oil, salts, lead, trash, and other pollutants; earth washed into waterways from construction sites; acids drained from mining areas; rain washing fertilizers, pesticides, and topsoil from croplands and pastures.

Runoffs from cattle operations associated with range or pasture grazing (where cattle are not confined for long periods of time in a small area) are potential nonpoint sources of pollution. The 1977 Amendments to the FWCA specified that irrigation return flows would be considered as nonpoint sources.

Generally, unconfined cattle operations are very compatible with a high quality environment. However, there is a potential for problems in areas where animals tend to congregate. If that results in reduced vegetation cover, the area would be susceptible to runoffs that could impact water quality. (See section below on grazing management steps you can take to help maintain water quality or to avoid adverse impacts.)

The 1972 Federal Water Pollution Control Act singles out "urban-industrial concentrations" as a major cause of water pollution and the main focus of the law is on the construction of waste treatment facilities and the regulation of point sources (i.e., industrial and municipal discharges.)

Congress wasn't quite sure how to deal with nonpoint sources of pol-

lution which aren't as easy to define or regulate as point sources are. The federal Act did not establish any regulatory or enforcement system for nonpoint sources such as the permit system which applies to point sources. Rather, it required each state under (Section 305) to evaluate the extent of nonpoint pollution within its borders and to develop some recommendations for controlling such pollution (Section 304 requires EPA to issue guidelines). The Act also required the state management plans or areawide plans prepared under Section 208 to consider feasible measures for reducing nonpoint source pollution.

Although the federal law did not specify any time requirement or level of control for the abatement of nonpoint sources, it has become clear that the national water quality goals (and the state water quality standards required by Section 303) cannot be achieved solely through abatement of point sources. (EPA estimates that more than 50% of the pollutants entering the waterways are from nonpoint sources.) It also should be noted that while the states are given the primary responsibility for pollution abatement, the Act does give EPA the authority to take certain actions if the states do not respond.

The planning and management processes established by Section 208 have become the vehicle for addressing nonpoint source pollution, including that arising from agricultural activities. Therefore, the next section presents summary of the 208 process.

208 WATER QUALITY PLANNING

Although Section 208 of the FWPCA is entitled "Areawide Waste Treatment Management," it pertains to much more than just waste treatment technology. It also covers other approaches to the improvement of water quality.

Section 208 and some other sections of the Act have been hailed as a preservation and protection of the rights of the states and local communities to deal with pollution problems. However, there is a catch: state and local plans and programs must follow guidelines issued by the federal Environmental Protection Agency and must be approved by EPA. EPA has the authority to step in where plans or programs are disapproved.

In summary, these are the main steps in the required 208 process. The Governor in each state must identify specific areas in his state that have serious water quality problems and at the same time designate an organization in each such area to develop a continuing management planning process for the area. If the Governor declines to act, the chief elected officials of local governments in an area may act in his stead. The state is to act as the planning agency for areas not designated by the Governor or local officials.

The designated planning agency must prepare a detailed plan (subject to EPA approval) for dealing with the most important water pollution problems in that area. (Federal grants are made to help pay for the cost of the planning process.) Section 208 area plans must be incorporated into the statewide continuing planning process which Section 303 of the Act requires each state to have. The states must develop and implement State Water Quality Management Plans that will meet the immediate requirements of the FWPCA and eventually the long-range goals of the Act.

Unless the Governor decides a statewide plan for the following is necessary, the 208 area plan must include: "a process to" (1) "identify, if appropriate, agriculturally and siliviculturally related nonpoint sources of pollution, including runoff from manure disposal areas, and from land used for livestock and crop production, and" (2) "set forth procedures and methods (including land use requirements) to control to the extent feasible such sources."

It is EPA policy that the type of regulation appropriate for each nonpoint source category (such as agricultural activities) should be established by the state (208 planning agencies may also suggest regulatory actions for state approval). The nonpoint source program must

consider encouraging or requiring so-called "Best Management Practices" on farms or ranches which have pollution problems. This term means the most practical and effective management actions that will minimize water pollution. These include conservation practices such as terraces, contour strips, minimum tillage, etc. (Of course, if there is no nonpoint pollution problem associated with a farm or ranch, then no change in operations are necessary.)

The 1977 amendments to the FWPCA authorized the Department of Agriculture (through the Soil Conservation Service and other selected agencies) to enter into 5- to 10-year cost-share contracts with rural land owners and operators for the purpose of installing and maintaining measures incorporating the best management practices specified in an approved 208 plan. This is called the Rural Clean Water Program.

There continues to be some controversy over how much regulation, or what kind of regulation, is needed to abate water pollution from nonpoint sources. States have taken different approaches. Eighty-four percent of the states now have approved agricultural nonpoint source programs in their water quality management plans and most of these depend on voluntary compliance by the land owner or operator. Only

13 states have adopted land management regulations but most of these depend on voluntary compliance and informal resolution of nonpoint problems before attempts at enforcement are made. Thirty-seven states do not mandate land management or conservation practices (according to a July, 1981 report prepared for the National Association of Conservation Districts.

Sediment, of course, is one of the major pollutants from nonpoint sources and on the following pages is an outline of state laws relating to erosion and sediment control, as prepared by the National Association of Conservation Districts in October, 1979.

SUMMARY OF PRINCIPAL PROVISIONS OF STATE LAWS PROVIDING FOR EROSION AND SEDIMENT CONTROL

(A reference to the particular law will be essential for complete explanation of provisions)

PROVISIONS	Model Act & Ill. Provisions	Delaware	District of Columbia	Georgia	Hawaii	Illinois	Iowa	Maine	Maryland	Michigan	Minnesota	Montana	Nevada	New Hampshire	New Jersey	New York	North Carolina	Ohio	Pennsylvania	South Carolina	South Dakota	Virginia	Virgin Islands
TYPE OF STATE LAW																							
Erosion and sediment control	X	X	X	X	X				X	X					X		X	X		X	X	X	X
Conservation districts						X	X				X					X		X				X	
Water quality and stream control								X				X	X	X					1				
METHODS OF CONTROL																							
Approved erosion and sediment control plan required for land disturbance	X	X	X	X					X	X		X	39		X	X	X	X	2	X	26	X	X
Establishment of soil loss limits							X											X			X		
Permits on basis of an approved plan	X	X	X	X				36	X					X	23			X	X	X	27	X	X
RESOURCES COVERED																							
Natural resources	X	X		14	17	X			X						14								
Land	X	X	X	X	X	X			X				X		X	25					X	X	X
Soil	X	X	X			X	X	X		X	X			X			X	X		X			
Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X
Streams and streambanks												X					X		X				

EXEMPTIONS FROM LAW OR FROM PENALTIES																							
Agriculture and horticulture		33	x	x			3	37	x	19			33				x		4	x		5	x
Mining				x		x				x							x	x		x		x	
Homes or small sites			x	x	x	x			6						x					x		x	
Highways or railways				x			7															x	
Minor land disturbances	x	x	x	x	x	x													4	24		x	
Cost sharing assistance unavailable	x	x					x	x										x					
STATE CONTROL AGENCY																							
Participating agencies:																							
Soil and Water Conservation	x			x			x				x				x	x	x	x			x	x	x
Natural Resources		34		x			x		x	x		x					x	x					
Other			30	15	18	32		38		20		8	40	42	21		29	13	9				
State responsibilities:																							
Develop policies and programs	x	x				x	x			x	x				x		x		x			x	
Develop criteria standards, guidelines	x	x	x	16	x	x			x	x	x	x	x		x		x	x	x		x	x	
Adopt rules and regulations	x	x		x						x	x	x	x	x			x	x	x		x		x
Approve local programs or plans	x	x	x			x	x		x	x	x				x		x	x	x			x	x
Perform enforcement functions	x	x	x	x		x			x				x				x	x	x		x		x
Assist local agencies with:																							
Ordinances, regulations, and programs	x		x			x	x		x						x		x						
Enforcement			x			x			x	x								x					
Cost sharing	x	x				x	x				x	x			22			x					
Approve state and federal agency plans	x	x				x			x														
Adopt program if local agency fails to do so	x	x		x	x	x											x	x				x	x

NOTE: An "x" indicates that the respective law contains the provision listed; numbers refer to footnotes.

SUMMARY OF PRINCIPAL PROVISIONS OF STATE LAWS PROVIDING FOR EROSION AND SEDIMENT CONTROL

PROVISIONS	Model Act & All Provisions	Delaware	District of Columbia	Georgia	Hawaii	Illinois	Iowa	Maine	Maryland	Michigan	Minnesota	Montana	Nevada	New Hampshire	New Jersey	New York	North Carolina	Ohio	Pennsylvania	South Carolina	South Dakota	Virginia	Virgin Islands
LOCAL CONTROL PROGRAM																							
Participating local agencies:																							
Conservation districts	X	X	31	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X
Counties	X	X		X	X				X	X		X	41		X		X	X	X	X	X	X	
Cities	X	X		X					X	X			41		X		X	X	X		X	X	
Towns or townships	X								X	X		X					X						
CONSERVATION DISTRICT RESPONSIBILITIES																							
Review and approve erosion and sediment control plans	X	X		X				X	X	X		X			X	X	X		X	X	26	X	X
Establish soil loss limits							X																
Assist county or other local agency develop ordinances or regulations		X			X				X	X								X					
Adopt standards, criteria, guidelines			31			X			X		X	X									X	X	
Adopt rules and regulations							X					X											X
Perform enforcement functions 10	X	X				X	X		X	X		12			X			X	X	X	X	X	
Adopt an erosion and sediment control program	X	X				X			X		X						X				X	X	X

COUNTY, CITY, TOWN, OR TOWNSHIP RESPONSIBILITIES

Adopt programs	X	35											41				X		X		X	X	
Review and approve plans	X								11	X							X	X	X				
Adopt ordinances	X			X	X				X	X							X	X					
Issue permits on basis of approved plan	X	X	X						X						23				X			X	
Perform enforcement functions 10	X	X	X						X	X					X		X	X	X	X	X	X	
Issue rules and regulations	X								X								X	X		X			

FOOTNOTES

1. Authorities contained in laws and regulations
2. Acceptable plan required at site of activity
3. Erosion control practices may not be required on land used for such purposes only
4. Exempted from permit requirements only
5. Except as to grading, excavating, or filling
6. Except in Calvert County
7. Within city limits
8. Department of Fish and Game
9. Department of Environmental Resources
10. May include permits, inspection, complaints, violation procedures, fines, other legal actions
11. In municipalities not within a district
12. Special provisions for emergency actions
13. Division of Soil and Water Districts
14. Air and other resources
15. Division of Environmental Protection of the Department of Natural Resources
16. Established by law
17. And other resources
18. Department of Health
19. Persons engaged in agriculture who have agreements with conservation districts are not subject to site plans, land use plans, or permits, but are subject to enforcement procedures
20. Department of Agriculture
21. Secretary of Agriculture and Commissioner of Environmental Protection
22. May assist with grants
23. Certification
24. Emergency repairs
25. Agricultural land as described in the law
26. Required where district determines that an agricultural land-disturbing activity is violating adopted standards
27. Permit issuing authorities must require compliance with district standards
28. Department of Public Works
29. MC Sedimentation Control Commission
30. DC Department of Environmental Services
31. DC Agencies engaged in land disturbing activities
32. State Department of Agriculture
33. Certain specified exceptions
34. Department of Natural Resources and Environmental Control
35. Political subdivisions not precluded from adopting more stringent programs
36. Waste discharge license required for discharge of any pollutant
37. For agricultural activities having an approved erosion and sediment control plan or conservation plan
38. Board of Environmental Protection
39. Initial design of project must provide measures to prevent pollution
40. State Environmental Commission
41. State Department of Conservation and Natural Resources may delegate authority as to diffuse sources (non-point)
42. NH Water Supply and Pollution Control Commission.

CATTLEMEN'S ROLE IN 208 PROCESS

Good public involvement at the local level is one of the goals of the 208 process in developing strategies for abating nonpoint pollution. Citizens with varied occupations and interests are invited to participate in the process, including public meetings and serving on various committees or task forces. Much of this process has been completed; but in many areas there is still opportunity for involvement. In addition, there may be future revisions of present plans. Cattlemen should be involved in these local effors. Information on future meetings may be obtained from one of the agencies listed on page or from your state water quality agency.

CATTLEMEN AS ENVIRONMENTALISTS

Cattlemen who depend on soil and water resources to produce the nation's supply of beef must maintain the quality and productivity of these resources. Conservation and water quality measures they take or install not only improve their own resources, but the enhanced fish and wildlife habitat, erosion, control, and improved water quality benefit vs all. (The public benefits from private conservation efforts are often overlooked!)

MANAGEMENT RECOMMENDATIONS FOR CATTLEMEN

A. Grazing Management:

Properly managed, grazing activities will not have adverse impacts on water quality. Good range and pasture management will not only increase forage but improve water quality.

When adverse impacts do occur, they are most often due to soil, salts, or pathogens being washed into streams or lakes. Here are some common-sense suggestions for avoiding pollution problems:

1. *Maintain adequate vegetative cover.* Vegetative cover reduces runoff and controls erosion. Management practices which help to maintain vegetative cover usually involve distributing cattle so they don't overgraze some areas and varying periods of use. Some examples of management techniques that would minimize the impact of grazing in sensitive watersheds would be use of grazing systems (such as rotation grazing), development of alternate water sources to attract animals away from streams, placement of minerals and salt away from water areas.

2. *Carefully plan your watering and feeding sites.* Most nonpoint source pollution problems occur in the vicinity of watering, feeding, or loafing areas where animals tend to

congregate most often. Such concentrations can have an impact on vegetation and on the condition of the soil so that erosion is likely. You should place supplemental feeding and salting stations a reasonable distance from sensitive water quality areas (streams and water courses). Likewise, you should try to plan your shading facilities so as to keep cattle away from such areas as much as possible.

3. *Use structural techniques to abate pollution.* Sometimes it may be impossible to locate winter-holding, supplemental feeding, or shade facilities outside of sensitive water quality areas. In such cases, diversion terraces and vegetative filter strips can be used to help keep sediment, nutrients, salts and organic matter out of the water.

4. *Follow the instructions on pesticide labels.* Pesticides must have a EPA-approved label indicating whether they are for general use (under specified conditions) or for certain limited or local uses. The label guidelines should be carefully followed so as to avoid nonpoint pollution runoff. Caution should be taken to prevent accidental spills and in the disposal of empty containers.

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5. *Be wary of toxic substances.* Toxic pollutants can come from pesticides, chemical and oil spills, and urban sewage sludge or waste water applied to your land has been properly treated in accordance with state water pollution requirements.

B. Feedlot Management:

Good management, is also important in preventing water pollution from feedlot operations. The major potential pollutant, of course, is livestock waste and the goal of good management is to prevent such waste from getting into natural waters. As previously indicated, almost all feedlots are in compliance with the 1983 national water quality goal and most operators are current with the latest waste management techniques. A full review of these techniques are beyond the scope of this guide but appropriate management practices include:

1. *Use of diking or other means to divert runoff from entry into the feedlot.*

2. *Control feedlot runoff and detain in ponds or lagoons.*

3. *Prevent build-up of solid wastes on feedlots by periodic removal.*

4. *Dispose wastes through land utilization or by other environmentally sound means.*

5. *Take steps to avoid creating a "nuisance."* Odors and flies associated with animal wastes and, ironically, with holding ponds used to abate water pollution have sometimes led to nuisance complaints and lawsuits. If such a lawsuit develops, a cattleman may need to document actions he has taken to avoid the problem. Appendix B of this guide is a detailed discussion of this issue.

ASSISTANCE AVAILABLE TO CATTLEMEN

Since the 1930's a number of federal, state, and local programs of assistance to farmers and ranchers have been funded. These programs have resulted in increased research, education, technical assistance, cost-sharing for measures installed, loans, tax incentives, etc. They have encouraged and assisted farmers and ranchers in carrying our conservation and water quality measures which generally have long term public benefits.

Some funding by the private owner or operator is generally required for such a person to receive any federal, state, or local incentives assistance. Currently many of these cost-share programs are not available. Others have rigid program compliance requirements as a condition. Before applying for cost-share assistance funds, cattlemen should first find out whether there are any strings attached to such aid.

Information on available assistance may be obtained from the following agencies:

	Type of Assistance
1. Soil and Water Conservation District	- Conservation and water quality planning for area.
	- Technical assistance.
	- Conservation measures.

		Type of Assistance
		- Cost-sharing in some instances.
		- Information on local programs.
2.	Local pollution control or water quality agency	- Information on local programs that they administer, including any 208 program.
		- Technical guidance, in some instances.
3.	County Board of Supervisors	- Information on any local regulatory program.
4.	Soil Conservation Service, USDA	- Technical assistance for designing and planning conservation and water quality improvement practices.
		- Range improvement advice.
		- Cost-sharing for conservation practices in Great Plains area and in some watersheds.

		Type of Assistance
5.	Agricultural Stablization and Conservation Service, USDA	- Cost-sharing for conservation, and water quality improvement practices, including certain range improvements. - Assistance varies depending on locally-developed program plans.
6.	Forest Service, USDA	- Through state forestry agency: technical assistance for tree planting. - Range management plans and technical guidance on FS lands. Information on incentives programs
7.	Farmers Home Administration, USDA	- Loans for installation of conservation practices. - Operator loans.
8.	Cooperative Agriculture Extension Service, USDA	- Information on range improvement, conservation, water quality, pesticide useage and related issues.

		Type of Assistance
9.	Bureau of Land Management District Office	- Range management plans and guidance on BLM lands.
		- Technical assistance.
		- Information on incentives programs.

A CATTLEMAN'S SELF-EVALUATION FORM

This self-evaluation form is designed for your convenience in reviewing your cattle operation in regard to the water quality issues previously discussed in this guide. Give each statement below a rating of 0 to 5, with 5 being the ideal. Thus, the lower-scoring situations are areas where you may need or want to make some changes.

		Score
1.	The pasture or range has a good vegetative cover overall.	_____
2.	A good vegetative cover is found near all streams.	_____
3.	There is no soil erosion from salting areas.	_____
4.	Animal holding areas are located 200 or more feet from any streams or sensitive water quality areas.	_____
5.	Land between streams and holding area has good vegetative cover at all times.	_____
6.	Rainfall runoff concentrations are diverted from feedlots or holding areas.	_____

		Score
7.	Runoffs from roadways and buildings are diverted away from feedlot or holding areas.	_____
8.	There are no water courses through holding areas.	_____
9.	Diversion terraces or special vegetation filter strips are maintained between working or salting areas and sensitive water quality areas.	_____
10.	Cattle watering tanks have water controlled drainages.	_____
11.	Manure is spread on unfrozen land early in day and plowed under within one to two weeks.	_____
12.	The spreading of manure on steeply sloping land without a cover is avoided.	_____
13.	Watershed areas having soil erosion problems are getting special attention.	_____

		Score
14.	A grazing management plan is being carried out to improve quantity and quality of vegetative cover, and hereby reduce pollutant runoff from the pasture or range.	_____
15.	Special attention is given to disposal of empty pesticide containers.	_____
16.	Special care is being taken to avoid nuisance complaints from the community (flies, odors, etc.).	_____

A CATTLEMAN'S PLANNING FORM: CONSERVATION AND ENVIRONMENTAL GOALS

In the previous section, a form for evaluating your present operations was presented. Here we present a form that you may want to use to make some private resolutions to yourself about what you plan to do in the future to help improve water quality. (You may want to check the completed form a year or two from now to see how well you've carried out your resolutions!)

It is my desire to assist the Nation in meeting it's conservation and environmental goals as I carry out my cattle production operations.

During the past two years I have assisted by _____

_____

_____

_____

_____

_____

_____

(such as member of conservation board, attending local water quality meetings, developing erosion control plan, carried out improved pasture or range measures, etc.)

Some of the areas where I can become more involved in the next two years (check)

Attend local meetings ____
Member of local Water Quality Committee ____
Give speeches to civic and local groups ____

Attend state meetings ____
Invite visitors to farm or ranch ____

To improve water quality and the environment from my operations in the next two years I plan to _____

_____

_____

_____

_____

_____

_____

APPENDIX A

Definitions

Point Sources - End of pipe discharges from municipalities, industries, farms or ranches, and mines.

Nonpoint Sources - Diffuse type runoff of pollution caused by rainfall, including stormwater runoff from cities, farms, ranches, and forest, erosion at construction sites, and irrigation return flows.

Dredge Material - Material that is excavated or dredged from waters of the United States.

Fill Material - Any material used for primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a water body.

Navigable Water - Waters of the U.S. subject to ebb and flow of the tide and/or are presently used or have been used in the past to transport interstate commerce.

Wetlands - Those areas that are inundated or saturated by surface or ground water at a duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. This may include swamps, marshes, bogs, and similar areas.

APPENDIX B

WHAT FEEDLOTS CAN DO TO HELP AVOID NUISANCE LAWSUITS

(A technical bulletin prepared for the NATIONAL CATTLEMEN'S ASSOCIATION)

By
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Texas A & M University

J. Ronald Miner
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EDITOR'S NOTE: *Control of odors, water pollution, dust and flies has been and will be an increasing problem for many feedlot operators. In the accompanying article, two consultants to NCA's Environmental Management Committee discuss these problems and offer suggestions to cattlemen. Particular attention is given to steps to be taken to avoid odor nuisance lawsuits, but other problems in relations with the public also are discussed. One difficulty now is that legal problems may grow because there has not been enough basic research to make possible needed technical advances in control. Dr. Sweeten is extension agricultural engineer-waste management, Texas Agricultural Extension Service, College Station, Tex. Dr. Miner is head of the agricultural engineering department at Oregon State University, Corvallis, Ore. This article is an expanded version of an article which appeared in the July 6 BBB. It is suggested that members save this article for future reference if nuisance complaints are a possibility.*

Cattle operations are often the target of nuisance complaints resulting from odors, flies, dust, noise or water pollution. Recent nuisance lawsuits decided against cattle feedlots have aroused new interest in ways to avoid such legal actions. When a lawsuit is encountered, the best possible defense needs to be made to document that a nuisance does not exist, to avoid an injunction or to minimize assessed damages. Technical and legal aspects of odor nuisance are reviewed in this paper. Also discussed is control of water pollution, dust and flies.

Legal Concept of Nuisance

Nuisance is broadly defined as anything which unreasonably interferes with the normal use and enjoyment of property. A **private nuisance** is one keeping only a few persons from enjoyment of private property. A **public nuisance** is one that keeps a considerable number of people from enjoying rights of the public as a whole.

Public nuisance suits are usually carried by state or local agencies to the courts. Relief may consist of a moderate fine, specific corrective orders and/or an injunction. By contrast, private nuisance suits, which are carried out by one or a limited group of neighbors against a person or company, often ask for large sums of money for alleged actual damages, such as decreased property values, and perhaps punitive damages or an injunction. Damages are more frequently awarded than is an injunction.

Questions of degree are crucial: How many persons are affected? How severe is the nuisance? Is it temporary or permanent, continuous or intermittent? Can it be corrected? Evidence supplied to answer these questions will have a large bearing on the outcome. A cattleman needs to hire the best trial attorney and best available consultants to develop and present evidence favorable to his side. An expense of $15,000 to $20,000 would be typical. Therefore, the cattleman and his attorney need to decide very early if a successful defense can be developed and whether it is worth the cost.

In the public sector, odors and dust are usually prosecuted under nuisance provisions of State Clean Air Acts. Fly and rodent problems in many states are handled by separate agencies as a public health nuisance, often regulated by local government. Water pollution problems are seldom handled as nuisance suits, but rather under state and federal water quality laws that prohibit discharge without a permit. State agencies try to work with the producer to help solve his problem, but, in the final analysis, they will bring suit if a severe problem incapable of permanent solution persists.

The U.S. Environmental Protection Agency has neither the authority nor any plans to regulate odors at this time.

Innovative approaches designed to regulate feedlot odors and dust include:

a. County agricultural zoning (Nebraska).
b. Construction permits for new feedlots (Texas) or lagoons (Iowa).
c. Property line odor intensity limits (Colorado and Wyoming).
d. Objectionability criteria (Iowa)—number of people affected, frequency, duration, etc.

The North Carolina legislature recently passed a law (HB 481) that states: "No agricultural operation or any of its appurtenances shall be or become a nuisance, private or public, by any changed conditions in or about the locality thereof after the same has been in operation for more than one year, when such operation was not a nuisance at the time the operation began; provided the provisions of this subsection shall not apply whenever a nuisance results from the negligent or improper operation of any such agricultural operation or its appurtenances."

In another important section, the law invalidates "any and all ordinances of any unit of local government now in effect or hereafter adopted that would make the operation of any such agricultural operation or its appurtenances a nuisance in the circumstances set forth . . ." The Alabama legislature previously had enacted a similar bill to protect against encroachment of non-agricultural land uses.

Some Recent Nuisance Cases

Case law is informative but not conclusive on the subject of nuisance. As a Massachusetts court said in 1914, "The law of nuisance affords no rigid rule that can be applied to all instances."

In early 1979, a Nebraska jury awarded a farm family--themselves cattle producers—about $50,000 in damages for odor, rodent and dust related nuisance allegedly created by a nearby 10,000-head feedlot. In March 1979, the Texas Court of Civil Appeals upheld a trial court decision that livestock pens, built 80 years ago to receive, sort, and ship livestock, are producing odors "by processes other than natural." Further, the court stated that concentration of livestock "would not now be normal in this vicinity," since homes and businesses have sprung up around the livestock facility. An El Paso District Court closed down an old feedlot in 1975 that had been engulfed by residential, commercial, and industrial property.

On the other hand, a large new Texas meat packing plant was successfully defended in 1978 against claims of property value reduction brought by an adjacent farmer who "was there first" and who allegedly suffered nuisance from odors and flies.

In a famous nuisance case, the Arizona Supreme Court decided in 1972 that Spur Feedlot should be closed but that the suing land developer had to pay the feedlot "for a reasonable amount of the cost of moving or shutting down." Payment to Spur Feedlot was necessary because the developer had brought homeowners into a previously agricultural area.

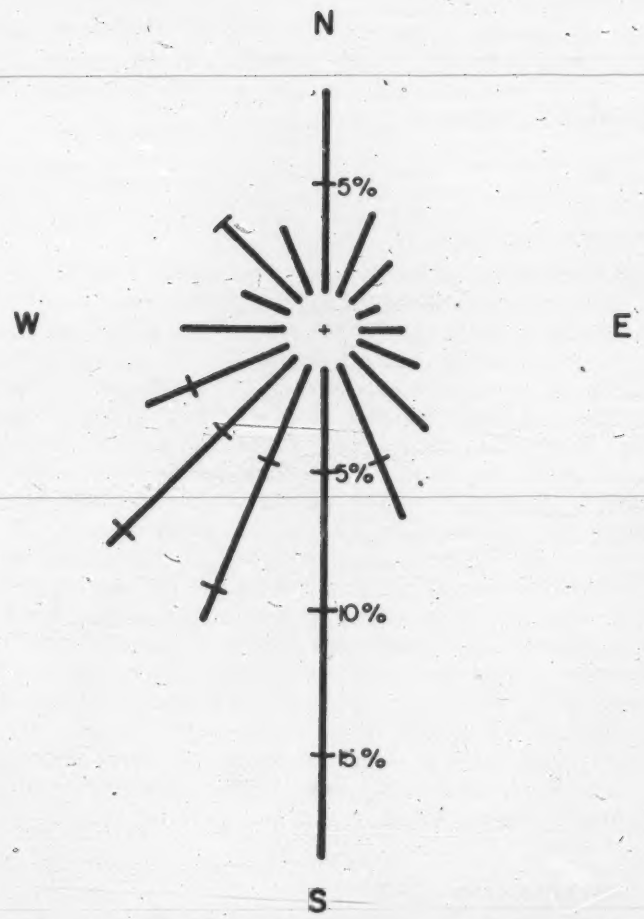

FIGURE 1. Surface wind rose diagram for Amarillo, Texas, showing average annual probability of wind from a given direction. (Average wind speed = 12.1 knots, or 13.9 mph.)

A Kansas court held in 1958 that a residential landowner may not have relief if he knowingly came into a neighborhood reserved for industrial or agricultural endeavors and has been damaged thereby. Similarly, during the mid-1970's, would-be land developers were unsuccessful in claiming damages for reduced property value attributable to odors and flies from two established feedlots in Taylor and Hood Counties, Texas.

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With the uncertainty of the outcome and the sure expense of defending against nuisances, cattle producers need to understand certain technical principles and practices involved in avoiding and abating nuisance conditions.

Response to Odors

Human response to odors is primarily subjective. Livestock odors are not hazardous to human health at the concentrations at which the compounds have been measured adjacent to a feeding facility. Rather, odors constitute an annoyance.

Odors can be characterized according to their frequency, intensity, duration and offensiveness (the so-called "FIDO factors"). Nuisance complaints result when these characteristics exceed reasonable limits. For instance, the Iowa Air Quality Commission stated that for a complaint to be "actionable," the odor must occur at a **frequency** of 10 or more days per 30-day period for a **duration** of 12 or more hours on each of these days. Experience has shown that an odor **intensity** above 7 dilutions to threshold (DT) will cause complaints, while an odor intensity above 31 DT may be described as a serious nuisance if it persists. Cattle feedlots rarely get below 7 DT.

Odor intensity is usually measured by using a Scentometer (a portable, plexiglass, hand-held device costing about $150) which establishes different dilution ratios of odorous air to odor-free air. The human nose is used to select the highest dilution at which odors can be detected. Odor **offensiveness**, on the other hand, is very difficult to quantify for purposes of writing standards.

Approaches to Odor Control

Odor control methods are imperfect to say the least. But cattlemen can and should strive to minimize odor frequency, intensity, duration, and offensiveness.

Separation of the odor source (feedlot) from the receptor (neighbors) is the best method. Odor concentrations diminish rapidly with distance downwind of an odor source. For example, ammonia levels decreased by 80-95 percent within 400 feet of a cattle corral in a California study. Odors from a ground-level source are calculated to undergo 99 percent reduction in odor concentration over a distance of one to two miles, depending on atmospheric stability. A distance of 300 feet will usually produce an order of magnitude reduction in odor intensity. But, experience has shown that odors can drift for several miles at low, yet detectable, intensities. So distance alone is not a complete answer.

Prevailing winds can be determined from hourly observations recorded at major U.S. Weather Service installations. Computerized summaries showing probability of a given wind direction, wind speed and atmospheric stability class ("STAR Program") are available for about $25 from the National Climatic Center, U.S. Department of Commerce, Federal Building, Asheville, N.C. For example, the wind direction frequency chart for Amarillo (FIGURE 1) shows that there is only an 11% chance of wind out of the quadrant Northeast to East-Southeast. But, the wind blows 48 percent of the time out of the South-Southeast to Southwest quadrant. In this instance, feedlot location could make a lot of difference to both neighbors and juries.

The second basic approach to odor control is to keep manure dry as much of the time as possible. Odorous compound formation is generally the product of bacterial decomposition of manure. Offensive odors are released when manure is allowed to undergo anaerobic (or septic) decomposition. This occurs when oxygen is excluded. By maintaining a manure-covered surface in a relatively dry condition (less than 40 percent moisture) anaerobic decomposition at the feedlot surface is minimized.

TABLE 1. Summary of Odor Intensities at 17 Texas Cattle Feedlors, 1973-75

Location		Condition	Odor Intensity, DT
1.	Feedlot surface	Dry	7
2.	Feedlot surface	Well-Drained; Moist	7-31
3.	Feedlot surface	Poorly-Drained; Damp	31
4.	Feedlot surface	Wet; Ponded	31-170
5.	Runoff retention ponds	------	31-170
6.	Manure stockpiles	------	7-170

Intense, offensive odors are most prevalent when pens are drying out after rainfall, when water stands on the feedlot surface, or when runoff holding ponds contain relatively fresh solids. Odor intensities of 170 dilutions to threshold (DT) are common under these conditions. This means that it takes 170 cubic feet of odor-free air to dilute one cubic foot of odorous feedlot air to the point where half the human panelists can detect the odor and half cannot.

Odor intensity values measured at 17 Texas feedlots (TABLE 1) suggest that the lowest attainable odor intensity for an open cattle feedlot may be 7 DT. Under damp conditions an odor intensity of 31 DT is typical. Water ponding on the feedlot surface can cause higher readings. Odor levels of 31 to 170 DT are typical near runoff settling basins and retention ponds soon after rainfall.

A strategy to lessen the intensity and duration of feedlot odors after rainfall consists of these steps:

1. Maintain rapid pen drainage—pen slopes should be 3-4%, ideally with no potholes.
2. Keep manure solids out of runoff holding ponds—runoff collection ditches should empty into an easily-maintained settling basin or channel (0.1-0.3% slope) to capture settleable solids before liquids are drained to holding ponds.
3. Water trough maintenance to prevent overflows and leaks.
4. Maintaining dust control systems to prevent leaks, nozzle stoppage, and low pressure that cause wet spots around sprinkler nozzles.

Another Basic Approach

The third basic approach to odor control consists of keeping a minimum quantity of manure and wastewater on hand. This involves:

1. Rapid dewatering of runoff holding ponds.
2. Prompt removal of settled solids from debris basins and channels.
3. Frequent collection of loose surface manure which soaks up rainfall and delays recovery after rainfall.
4. Maintain an undisturbed manure pack 2 to 3 inches thick just above the soil surface to seal off infiltration and to maximize surface runoff. Elevating scrapers and road graders can collect the aerobic manure layer and leave an undisturbed manure pack. However, wheel loaders are not designed for such precise manure collection.
5. Maintain markets for manure to limit the manure inventory, and limit the size of the working face of stockpiles.
6. Haul manure to fields promptly after stacking in pens. Freshly stacked manure produces odor intensities measured at 170 DT at the same time that 7 DT may be registered in an adjacent uncollected pen.

Manure spread on cropland produces temporary odors until drying occurs. Ways to avoid odor complaints from land application include:

1. Select a field downwind of neighboring residences.
2. Spread manure in the morning to allow maximum drying time.
3. Spread manure when the wind speed exceeds 9 mph for maximum dispersion and do not spread when wind is less than 5 mph.
4. Plow under surface-spread manure to control odors and conserve nitrogen.

Confinement cattle feeding facilities with liquid manure management systems have different types of odor control problems, but control technologies are available nonetheless. Special manure handling methods must be used to keep cattle clean and dry and prevent anaerobic conditions. Successful practices include daily scraping of solid floors; use of slatted floors with hydraulic flushing or cable scraping of underfloor pits; and flume floors with continuous low-volume flushing. Covered manure storage tanks control the release of odorous gases generated in stored manure. When the soil is suitable and neighbors are close, direct soil injection is a valuable technique for liquid manure disposal. Mechanically aerated lagoons can be effectively used to maintain low odor intensities where biological treatment is required and odor control is important.

Anaerobic lagoon systems, where permissible to install, need to be designed with adequate capacity and managed carefully to avoid overloading, which is accompanied by fly and odor problems. Design criteria vary from state to state, primarily because of climate.

Additional Practices

Some additional practices worthy of consideration include:

1. Landscaping to shield feedlots and holding ponds from the public view;
2. Chemical treatment of wet areas on the feedlot surface with oxidizing chemicals such as potassium permanganate or hydrogen peroxide, odor absorption chemicals such as zeolite, or bacterial/enzymatic products (digestive deodorants).

Odor control chemicals are widely available. From limited data, their effectiveness has appeared promising in some instances and disappointing in others. Field trials are suggested before major expenditures are made in this area.

Judges and juries are generally sensitive to not only the severity and frequency of an odor nuisance, but to the degree to which the feedlot management has attempted to control odors. Hence, it is appropriate to document and publicize whatever odor control steps are taken. These measures further document the positive intention of management and further reduce the possibility of punitive damages being assigned.

Managing Water Pollution Abatement Systems

The cardinal rule for water pollution contol is very simple: "Keep the crap out of the creek." Essentially all major cattle feedlots have installed adequate water pollution abatement systems designed to protect against discharge from the 10-year or 25-year frequency, 24-hour duration storm. However, maintenance of these systems remains a problem. Many feedyards simply do not dewater holding ponds on schedule, as required. In Texas, for example, 14 days are allowed for dewatering after the ponds get 75 percent full. Delayed pumpdown of holding ponds increases the likelihood of an illegal discharge and prolongs odor production. Therefore, cattle feeders should not try to save runoff, but rather should dispose of it as soon as the soil is dry enough to accept it.

Because of its salt content, feedlot runoff generally does not make good irrigation water without dilution water being added. Salinity increases the disposal problem. Professional guidance may be needed to design a runoff disposal plan to fit your soils, crops and water quality.

Continuous overflow watering systems tend to keep holding ponds half-full of water and to keep settled solids wet and odoriferous. On the positive side, they add valuable dilution water for disposal and runoff. If overflow drinking water systems are used, a special effort is needed to keep the holding ponds pumped down to less than 25 percent full.

Settled solids carried by feedlot runoff pose a special management problem as well. It is inefficient and expensive to remove these solids from runoff holding ponds. The most commonly used equipment has been draglines, wheel loaders and elevating scrapers. It often takes a major drought to dry up the holding ponds enough to collect and haul settled material in a solid form. Hydraulic dredges and trailer-mounted centrifugal pumps have been used to pump out settled solids in a slurry form.

The best solution is to remove settleable solids before they reach the holding pond. Research shows that debris basins and flat baffled channels can be designed to remove 75% of total solids. Moreover, these facilities are much easier to clean than holding ponds.

Groundwater pollution is another frequent complaint against feedlots. Data are available, however, which document that operating cattle feedlot surfaces are impermeable and hence do not contribute. If runoff retention ponds are well sealed, their contribution should also be slight. Where groundwater contributions do occur, nitrates are the best indicator. Samples collected from feedlot and surrounding wells can be used to document whether such a problem exists. The pollution of groundwater is generally much less frequent than the number of accusations.

On balance, feedlots are doing a good job of water pollution control. For example, in Texas the last in-stream fish kill attribued to a

cattle operation occurred seven years ago. But odors and management problems from these water pollution control systems still cause concern.

Dust Control

Research sponsored by the California Cattle Feeders Assn. showed that properly sprinkled feedlots generated 18 times less dust than untreated lots. Dust levels rose 850% when water treatment was discontinued for seven days. Steps to feedlot dust control consist first of removing excess manure before the dry season arrives. The second step is to apply water when the surface manure moisture content falls to around 20%. Recommended initial application rates should be at least one gallon of water per square yard per day (0.18 in. per day) until 25 to 30% moisture content is reached. Thereafter, water should be applied at 1/2 to 3/4 gallon per square yard per day (0.09 to 0.13 in. per day) as long as dry weather persists. As little as 1/4 gallon per square yard per day may be needed for recently scraped pens. Daily watering is better than alternate day watering.

Water application equipment consists basically of permanent (solid-set) sprinklers, portable sprinklers (large bore), water tankers and water trucks. Increased cattle stocking rates apparently provide some relief also.

Fly Control

Flies originating from feedlots pose a nuisance problem primarily, and to a lesser extent serve as potential vectors of pathogens. Complaints about flies at livestock feedlots are common and are usually associated with odor complaints.

Complaining neighbors, lawyers, and health authorities often fail to recognize that cattlemen have significant economic incentives to control flies and may already be spending large sums of money to accomplish this. Nor are complainants likely to distinguish between flies produced at the feeding operation and flies that migrate several miles upwind toward the feedlot. Some professional entomologists believe that well-managed feedlots kill more flies than they produce.

Extension field studies in Nebraska demonstrated that a stable fly population of 50 flies per animal reduced average daily gains by 0.2 and 0.4 lbs/day when cattle were on growing and finishing rations, respectively. Other economic incentives for fly control include employee irritation and feeder-customer relations.

The fly breeding potential around feedlots is enormous. A pound of manure solids can yield 650 to 700 fly larvae in a week under ideal conditions. Under warm summer temperatures, approximately 10 days are required for development of the housefly from egg to adult. The life cycle is usually completed in 20-30 days, during which time females may deposit as many as 1,000-2,000 eggs total. It is common to get 10-12 generations of flies in one summer.

Control at the larval stage (days 1 through 5) is the key. Good control is dependent upon removing three factors that contribute to larval development: food, moisture, and/or shelter. Food materials—spilled feed, horse and cattle manure—need to be removed frequently. Larvae will not develop if manure is too dry (less than 30% moisture) or is in a liquid state (over 95% moisture). Larvae can be desiccated if manure is collected and thinly spread under dry conditions. Wet spots should not be allowed to develop on the feedlot surface.

Trampling that occurs in feed pens minimizes larval development. Fly larvae are no match for a 1,000-pound steer! However, places where manure falls but cattle hooves seldom reach prove especially troublesome as fly breeding sites. These locations include fencelines, feedbunks, hospital pens, horse pens, cattle processing areas, feed mills, runoff settling basins and runoff holding ponds.

Recommendations

From the available information on feedlot fly control, several recommendations can be made:

1. Design feedlot to allow proper surface drainage and easy waste removal. Prevention of potential fly breeding areas affords the best means of control.
2. Correct pen drainage problems to avoid potholes where odors and fly breeding can occur.
3. Correct overflowing water troughs.
4. Remove manure from pens within five days after cattle removal in order to prevent larval development.
5. Frequently remove manure and spilled feed from important fly breeding areas such as fence lines, feed bunks, hospital pens, horse pens, truck washing stations and receiving and shipping areas.
6. If sprinkling is used to control dust or relieve cattle heat stress, make sure sprinkler heads do not leak. Proper waste management becomes even more important in fly control if a sprinkler system is utilized.

7. Prevention of floating crusts on manure treatment lagoons, used in connection with confinement buildings, by providing the proper lagoon liquid volume. Control fly breeding along lagoon banks by refilling with water after pumping and by reducing excess vegetation along the banks.

8. Remove settled solids from feedlot runoff collection channels, debris basins and embankments surrounding runoff holding ponds.

9. Use chemical controls in conjunction with a good sanitation program and not as the sole means of control.

a. Use of space sprays will generally reduce adult fly populations for short periods of time.

b. Use of residual sprays on the resting sites of flies provides the most lasting control.

c. The use of baits is a questionable control effort.

d. Apply larvicides to areas of intense larval development such as manure stockpiles, hospital and horse pens.

The majonty of feedlot managers are utilizing these fly control methods, according to a 1979 survey conducted by the Texas Cattle Feeders Assn. and the Texas Agricultural Extension Service. The feedlots that responded to the survey customarily apply pesticides at 1 to 7 day intervals by methods that include (in order of preference) fly bait, ground sprayers, ground foggers, aerial application and feed-grade larvacide.

The Future

Many unresolved problems regarding nuisance will be carried forward into the 1980's. Cattlemen have an enormous stake in deciding issues such as establishment of agricultural zoning or enactment of odor intensity standards. Broad protection against nuisance suits afforded by new laws in Alabama and North Carolina looks appealing.

Unhappily, one thing is certain—legal developments are far more likely to occur than technical breakthroughs at the present pitifully low levels of research funding on odors. Basic research is needed to unlock secrets of how odors are generated and how they can be affordably controlled. Applied research to evaluate these discoveries in the field could swiftly follow. Reliable data on odor transport and guidelines concerning "safe" separation distances are sorely needed. Understanding the complexities of molecular interactions that transform odors will take more time.

Lately, leading odor researchers have agreed that complex odors such as manure vapors can best be measured by human perception. Several useful devices are available now to achieve this. Debates over exactly which instrument and set of procedures are optimum may run into the 1990's.

Can the livestock industry afford to wait until the scientists complete their work or EPA decides to dictate the methodology, technology and standards? Would it not be better to "get the facts" and be in the driver's seat if and when state and federal odor regulations are written?

STATEMENT OF THE AMERICAN FARM BUREAU FEDERATION, BY BRUCE HAWLEY, ASSISTANT DIRECTOR, WASHINGTON OFFICE, NOVEMBER 16, 1983

The American Farm Bureau Federation is a general farm organization in 48 states and Puerto Rico. Farm Bureau membership exceeds 3.2 million member families representing more than half the production of every major commodity produced in the United States. We have been actively involved in water quality issues for many years. We appreciate the committee's willingness to provide this opportunity for consideration of agricultural concerns.

Since the passage of the Federal Water Pollution Control Act of 1972, all states have participated in a comprehensive process to study non-point source pollution problems, to identify their sources and to identify management practices most likely to result in reduced non-point pollution. The 208 planning process of which the non-point source study activities were a part has entailed nearly a billion dollars of federally appropriated funds.

We believe the time for further planning and study of water pollution and water quality issues has passed. It is not time for action. We in agriculture are prepared to do our part to address the agricultural portions of this nation's water quality problem. As this committee is aware, nearly every state in the country has current, ongoing water quality management programs aimed at mitigating agricultural run-off problems. The water pollution problem is a long way from a solution, but substantial efforts are being made.

Much has been learned from the studying and monitoring that has been undertaken in the past decade with regard to the agricultural contribution to water pollution problems. An example . . . The Chesapeake Bay loss of vegetation was of serious consequence to the future aquatic environment. Many picked up the cry that agricultural herbicides were an important contributor to the decline in aquatic vegetation and related marine life in the bay. As the bay was intensively studied under the Chesapeake Bay Project, the researchers discovered, somewhat to their surprise, in virtually no portion of the bay were herbicides or other agricultural pesticides implicated as a problem. Rather, the decline in vegetation was associated with a buildup of toxics associated with industry or other problems. Our point is not to suggest that agriculture is without its responsibilities in the non-point source area, but rather that we now know more precisely the nature of the agricultural contribution to non-point problems than we did a decade ago.

We have historically viewed the agricultural pollution problem as a soil conservation problem, a run-off control program. Increasingly, we recognize that this is an incomplete answer and that other agricultural problems must be accommodated. Again, by way of example, Lancaster County, Pennsylvania, is an area of high dairy concentration. It has been determined that there is a dairy livestock waste production equivalent to 13 tons per cultivated crop acre. Livestock waste land application at that rate has some surface run-off implications, but of far greater concern is the nitrogen leaching potential. In fact nitrogen leaching factor in ground water has been discovered. They have come to realize water quality associated with agricultural activities is more than a run-off control program. Now under study is a methane powered electric generating facility as a possible alternative to the land disposal of livestock wastes. Whether this solution proves to be efficient remains to be seen. The point is they have identified their problem and are aggressively seeking solutions to it. The solutions are outside the run-off control arena and solutions that could not have been anticipated at the time of passage of the Federal Water Pollution Control Act of 1972. In that context, we applaud the Congress's foresight at that time in not specifying rigid legislative answers of federal regulatory requirements detailing the nature of state non-point source control programs. Non-point source control continues to evolve in cost-effective, efficient and workable technologies on the farm. The flexibility must be preserved for future growth and evolution in this control technology area.

Within the past decade, land subjected to no-till practices in the Midwest corn belt region has more than doubled. This dramatic increase in no-till technology for corn and beans has proven to be an effective means for reducing run-off from the fields at approximately a 90 percent level—a run-off control program that makes money for farmers rather than costing them money, reduces fertilizer and pesticide run-off and is readily acceptable by farmers. A major key to the dramatic growth in no-till farming has been the increased cost of energy, thus making soil tillage increasingly expensive. Even with that fact, demonstration projects conducted by the private sector and by the conservation districts have been an effective tool to demonstrate to farmers that there is a better way. These are the kinds of solutions that

will gain wide-spread acceptance in agriculture and will give us our most dramatic progress towards non-point source control.

We commend Congressman Oberstar for providing leadership before this committee in an effort to encourage further consideration of nonpoint source control programs. Mr. Oberstar's bill is a cost-share bill to assist farmers in implementing nonpoint source control practices. It is a useful tool for initiating discussion on what might constitute the most effective pollution control program for agriculture, mining, forestry and construction activities. We encourage this committee to also consider a cost-share program a demonstration program. This committee is well aware that the Extension program of the Department of Agriculture, operated in conjunction with the land grant institutions, has been of tremendous assistance in transferring technology from the research lab to the land and has been an important component in bringing this country into the forefront of world-wide agricultural production. We encourage the committee to build on this past experience and supplement it to make it more responsive to non-point source control needs.

We have utilized cost-share program for soil conservation practices in agriculture for the past fifty years. Recent studies indicate that inadequately funded cost-share programs may serve as a detriment to rapid implementation of soil conservation programs. Farmers have approached the Soil Conservation Service with requests for cost-share participation in the implementation of conservation programs on their land only to discover that insufficient funds are available from the government's offices. This has led farmers to defer necessary conservation activities under the promise of insufficiently funded cost-share program were initiated under the auspices of this legislation.

Much of the discussion surrounding further progress in the non-point source area has centered around the need for additional planning, studies, and monitoring. Certainly, there is a place for all of these activities; however, considering the magnitude of funds that have been spent for planning already, considering the updating of those planning and needs' studies that was accomplished by the Department of Agriculture's Resource Conservation Assessment, and considering the significant progress that is being made on a farm-to-farm basis across the country in addressing non-point programs, we urge this committee to minimize the requirement for resubmission of plans. Further planning and studies can become an end of its own—and end that does not lead to an improvement in water quality. This committee has made clear its feeling that now is the time for action rather than further planning. In that context, we suggest that any legislation reported minimize planning requirements and make clear to the states that the responsibility for any planning rests solely on their shoulders. We also recommend that no more federal funds be authorized for planning purposes. If states are obligated to fund any further planning activity, it will serve as a significant incentive to the states to minimize the magnitude of those planning activities and move as rapidly as possible into the implementation phase of non-point source control.

Mr. ROE. Please proceed.

TESTIMONY OF LES COY, CHAIRMAN, 208 WATER QUALITY SUBCOMMITTEE, NATIONAL CATTLEMEN'S ASSOCIATION, AND BRUCE HAWLEY, ASSISTANT DIRECTOR, WASHINGTON OFFICE, AMERICAN FARM BUREAU

Mr. COY. Thank you very much, Mr. Chairman. We appreciate the opportunity to be here before this subcommittee today.

I am a farmer and cattlefeeder from Iowa.

The National Cattlemen's Association recognizes that agriculture nonpoint source pollution does exist and a nonpoint source program is needed. We believe that such a program for agricultural lands should have the following principles in mind:

One, nonpoint sources of pollution cannot always be corrected in a one-time cleanup operation.

Two, agriculture nonpoint source pollution may be improved, but it is a problem that will exist into infinity because of everchanging variables. Adverse weather causes a fluctuation of pollution levels.

Even with implementation of best management practices, adverse weather may cause excessive pollution for a period of time.

Three, to maintain satisfactory levels of pollution control, continuous funding and technical assistance will be required.

Four, members of the ranching and farming industries have been voluntarily carrying out the best management practices for many years to improve the quality of the Nation's environment. Continued efforts need to encourage the continued use of these best management practices. As of this date, past and current research is and has been inadequate to scientifically evaluate and provide concrete data relative to needs of providing sound guidance on the many facets related to nonpoint source pollution.

Five, generally, unconfined livestock operations are very compatible with a high-quality environment. However, there is a potential for problems where vegetation is excessively grazed, excess and undesirable woody species have invaded, and in areas where animals tend to concentrate.

Six the cornerstone of our Nation's conservation efforts related to water quality has been successful under a flexible voluntary program. The NCA desires that policies and programs related to agricultural nonpoint source pollution be kept and carried out through a voluntary approach.

We want antipollution efforts to be site specific, basically.

One area is different from another. One farm is different from another. Even in my own county, best management practices at one end of the county are not applicable to the other end of the county.

The Nation's ranching and farming industries have been consistent supporters and active participants in helping to control nonpoint source water pollution on agricultural lands. The conservation measures that ranchers and farmers have and are carrying out have not only improved their own resources, but enhanced fish and wildlife habitat, erosion control, and improved both water quantity and quality. We have often been disappointed that the public benefits from private conservation efforts are overlooked. Our interest in and dedication to controlling nonpoint source pollution are rooted in moral, economic, and ecological reasons.

We fully recognize that our Nation's No. 1 pollutant, silt and sediment, results from past land abuse or current neglect. Our industry largely depends upon forages and grasses grown on cropland, rangeland, pastureland, and forest land, all of which are soil conserving land uses. However, overgrazing of these lands for prolonged periods reduces the quantity and quality of protective plant cover, leaving the soil surface bare. This exposed soil is then at the mercy of nature's erosive processes. Not only is precious topsoil lost, but the soil that is washed away also carries with it nutrients, pesticides, salts, and other potential pollutants. As stewards of nearly 61 percent of the land area of the United States, cattlemen feel a moral obligation to care for this land which is vital to mankind's existence now and which is essential for the sustenance of future generations of Americans. We view conservation of our soil, water, plant, and wildlife resources as a never-ending task.

The conservation of our natural resources is inseparably linked to our efforts to control nonpoint source pollution. You simply

cannot have one without the other. Each farmer and rancher is a practicing ecologist who employs knowledge of the interaction of soil, plants, water, and animals, including wildlife, in managing this land for its maintenance and perpetuation and for a sustained economic return from his investment.

America's animal agriculture is anchored in thousands of small family business operations across this great land, and continues to serve as an impetus for economic productivity. Every livestock farm and ranch is a dynamic ecosystem and economic system. Our work toward achieving nonpoint water pollution control has kept these principles in mind.

Earlier I pointed out that cattlemen are stewards of nearly 61 percent of the land area in the United States. Much of this is rangeland that can only produce crops for grazing. However, cattlemen also manage a sizable portion of the land in many major crop producing areas. A typical cattle operation in a crop producing region also has pasture and forage acres. These cattlemen do not plant every available acre to row crops. They rotate their crops and use their more erodable acres for pasture and hay production to produce feedstuffs for their cattle. This contributes significantly to improved soil conservation in these areas. This is done voluntarily by the cattlemen and is in the best interests of us all. Current Federal farm programs have discouraged the continuation of these practices. The Federal Government needs to analyze the impact of their programs and be sure that producers are not paid to discontinue sound soil conservation practices.

Other naturally occurring obstacles contribute to nonpoint source pollution in grazing regions of the United States. Noxious woody plants known as brush compete directly with desirable plants which cover the ground. The result of this competition is bare ground and resultant erosion. The established brush also utilizes water that could go to recharge underground aquifers. Thus, the result of heavy brush densities is accelerated erosion, reduced water quality and a reduced supply of clear water. Our best estimate is that more than 100 million acres of grazing lands in the United States need brush management applied to control the nonpoint source pollution problem. At today's prices, the cost of reducing the density of brush on these acres would cost between $4 billion and $6 billion depending upon the methods of control required. A recent report issued by the Office of Technology Assessment cautions that brush encroachment and invasion poses a major long-term threat to range productivity in addition to increasing nonpoint source pollution.

The cost of controlling excessive brush has skyrocketed in recent years. Both chemical and mechanical brush control methods in Texas and the southwestern rangelands have increased six to tenfold in the past few years. We believe that integrated brush management systems which employ combinations of brush control methods including mechanical means and environmentally safe chemicals offer the most cost-effective approach to solving our U.S. brush problem, and resultant environmental degradation.

The approach we have found to be most successful in implementing nonpoint source control programs is founded upon a voluntary approach with educational and technical assistance and, where

needed, financial assistance. This assistance is made available through locally elected and governed soil and water conservation districts. Water pollution abatement plans are developed with individual landowners within the framework of a comprehensive soil and water conservation plan for each farm, or ranch in the district. Full landowner involvement in this on-the-land planning process helps insure the full implementation of the plan. The plan thus developed with the landowner and not for him is one which he supports and is committed to carrying out on a voluntary basis.

We believe the results speak for themselves and reflect the success of this approach. As an example, in Texas, data supplied by the Texas State Soil and Water Conservation Board shows an upward trend in land adequately treated since that agency developed its statewide control strategy for agricultural nonpoint source pollution.

Mr. Chairman, in my prepared statement on page 5, you will see that we have listed some statistics which may be of interest to members of the committee.

It is noteworthy that these accomplishments have been made in spite of reduced technical and financial assistance and severely depressed prices for agricultural products.

Our industry has also taken a major initiative to inform all of our members on steps to take in achieving water pollution control from point and nonpoint sources through a publication entitled "A Cattlemen's Guide to Water Pollution Control and 208 Water Quality Planning." Mr. Chairman, I am submitting for the record a copy of this guide developed by the National Cattlemen's Association. We are also submitting for the record an article which recently appeared in the Ranch magazine which illustrates the success of a range management program in Texas.

We also have another publication to be published shortly that summarizes a 208 water quality seminar proceedings conducted at our last annual meeting.

The purpose of a nonpoint source pollution program should be to improve both quality and quantity of water. When such a program is implemented, the result is more clean clear water for municipal, industrial, agricultural, wildlife, and aquatic uses. Water quality means many things to many people, but seldom is the term well defined. Water, and especially good water, is taken for granted perhaps because water is so abundant on our planet. However, the ranching and farming industries know the value of good clean water since water is typically in short supply on our Nation's grazing lands. Our livestock and our families depend on a continuous supply of water of the highest quality. As scarce as our water supply is, its usable quantity must be increased and pollution reduced or maintained at an acceptable level. Water is our survival.

In my prepared remarks, I have a list of 11 recommendations of the National Cattlemen's Association for a nonpoint source pollution control program.

We appreciate this opportunity to testify, and we hope you will consider our recommendations.

Thank you.

Mr. ROE. Mr. Hawley. Your statement will appear in full in the record.

Mr. HAWLEY. Thank you, Mr. Chairman. I will try to be brief and to the point.

I have submitted my statement and I will summarize a few brief comments, some of which may be responsive to questions raised by Members earlier today and some of which have not been discussed.

We believe that the 1972 Clean Water Act was probably the most major contribution the Congress can make to the nonpoint source issue. We say that because the major function of the act, in addition to stimulating planning and studies and monitoring and activities of that nature, has been to raise the visibility, public interest concern, and agricultural interest in nonpoint source control areas.

Out of the previous decade's history under the Clean Water Act, we have learned that, among other things, nonpoint source control is more than a runoff control program.

By way of example, in Lancaster County, Pa., which is an intensive dairy area, the livestock waste generated in that county is the equivalent of about 13 tons per acre per crop.

The historic best management practice was to return that waste to the land for the purpose of soil fertilization. They had come to understand in Lancaster County, Pa., aside from what other runoff problems they may have from that livestock waste disposal system, a far greater problem, a problem that has captured their imagination the concern has become a ground water problem with nitrogen. It was as a result of that problem they perceived to be of a major local concern, that they undertook a major project to determine if it is feasible to have a centrally located methane powered electric generating system.

When various people testified before this committee and talked about nonsource control in agriculture, they normally thought of it in the context of runoff control. That is an important dimension, but it is not the answer to problem.

We further learned that nonpoint source control in agriculture can be a money making venture for farmers rather than a cost item for farmers.

Let me reference parenthetically one of the previous witnesses used 1977 Iowa runoff data to illustrate the seriousness of the soil erosion problem.

Back to my point about nonpoint source control mechanisms paying rather than costing, since that 1977 study was done, there has been nearly a 100-percent increase in the acres of corn and beans in Iowa with no-till planning. No-till planning is a plan which reduces a farmer's production expense his energy consumption, and reduces runoff problems about 90 percent over non-no-till technology.

We get substantial water quality benefits plus some economic advantages for farmers where that technology is applicable. I emphasize that, because no-till technology is not uniformly applicable in every State in every crop across the country.

The solution to the nonpoint source problems, as we see it, is to provide an opportunity for farmers to identify the practices in their regions that truly make sense on the farm.

There has been a strong cry from some people who have testified here today for regulatory programs, for mandatory implementation, for deadlines, and carrots and sticks and other things.

We urge the committee to consider an entirely different approach. We urge the committee to recognize that point source is a normally closed system problem. If you have a factory, you do not have influences of weather. You have a closed, manageable system that that can be and has been effectively dealt with by regulatory programs, by permit, by effluent limits, and all of those technologies you are familiar with.

Agriculture is different. Agriculture is different because we get hit with a rainfall we cannot anticipate. One area may get 10 or 15 inches of rainfall in a season or in 1 day. Nonpoint source pollution is possible that day.

Sometimes we have such problems imposed upon us by Government action. I do not mean to be a nay sayer about Government actions, but not many years ago the Government, for what it perceived to be important reasons took off a control for corn routworm in the Corn Belt. Farmers plowed all of the cornstalks down that fall so there would not be a habitat for the insect to reinfest the crop next year. In the Indiana-Illinois area, they had a snowfall which melted off one day in a big rain, and it took literally hundreds of thousands of tons of Midwest soil away as these farmers tried to manage their farms by the best technology tools they had.

We are doing better now than we did then because we know more about the problem. We have new solutions.

These solutions have been brought to agriculture in a variety of techniques from across the country.

One narrow and not intended to be a self-serving example, a year ago, my organization, the American Farm Bureau, launched a nationwide program to encourage States on a county-by-county basis to develop demonstration projects utilizing our own money to encourage farmers to consider this new technology of no-till planning where it will work. We believe this will make farmers money and, coincidently, solve the runoff control problem to a great extent.

I would be happy to respond to any questions.

Mr. ROE. The Chair recognizes Mr. Daub of Nebraska.

Mr. DAUB. I thank the chairman very much.

I want to thank Mr. Hawley particularly for appearing before the subcommittee today to address the issue of nonpoint source pollution.

I had the privilege of serving on Nebraska's environmental program for 2 years, and we dealt with agricultural issues which you have raised.

I have read your testimony carefully. It is clear to me the issue has to be addressed. Yet, those of us representing constituents that make their livelihood with the land remain concerned about any action taken at the Federal level. At least it has to be practical and realistic.

I think every committee and subcommittee I belong to has been meeting all day long. But in the interest of time, I would just like to ask Mr. Hawley if I sent him three questions which I have personally prepared for this hearing, he would respond, and that the answers be included at this point in the record.

Mr. ROE. Without objection, they will be included.

Mr. DAUB. They deal with funding demonstration projects and State initiatives that were undertaken without any nudge from the

Federal Government, and they deal particularly with how they might be more encouraging.

You said a moment ago carrot and stick. I would like you to answer those three questions, and you have been given permission by the chairman to answer them and include them in the record at this point.

[The questions posed and responses received follows:]

AMERICAN FARM BUREAU FEDERATION,
Washington, D.C., November 18, 1983.

Hon. ROBERT A. ROE,
Chairman, Water Resources Subcommittee, Committee on Public Works and Transportation, Washington, D.C.

DEAR CONGRESSMAN ROE: Enclosed for your information are the responses to the three questions addressed to me by Congressman Daub with regard to non point source pollution.

Sincerely,

BRUCE HAWLEY,
Assistant Director, Washington Office.

QUESTIONS FOR BRUCE HAWLEY—AMERICAN FARM BUREAU FEDERATION, WATER RESOURCES SUBCOMMITTEE—NOVEMBER 16, 1983—NONPOINT SOURCE POLLUTION

Preface: I'd like to thank Mr. Hawley for taking time to appear before the subcommittee to address the issue of non-point source pollution. It is clear that this issue must be addressed, yet those of us representing constituents who make their livelihoods from the land remain concerned that any action taken at the federal level must be practical and realistic. I therefore appreciated your comments on the issue.

1. Q: Mr. Hawley, your testimony alluded to the ineffectiveness of cost-share programs operated by USDA's soil conservation service, in reducing soil erosion. Long a concern of mine, I wonder if you could elaborate as to the advantages of funding demonstration projects, as opposed to providing cost-sharing as a means of reducing agricultural non-point source pollution.

2. Q: You also indicated that some states have made gains in combating non-point source pollution, on their own initiative. Could you provide the committee with a few examples?

3. Q: Other witnesses before this subcommittee have expressed the belief that non-point sources may contribute as much as 50 percent of the known pollution levels in many areas, so we are well aware that the problem needs addressing. Nonetheless, many have been hesitant or unable to prescribe federal remedies. Other than funding demonstration projects, how do you believe the Federal Government could encourage activities at the State and local levels to deal with non-point source pollution?

Again, Mr. Hawley, let me express my thanks for your testimony. I'm sure your comments will be helpful to the subcommittee.

Response to Question 1: I did not mean to appear to be totally negative with regard to the SCS program. In fairness, they have been given an ambitious task, level funding for the past decade, an an expanded list of objectives, including energy self-sufficiency on the farm, enhanced wildlife habitat, urban run-off control, and more. It's probably no wonder they currently achieve only 13 percent of their money as "on the land" practices on land identified as having serious erosion problems, according to USDA's 1980 Resource Conservation Assessment.

By contrast, in Wabash County, Indiana and Livingston County, Illinois, demonstration projects on soil conservation began at 300 acres the first year, 600 acres the second year, and during the third and fourth year, farmers adopted the practices on 3,000 acres and 6,000 acres respectively. The "multiplier effect" of these demonstration projects has been 10 fold in only four years, with no limit in sight. Incidently, these programs were local initiatives, tailored to local soil types, cropping practices, and farmer needs—a key factor in their success.

Response to Question 2: The state of Mississippi ranks third in the nation for annual cropland loss per acre. They have responded with an ambitious demonstration program involving 19 agencies and organizations. The program will custom tailor conservation plans for selected farms to combine a variety of run-off control measures. The project's aim is to reduce by 50 precent the total state-wide soil loss in five years.

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In the Old Town Creek watershed in Mason County, West Virginia, cooperating agencies and agricultural groups worked together to implement "best management practices" over the entire 27,000 acre watershed. The two-year program involved educational work among farmers and implementation of 114 vegetative practices and 32 engineering practices. The program has included grassed waterways, stream bank erosion control, and pasture management with a net gain of 10 percent per year.

Response to Question 3: Without intending any disrespect of federal intentions, the federal government could help best by keeping out of the way of the substantial progress currently being made. Any federal "assistance" is necessarily coupled with a requirement of plans submitted and approved prior to any action—probably costing a year or more and quite a bit of money—and follow-up reports of expenditures, monitoring results, needs' assessments, and more. These paper pushing activities divert needed manpower, money, and time from ongoing programs. We don't believe federal intervention into the process will help, and may substantially harm current progress.

Mr. ROE. The gentleman from Minnesota.

Mr. STANGELAND. I want to thank both gentlemen for their testimony. I think most of the testimony confirms, or reaffirms much of what we heard from both the Department and from the TVA, Mr. Coy, and I can assure you your suggestions and recommendations will be gone through carefully, since you did not take the time to read them into the record.

I would ask both of you, and particularly you, Mr. Coy, since you are a practicing farmer, how familiar are you with the ACP program? As you look ahead, can you find ways that ACP money can be made more beneficial to our conservation end, as opposed to the gentleman from the TVA who testified that the ACP money often was used on the production side rather than on the conservation side?

Being a farmer, you are familiar with the programs, and you and the Cattlemen's Association can come to us as to how to better use ACP to stimulate farmers better to participate in conservation practices.

Mr. COY. I agree with you that we have to concentrate on the conservation practices, and you are absolutely correct in stating that, in the past, a lot of them have actually been production incentives, and I really agree with you that we need to stress conservation practices more.

Mr. HAWLEY. If I might respond to that also, the ACP program has been frozen at its existing fund level for the last decade, meaning that we have a lesser Federal commitment to the Federal conservation program, as witnessed by dollars.

Even more disturbing, in that past decade, there have been a number of congressionally mandated responsibilities loaded into that program. The conflict may not be so much between conservation activities versus production activities, as the fact that the conservation program has been mandated as well, to include wildlife habitat programs, urban runoff programs, and a whole host of other things, all of which may be important issues, but all of which, incidentally, detract from that program serving its original purpose of agricultural runoff control.

Mr. STANGELAND. I am a farmer myself, and we all have our little sacred cows. When we start to monkey around with programs in those fields, that community comes in and says, hey, don't touch our program.

I think if the agricultural community would recognize we really do not need stimuluses through an ACP program for production, but a program to assist the farmers, and make it easy for us to put it into conservation and cite the need for nonsource pollution control, and be able to provide more money into that program for the future, then I would like to have both of you address your attention to the future to the bill introduced in the Senate and House, known as the sodbusters' bill.

It is a disincentive for people to go in and break up large tracts of fragile rangeland, and put it into production, and become part of the farm's program of farm supports and deficiency payments in the cropping area.

As cattlemen I should think you would be concerned. I am a cattleman, as well, and that has not been a very profitable enterprise over the last few years, and a lot of fellows have been getting out.

I do want to thank you for your testimony. You have been of great help to us, in looking at some of this other legislative language, and I think the sodbusters' bill will go directly to the question of nonpoint source pollution in the end, eventually, and the question of land conservation.

Thank you very much.

Mr. COY. If I may comment on the sodbuster issue, basically our industry has been more conservation minded with crop rotations, as I said in my testimony. We have more forages, so the livestock industry has been keeping land in forage, on its own, voluntarily, and actually we are not getting paid for it.

Mr. HAWLEY. The American Farm Bureau Federation have been aggressively supporting the sodbusters' bill for the last 2 years. That would not have happened 10 years ago. There has been a substantial evolution in the philosophy of farm groups and farm people about our responsibility in the area of environmental issues.

We ask that Congress take note of that, as it fashions this legislation. The farmers have come to the right place, and are doing the right thing, as rapidly as they can, and more rapid progress will be made if things do not get polarized in trying to ram something down the farmers throat, that may not work as well as what is already being done.

Mr. ROE. We want to thank both of you very much.

One more point for clarification.

In Mr. Coy's testimony, he spoke to the issue that when we are considering the Clean Water Act relating to nonpoint source pollution, control programs should be so structured as to address nonpoint source pollution of agricultural lands in one section, and nonpoint source pollution of nonagricultural lands in another.

I think that is a very important point. Would you just like to comment on that a moment?

Mr. COY. Yes; I would.

It goes back to the same site specific point I alluded to in my testimony that a federally mandated program will not work in all areas in all States. It goes back to the point that one farm will not be able to use the same practices that another farm in the same State, or in the same section of the State, because they will have different practices.

In fact, even within agriculture grazing and raising crops are actually two different operations, and we have differences in operations in my State of Iowa, and the practices would not apply to one farm, where they could apply to another.

Mr. ROE. You sat through a lot of testimony today.

Mr. COY. Yes.

Mr. ROE. What I am trying to develop in my own mind is where we spoke to the issue that everything that was not considered to be point source, meaning municipal or industrial outfalls, were thrown into the nonpoint sources, that's what it amounted to.

In Wisconsin's experience, in the work they have been doing, they have been able to and I hate to get into the details of this, get from the acid waters and things of that nature which would all fall in the other category.

It seems to me that when we listen to the testimony further from the Agriculture Department, and you both elucidated on that in your testimony, there had been ongoing programs for years in management and conservation and improvement of farm production, and so forth.

So it seems it would be logical now to look to the issue and say, in view of the fact that we are not, in fact, breaking new ground in the agricultural field, that we have a program to build on, so let us not reinvent the wheel.

What do we do to strengthen the conservation programs and the soil erosion programs that are existing, and refine them, or whatever we need to do to improve the conservation of our farmlands?

We have something going there. In the other areas, nonpoint source runoff, we do not have the laws, or the mechanisms in place.

So, therefore, there is an element of logic, in fact, in your suggestion that the agricultural should at least be a subsection, or whatever, and treat it differently.

Mr. HAWLEY. We very much believe the answer to your question is demonstration projects. To put it in the context of the land grant institutions and the extension service, which has been a tool that has brought agriculture into the forefront of production worldwide, a nonparalleled example, we can do that in the nonpoint source control program. We do not need regulatory programs. They will probably be counterproductive, for the simple reason that it is not possible to write in Washington a regulatory program, a specific program, that will work across the country.

Instead, on a local basis, the Federal Government's role could very well be restricted to assisting the local people, and providing demonstration and education projects on the farm that the farmers will, in fact, adopt.

Mr. ROE. I understand that, but when Washington decides an issue, they regrettably do not consider the Nation to be different. Everybody is supposed to all be the same.

You have provided a mechanism, in my judgment, in your testimony, and in the testimony in the last 2 days particularly, which has fortified your position that if there is any treatment of nonpoint source to be involved, let us not put everybody in the same bucket, and say that is going to be the solution. Or is it going to work that way?

You both testified to that. All I am suggesting is, there is a good, valid reason to separate those two. Is that a reasonable point to make?

Mr. COY. That is correct.

Mr. HAWLEY. That is correct.

Mr. STANGELAND. I have been asking everybody this same last question, about the incentive programs with grants turning out to be disincentives.

In your testimony, Mr. Hawley, on the cost-share programs for soil conservation practices, farmers have been known to hold back with practices until the money was available for cost sharing, and then go ahead with them.

So, you can see if there is not enough money in the program to go around, it can be a disincentive to progress, despite what other have said.

Mr. Coy, would you care to comment on that?

Mr. COY. Yes; I think probably if there are any Federal funds, or Federal assistance, it should be a type of seed money. We should really concentrate on research, education, and small pilot projects on some of these watersheds, small watersheds, to see the effects of some of these practices, and what is really happening.

For example, we have some reservations about the use of the universal soil equation [USLE] in a small watershed area, or on a small farm. When we think about soil: If it moves just 1 foot, can we say that 5 tons have moved off? When you begin to consider larger watersheds—from the streams to the rivers—if you apply that same principle, well, the Mississippi River would be completely plugged with sediment, if you really lost that many tons of soil.

So there are some discrepancies in that soil loss equation. That is one subject on which we need to do some work.

Mr. STANGELAND. What county are you from?

Mr. COY. My mailing address is Elmore, Minn., so I am as far north in Iowa as you can get.

Mr. STANGELAND. Thank you.

Mr. ROE. Again, we want to thank you for your splendid testimony. You have been a big help to us, and we appreciate your efforts and patience.

Now the one who gets the medallion for patience and fortitude is the representative of the National Association of Manufacturers, Mr. Harold Jensen, who is director of energy conservation and environmental control of Warner-Lambert Co., Morris Plains, N.J.

Again, we want to particularly thank you for taking your time because we are coming down the homestretch now.

You gentlemen are the last witnesses today, but tomorrow we intend to round out, as best we can, all of the backlog of witnesses.

Of course, we have had the advantage of hearing from the administration, both from the EPA and the Department of Agriculture and the Department of the Army, and all of the administrative agencies that are involved.

Now, you are returning with some of the observations we asked for.

Mr. Jensen, the full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY BY HAROLD JENSEN, DIRECTOR, ENERGY CONSERVATION AND ENVIRONMENTAL CONTROL, WARNER-LAMBERT CO.

INTRODUCTION

Mr. Chairman, we at the National Association of Manufacturers (NAM) appreciate being called back for additional testimony on Clean Water Act reauthorization by this distinguished House Subcommittee on Water Resources. We have previously stated facts concerning the importance of water to manufacturing processes and the fact that NAM is the most representative organization of water-using manufacturing companies.

The National Association of Manufacturers is a voluntary business association of over 13,000 corporations, large and small, located in every state. Eighty percent of the firms are considered to be small businesses. NAM member companies employ 85 percent of the nation's manufacturing and produce over 80 percent of the nations manufactured goods. NAM is affiliated with an additional 158,000 businesses through its Associations Council and the National Industrial Council.

I am Harold L. Jensen, Director of Energy Conservation and Environmental Control For Warner-Lambert Company, Morris Plains, New Jersey, and Chairman of the NAM Water Task Force. I am accompanied by Louis C. Gilde, Director of Environmental Programs, Campbell Soup Company, and Daniel W. Cannon, Director of Environmental Affairs, National Association of Manufacturers.

NONPOINT SOURCES OF WATER POLLUTION

One of the points we were asked to expand upon is that of control of nonpoint sources of pollution. These remarks are made from a business management viewpoint and not from a political science standpoint. There are several classes of nonpoint sources of water pollution, such as construction projects; drainage from streets, roads, and parking lots; drainage from tilled land; and drainage from untilled land. Each class will respond to a different program, and there should be a different mix of programs in different watersheds. Frequently, the most effective programs will be operating practices rather than high cost capital projects. Examples of operating practices are construction controls, street sweeping, anti-litter campaigns, pet control in cities, sound fertilizing practices, and sound chemical application practices.

EPA can play an important role in technical assistance, but administration of nonpoint source control programs should be at the local, State, or interstate level. Each class of nonpoint sources in each watershed can best determine the most effective incentive for that class of sources. In the case of farming, the Soil Conservation Service and county agents are ideal agencies already in place to provide training in these practices. Some successful case histories should be helpful.

One such example is Lake Quinsigamond of Massachusetts where water quality sampling revealed nonpoint source problems on the lake in the late 1960's and early 1970's. The lake is transected by two major east-west highways. Algal blooms flourished in the summer months and bacterial counts were abnormally high often forcing swimming areas to close.

Winter salting on the highways was reduced, and the state and the local community shared the cost of applying copper sulfate to control the remaining algae at the lake's lower end. The lake quality commission sponsored spring and summer street clean up days. All of that has helped. Dissolved oxygen levels now meet standards, suspended solids, ammonia, nitrates, phosphorus, and bacterial counts are all within acceptable levels. Fishing, boating, and swimming are all on the increase.

Another project involved the Black Creek Watershed in Allen County Indiana. The project was designed to show whether traditional soil and water conservation programs have a significant beneficial impact on water quality, and whether voluntary programs, encourage by incentive payments produce land use practices effective in improving water quality. The study was a research and demonstration project funded by a grant from EPA and carried out by the Allen County Soil and Water Conservation District, with assistance from the U.S. Department of Agriculture Soil Conservation Service, Purdue University, and the University of Illinois.

After 5 years of effort, investigators were able to draw some tentative conclusions concerning the impact of agriculture and land use on the Black Creek environment. The project showed that nitrate loading typical of agricultural watersheds was not high enough to threaten drinking water standards if conventional controls on nitrate use were applied, but phosphate concentrations were high enough to threaten the water quality goals for Lake Erie. As expected, significantly greater sediment loadings were produced during high runoff periods. The conventional methods for

controlling nitrates include careful scheduling of fertilizer application and reducing the amount of nitrogen in the fertilizer used.

Although phosphate levels were high enough to be of concern, the study indicated that significant reductions of phosphate levels can be achieved through control of sediment. Simulated rainfall tests demonstrated that raindrop impact is of principal importance in the detachment of soil particles, which in turn results in the erosion of high sediment in the stream. Farming techniques which maximize surface residue, thereby providing better soil cover and subsequent protection from the erosive effects of rainfall, were found to be the most important practices in preventing erosion.

Another practice found to prevent sediment from reaching waterways included establishing vegetative borders around fields, constructing terrace systems to shorten slopes, and constructing sediment basins.

The investigators developed a computer model called ANSWERS to simulate sediment particles in transportation. It helps identify areas with small watersheds that have proportionally greater impact on water quality. The model is useful for those who need to identify areas within a basin where control of erosion is most critical to success of the areawide plan. The Black Creek project has provided a data base that gives a better understanding of the facts contributing to nonpoint source pollution from agriculture and the best methods for keeping such pollution to a minimum.

The 7 states in the Colorado Basin joined with EPA and the Department of Interior in December 1973 to agree on a new salinity control policy. The combination of a basically arid climate, geology of the region, and water-consuming human activities have created a serious salinity problem in the basin. Salinity is, in fact, the most serious basin-wide water quality problem in the Colorado River. The most significant natural contribution resulted from weathering, decomposition, and erosion of rock formations and soils in the basin. Among man's activities, irrigation is the primary contributor to Colorado River salinity. Other actions, such as grazing, water impoundment in reservoirs, the resultant evaporation, and the "exporting" of the river's waters also increase the salinity. The lower states together with Mexico have been bearing the brunt of salinity in the form of lower crop yields and additional costs for public drinking water supplies.

There have been some successes in reducing salinity through improvements in on-farm irrigation practices. Another effort included the continued implementation of NPDES permit policy in the control of the salinity in urban and industrial discharges. A revised implementation plan identifies a greater role for Section 208 areawide water quality management programs, cites opportunities to improve on-farm irrigation practices, and calls for the development of State salinity strategies by the individual basin States. Salinity problems in the Colorado River are particularly complicated. Involved are natural climatic and geologic processes, a variety of land and water use activities, complex State and interstate water allocation systems, and international concerns.

Among the conclusions to be drawn from considering these case histories are the value of joint effort through an association of all interested groups. Farmers, townspeople, those with interest in good drinking water supplies, and representatives of business and industry, should join together to control nonpoint source pollution in their local area. Many activities can be carried out by individual voluntary efforts without the need for large amounts of funding. Many planning activities have been carried out under Section 208 of the Act. Future activities should be built upon the foundations that have already been erected under Section 208. The official policy statement of NAM on "Watershed Improvement" is attached to this testimony.

The experience of the Ohio River Valley Water Sanitation Commission (ORSANCO) is also instructive. Program goals in the Ohio Valley were attained with little resort to the use of legal proceedings. This was expressed in a letter dated February 28, 1958, from William Foster, Senior General Counsel, U.S. Steel Corporation to Henry F. Hebley, research consultant to Pittsburgh Consolidation Coal Company. Mr. Foster stated: "The power of the Commission is clear and unambiguous. To date the Commission has not had to use its power to accomplish its objectives, and in many instances each individual state carries out through the machinery within the state, pollution-abatement programs favored by the Commission. This is a practical working arrangement since in many states the representatives of each state on the Commission are also members of the pollution control machinery of the particular state . . . The fact that these voluntary methods of accomplishing results have been used by the Commission since 1948 does not eliminate the possibility that the Commission may in the future elect to use the legal powers vested in it by the compact. . . ." Dr. Edward J. Cleary, long time executive director and chief engineer of ORSANCO, commented in 1967 that "It would be fair to say that thus far the conscien-

tiousness of the states in meeting obligations imposed by the compact, coupled with application of persuasive measures by the Commission in lieu of litigation, has minimized the need for enforcement proceedings in advancing program objectives." (*The ORSANCO Story*, p. 215, by permission of Johns Hopkins University Press.) *The ORSANCO Story* also briefly describes the Delaware River Basin Commission. "Among other things, the Delaware commission is empowered to: (a) adopt and keep current a comprehensive plan for development of water resoruces and insure that all new projects or facilities having a substantial effect upon waters of the basin are carried out in conformance with this plan; (b) work with and through existing federal, state, and local agencies—or directly when necessary—in planning, constructing, operating, and maintaining dams, reservoirs, and other facilities, as well as conduct other programs, for the purposes of flood-damage reduction; water-quality improvement; municipal, industrial, and agricultural water supply; recreation and fish and wildlife improvement; hydroelectric power generation; soil conservation, forestation, and watershed management; (c) make future allocations of the waters of the basin among the four states and their political subdivisions in accordance with the Supreme Court doctrine of equitable apportionment which takes into account alternative sources, relative needs, and changing uses; and (d) regulate the volume of withdrawals or diversions in areas where water shortages threaten to develop, or in areas where an actual emergency shortage has developed.

"Financing for the Delaware River Basin Commission activities is authorized from two sources: general public funds, and direct-user funds for facilities without anticipation of repayment where the benefits are widespread and in the general public interest. Where the beneficiaries can be specifically identified and the benefits are measureable (as, for example, in the sale of hydroelectric power) use charges can be levied. Accordingly, the commission operations may be financed by a current expense budget to be apportioned among the signatory parties; by appropriations, grants, or loans from federal or state governments; by issuance of revenue bonds; and by charges for products and services."

COST OF WATER

We were also asked to provide some information on the cost of water. The following data comes from several companies that conducted random samples of plants throughout the nation. Thirteen water systems in nine States were surveyed. The survey revealed that the cost of water depends on the source, availability, and on treatment needed to upgrade the quality of the raw water to the level needed for the intended use. In general, cooling water costs less than water for employee consumption or food processing. Indicated raw water supply costs ranged from $0.05/1,000 gals. to $0.90/1,000. The mean cost was $0.36/1,000 gals. However, that is only part of the cost of water because it must be returned to the environment in acceptable condition. The cost of wastewater treatment ranged from nothing in the case of cooling water to $50.00/1,000 gals., with the mean being $3.62. However, the $50.00 figure relates to a special case; for the vast bulk of industrial wastewater treatment, a more general range of costs may be in the neighborhood of $0.75/1,000 gals.

INTEGRATED FACILITIES

As requested, we made a limited survey of companies which led us to the conclusion that at least 30 percent of all manufacturing plants are integrated. The limited survey listed plants from 35 states, and there were as many as 6 classifications in a single plant. One company with more than 200 manufacturing plants has 62 percent integrated, and 13 percent not classified. Only 24 percent are single category plants.

SUMMARY OF POINT SOURCE CONTROL PRINCIPLES

In our October 20, 1983 testimony, we listed 6 principles to guide any program to deal with the non-point source pollution control problem. We were asked to summarize the part of our testimony dealing with point sources in similar fashion. The following are principles derived from that part of our testimony:

1. Since water is such a pervasive element of the whole production system, unwarranted costs imposed on the use of water adversely affect every member of our society.
2. It is the responsibility of the Congress to exercise the utmost wisdom in tailoring the nation's laws so as to achieve national objectives in ways that avoid excessive costs.
3. The Clean Water Act provides a good framework for a sound national water pollution control program that meets such criteria. However, no law is perfect;

there are some imperfections in the Clean Water Act which could be corrected by the Congress in the process of reauthorization.

4. We urgently plead with the Committee to introduce some flexibility into the pretreatment requirements of the Clean Water Act.

5. The pretreatment section should also be amended to give consideration to the problems of integrated facilities with combined wastewater stream flows.

6. The Congress should provide the same incentives for innovative technology to indirect dischargers as it presently provides to direct dischargers.

7. Water quality standards should have some degree of flexibility. Designated uses should not be frozen as of any particular date.

8. Section 301(e) should be amended to make clear that the use of the bubble concept is authorized under the Clean Water Act.

9. BAT limitations should be required only where there is a significant toxics problem.

10. We support the extension of the Clean Water Act for two fiscal years; we question the wisdom of reauthorizing the Act for four or five fiscal years.

CONCLUSION

We thank the Subcommittee for the opportunity to appear again on the vitally important matter of reauthorizing the Clean Water Act.

WATERSHED IMPROVEMENT

Industry believes that natural watersheds are, in most cases, the most feasible units for conservation, development and wise utilization of the nation's renewable natural resources. Industry also believes that the watershed development concept should embrace the whole complex of major renewable natural resource problems. It should include upstream waterflow retardation, flood control, erosion prevention, protection of industrial and municipal water supplies, abatement of pollution, drainage and irrigation where necessary, recreation, forest and range management—all directed toward the best practicable use and care of all lands. To accomplish these objectives, industry recommends:

1. That the community watershed or small drainage area be recognized by all concerned as the natural unit through which renewable natural resources can be most efficiently and most satisfactorily developed.

2. That local authorities and leaders define watershed problems and determine needs by utilizing available basic information and that they obtain additional surveys where needed to define problems and develop adequate plans.

3. That local responsibility for action be assumed by watershed associations, soil conservation districts, or other voluntary local and state groups. Such responsibility would give emphasis to the rights of individuals and groups of individuals to participate in planning, developing, and maintaining their own community watershed programs, and provide a means of relating such local programs to those of interstate or basinwide scope.

4. That after suitable and adequate community watershed planning is done, local authorities should determine and establish the kind of local organization needed to direct the operational and maintenance programs, and make full coordinated use of existing public agencies, industry groups, associations and individuals in a position to contribute to its success.

5. That a federation of community water shed associations on a state or interstate (agreement or compact between two or more states) basis be encouraged to develop and carry out plans on larger stream basins where such unified approach is most feasible.

Industry believes that foregoing principles should become the policy for a fully integrated approach to the conservation, development and utilization of renewable natural resources in the United States; and that with such approach responsibility lies with those who derive the benefits therefrom.

Industry further recommends that, wherever necessary to permit the effectuation of these principles, the various states consider the adoption of suitable legislation recognizing watershed development as state or interstate (by agreement of compact between two or more states) responsibility.

Mr. ROE. Please proceed.

TESTIMONY OF NATIONAL ASSOCIATION OF MANUFACTURERS, HAROLD JENSEN, DIRECTOR OF ENERGY CONSERVATION AND ENVIRONMENTAL CONTROL, WARNER-LAMBERT CO., MORRIS PLAINS, N.J., ACCOMPANIED BY LOUIS GILDE, CAMPBELL SOUP CO., CAMDEN, N.J.; AND DANIEL W. CANNON, DIRECTOR OF ENVIRONMENTAL AFFAIRS, NATIONAL ASSOCIATION OF MANUFACTURERS, WASHINGTON, D.C.

Mr. JENSEN. Thank you, Mr. Chairman.

I will skip over a few of the points in the prepared testimony. We have introduced ourselves as the National Association of Manufacturers, and accompanying me, on my right, is Mr. Daniel W. Cannon, and on my left is Mr. Louis Gilde.

One of the points we were asked to expand upon is that of control of nonpoint sources of pollution. These remarks are made from a business management viewpoint and not from a political science standpoint. There are several classes of nonpoint sources of water pollution, such as construction projects; drainage from streets, road, and parking lots; drainage from tilled land; and drainage from untilled land. Each class will respond to a different program, and there should be a different mix of programs in different watersheds. Frequently, the most effective programs will be operating practices rather than high cost capital projects. Examples of operating practices are construction controls, street sweeping, antilitter campaigns, pet control in cities, sound fertilizing practices, and sound chemical application practices.

EPA can play an important role in technical assistance, but administration of nonpoint source control programs should be at the local, State, or interstate level. Each class of nonpoint sources in each watershed can best determine the most effective incentive for that class of sources. In the case of farming, the Soil Conservation Service and county agents are ideal agencies already in place to provide training in these practices. Some successful case histories should be helpful.

One such example is Lake Quinsigamond of Massachusetts where water quality sampling revealed nonpoint source problems on the lake in the late 1960's and early 1970's. The lake is transected by two major east-west highways. Algae blooms flourished in the summer months and bacterial counts were abnormally high often forcing swimming areas to close.

Winter salting on the highways was reduced, and the State and the local community shared the cost of applying copper sulfate to control the remaining algae at the lake's lower end. The lake quality commission sponsored spring and summer street cleanup days. All of that has helped. Dissolved oxygen levels now meet standards: Suspended solids, ammonia, nitrates, phosphorus, and bacterial counts are all within acceptable levels. Fishing, boating, and swimming are all on the increase.

Another project involved the Black Creek watershed in Allen County, Ind. The project was designed to show whether traditional soil and water conservation programs have a significant beneficial impact on water quality, and whether voluntary programs encouraged by incentive payments produce land use practices effective in improving water quality. The study was a research and demonstra-

tion project funded by a grant from EPA and carried out by the Allen County Soil and Water Conservation District, with assistance from the U.S. Department of Agriculture Soil Conservation Service, Purdue University, and the University of Illinois.

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Although phosphate levels were high enough to be of concern, the study indicated that significant reductions of phosphate levels can be achieved through control of sediment. Simulated rainfall tests demonstrated that raindrop impact is of principal importance in the detachment of soil particles, which in turn results in the erosion of high sediment in the stream. Farming techniques which maximize surface residue, thereby providing better soil cover and subsequent protection from the erosive effects of rainfall, were found to be the most important practices in preventing erosion.

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the continued implementation of NPDES permit policy in the control of the salinity in urban and industrial discharges. A revised implementation plan identifies a greater role for section 208 areawide water quality management programs, cites opportunities to improve on-farm irrigation practices, and calls for the development of State salinity strategies by the individual basin States. Salinity problems in the Colorado River are particularly complicated. Involved are natural climatic and geologic processes, a variety of land and water use activities, complex State and interstate water allocation systems, and international concerns.

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The experience of the Ohio River Valley Water Sanitation Commission [Orsanco] is also instructive. Program goals in the Ohio Valley were attained with little resort to the use of legal proceedings. This was expressed in a letter, dated February 28, 1958, from William Foster, senior general counsel, United States Steel Corp., to Henry F. Hebley, research consultant to Pittsburgh Consolidation Coal Co. Mr. Foster stated:

> The power of the commission is clear and unambiguous. To date the commission has not had to use its power to accomplish its objectives, and in many instances each individual State carries out through the machinery within the State, pollution-abatement programs favored by the commission. This is a practical working arrangement since in many States the representatives of each State on the commission are also members of the pollution control machinery of the particular area. The fact that these voluntary methods of accomplishing results have been used by the commission since 1948 does not eliminate the possibility that the commission may in the future elect to use the legal powers vested in it by the compact * * *.

Dr. Edward J. Cleary, longtime executive director and chief engineer of Orsanco, commented in 1967 that—

> It would be fair to say that thus far the conscientiousness of the States in meeting obligations imposed by the compact, coupled with application of persuasive measures by the commission in lieu of litigation, has minimized the need for enforcement proceedings in advancing program objectives. [The Orsanco Story, p. 215, by permission of Johns Hopkins University Press.]

The Orsanco story also briefly describes the Delaware River Basin Commission:

> Among other things, the Delaware Commission is empowered to: (a) adopt and keep current a comprehensive plan for development of water resources and insure that all new projects or facilities having a substantial effect upon waters of the basin are carried out in conformance with this plan; (b) work with and through existing Federal, State, and local agencies—or directly when necessary—in planning, constructing, operating, and maintaining dams, reservoirs, and other facilities, as well as conduct other programs, for the purposes of flood-damage reduction; water-quality improvement; municipal, industrial, and agricultural water supply; recreation and fish and wildlife improvement; hydroelectric power generation; soil conser-

vation, forestation, and watershed management; (c) make future allocations of the waters of the basin among the four States and their political subdivisions in accordance with the Supreme Court doctrine of equitable apportionment which takes into account alternative sources, relative needs, and changing uses; and (d) regulate the volume of withdrawals or diversions in areas where water shortages threaten to develop, or in areas where an actual emergency shortage has developed.

Financing for the Delaware River Basin Commission activities is authorized from two sources: general public funds, and direct-user funds for facilities without anticipation of repayment where the benefits are widespread and in the general public interest. Where the beneficiaries can be specifically identified and the benefits are measurable—as, for example, in the sale of hydroelectric power—use charges can be levied. Accordingly, the commission operations may be financed by a current expense budget to be apportioned among the signatory parties; by appropriations, grants, or loans from Federal or State governments; by issuance of revenue bonds; and by charges for products and services.

We were also asked to provide some information on the cost of water. The data come from several companies that conducted random samples of plants throughout the Nation. Thirteen water systems in nine States were surveyed. The survey revealed that the cost of water depends on the source, availability, and on treatment needed to upgrade the quality of the raw water to the level needed for the intended use. In general, cooling water costs less than water for employee consumption or food processing. Indicated raw water supply costs ranged from 5 cents per 1,000 gallons to 90 cents per 1,000. The mean cost was 36 cents per 1,000 gallons. However, that is only part of the cost of water because it must be returned to the environment in acceptable condition. The cost of wastewater treatment ranged from nothing in the case of cooling water to $50 per 1,000 gallons, with the mean being $3.62. However, the $50 figure relates to a special case; for the vast bulk of industrial wastewater treatment, a more general range of costs may be in the neighborhood of 75 cents per 1,000 gallons.

[The following was received from Mr. Jensen:]

California canneries, suppliers of most of the canned tomatoes and fruits consumed in the U.S., have to count on significant wastewater treatment charges during their operating season.

Expensive Discharges from Cannery Row

by Jerry L. Jones

Municipal charges for treatment of cannery wastewaters can absorb a significant portion of the profits of a typical cannery. Because of this, in municipalities with seasonally operated canneries, the possibility of plant closure is something to be considered in the planning of major new wastewater treatment projects.

Charges by municipalities for the treatment of seasonal cannery wastewaters are determined by a number of factors. In most cases, the important ones appear to be the effluent limitations imposed on the treatment plant, the size of the canning season, biochemical oxygen demand (BOD), and suspended solids (SS) loads relative to the non-canning season loads, the total capacity of the treatment plant, and the treatment processes employed. Estimated charges in selected California cities for treatment of the wastewaters from a typical cannery vary widely in terms of the total annual charges, the portion of the charges attributable to operations and maintenance costs, the portion allocated for capital costs, and the distribution of the annual charges between flow, BOD and SS.

Canneries located in California supply 85 percent of the nation's canned tomatoes and tomato products, 100 percent of the canned peaches, fruit cocktail, olives and apricots, and 30 percent of the canned pears. Tomatoes are by far the largest single crop grown for canning in California with about 6 million tons processed each year.

Although production acreages and canneries for the above-mentioned commodities are located throughout the state, they are concentrated in the Sacramento Valley, the San Joaquin Valley, the San Jose-Gilroy-Hollister-Salinas area, and the Imperial Valley.

A typical fruit or tomato cannery in California may process 75,000 to 100,000 tons per year of commodities. The largest canneries process up to 200,000 tons per year. The coincidence of the fruit and tomato harvests concentrate the operating periods of most fruit and tomato canneries between July and October. Normal processing campaigns for the major commodities overlap one another in the six-month

Table 1
Data Summary for Seven of the Treatment Systems Surveyed

	San Jose	EBMUD**	Stockton	Sacramento	Turlock	Hollister‡	Gilroy‡
Treatment Processes	Primary Activated sludge Nitrification Filtration Disinfection	Prechlorination Primary O_2 activated sludge Disinfection	Primary Trickling filters Oxidation ponds Dissolved air flotation Filtration Disinfection	Primary O_2 activated sludge Disinfection	Primary/flotation Activated biofilters/ Activated sludge Disinfection	Sedimentation pond Oxidation pond Percolation pond	Primary Aerated lagoon Percolation ponds
Sludge Processing and Disposal	Thickening Anaerobic digestion Lagoon storage	Thickening Anaerobic digestion Dewatering Hauling to land disposal	Thickening Anaerobic digestion Sludge filtration Dewatered sludge to land	Thickening Anaerobic digestion Lagoon storage (2 yr) Dedicated land disposal	Thickening Anaerobic digestion Aerobic digestion Sludge drying beds Sludge to land	— — —	Aerobic digestion Sludge drying beds Sludge to land
Average Flow—MGD							
Canning season*	102	69	33	136	8.5	7.6	3.79 (4 months)
Noncanning period	116	77	25	115	7.0	0	1.8 (11 month Aug.)
Number of major operating seasonal canneries served	8 (San Jose) 2 (Santa Clara)	1	6	2	1	2	2 canneries 2 dehydration plants

*July, August, September, early October.
**East Bay Municipal Utilities District in Oakland.
‡Municipally owned and operated treatment plants used solely for cannery wastes.

period of May through October.

The short canning season is not unique to California. Nationwide, about 75 percent of the total tonnage of fruits and vegetables are processed during the peak four months of harvesting activity. The capital investment in plant facilities is underused as a result of the relatively short season, and thus canners have always had difficulty in justifying new capital investments. The need for treatment systems during the last decade to treat waste waters for discharge or to pretreat them before transfer to municipal treatment plants has placed yet another demand on already limited budgets.

The wastewater treatment problem has been particularly troublesome to the canning industry because of the magnitude of the waste load. Compared with other industrial categories, the food processing industry has historically ranked near the top for conventional pollutants in the untreated or partially treated wastewater. When the first comprehensive industrial waste surveys were completed in the late 1960s, the food processing industry ranked fifth in total wastewater volume, third in total BOD loadings, and first in suspended solids (SS) loadings.

Fruit and vegetable processors discharge a much higher proportion of liquid wastes into public wastewater collection systems or to land treatment than do manufacturers as a whole. A nationwide survey conducted in the mid-1970s of 929 fruit and vegetable processing plants revealed that 55 percent of them discharged to municipal treatment plants, 33 percent used on-land treatment, and 12 percent discharged to bodies of water. Within California, which represented 15 percent of the surveyed facilities, 78 percent used municipal treatment plants, 16 percent discharged to land, and 6 percent discharged to bodies of water. Currently, no California fruit and vegetable processors discharge directly to

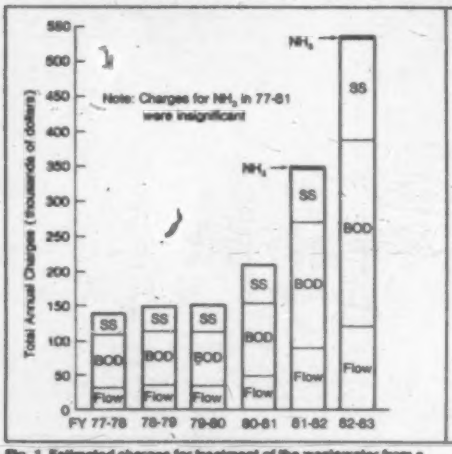

Fig. 1. Estimated charges for treatment of the wastewater from a typical cannery in San Jose, California.

Fig. 2. Locations of the cities considered in the survey of treatment charges.

bodies of water. Also, most of the newer seasonal canneries (built during the last 10 years), have located in rural areas where on-land wastewater treatment systems can be employed.

The canning industry is not particularly profitable. It has been reported that the entire U.S. canning industry typically has profits before taxes of 4 to 4.5 percent of total sales. Recently SRI International estimated that a typical fruit or tomato cannery in the San Jose area might earn $1 million per year in profits before taxes on $24 million in gross revenue; during poor years profits could be negative. Recent increases in the annual charges for wastewater treatment in the area could increase the wastewater treatment bill for an individual canner by $200,000 (**Fig. 1**). Such an increase in these charges significantly affects the profitability of a cannery and could be a major factor in deciding on relocating the operation or withdrawing from the business.

To determine how widely municipal wastewater treatment charges vary around the state, SRI contacted fifteen cities during early 1981 to survey the annual wastewater treatment charges for a typical cannery. Ten communities or sanitary districts (**Fig. 2**) provided information in a form suitable for comparison. The 10 cities have treatment plants which serve a total of 29 seasonal canneries or approximately one-third of the large seasonal canneries in the state.

Selected data on cannery wastewater volumes and loadings for some of the major commodities processed in California on a seasonal basis, and information obtained from specific canneries in San Jose, were used to specify the characteristics for a typical cannery. This hypothetical facility operates 75 days from July to October and processes an average of 1,000 tons of commodity per operating day.

Table 2
Expected Increases in Treatment Charges for FY '82-'83 Compared to FY '81-'82

City or Agency	Approximate Percent Increase in Rates for Next Fiscal Year
San Jose	45*
Stockton	29
EBMUD	21
Modesto	12
Sacramento	None

*Estimated by SRI to be a 53 percent increase for a typical cannery based on new rates established by the City of San Jose.

The estimated annual charges for a typical cannery discharging to various municipal sewer systems are shown in **Figure 3**. The results are surprising. There are very large differences in the total annual charges, as well as in the relative charges for flow, BOD and SS. There is approximately a sevenfold range in charges from a high of approximately $360,000 to a low of $50,000 [$3/1,000 gal treated to $0.40/1,000 gal treated]. In two instances (Gilroy and Hollister) the cities own and operate treatment systems used only for cannery wastes. As indicated in **Table 1**, these two plants have percolation ponds for disposal of the treatment plant effluent.

Treatment charges may vary from city to city depending on a number of factors:

- Total capacity of the plant.
- Effluent limitations imposed.
- Treatment processes used.
- Size of the seasonal load relative to the non-canning season load.
- Age of the treatment plant.
- Amount of federal and state grant funding received for construction of the facilities.
- Local labor and power costs.
- Availability and cost of land for low-cost treatment systems such as oxidation ponds and percolation ponds.
- Methods for processing and disposing of sludge.

These factors should explain most, but not all, of the absolute cost variation. Six cities charge separately for capital-related costs (bond interest and amortization) and O&M costs (**Fig. 3**). Capital-related charges represent 22 to 87 percent of the total annual charges or an average of slightly more than 50 percent of the total. The actual distributions of annual charges between flow, BOD and SS for the same six cities vary widely between various parameters (**Fig. 4**). The relative contributions of capital-related charges and O&M charges to each parameter are also evident in this figure.

Because of the small size of the sample and the wide variability in the cost distributions, the reader is cautioned not to consider the above average figures as statistically significant. Only two of the six cities (San Jose and Turlock) have cost distributions close to those of the calculated average.

The calculated annual charges shown are for FY 81-82. In most cases new rates became effective in California after July 1, 1982. **Table 2** summarizes the expected increases based primarily on information tabulated by the City of Stockton and provided by the California League of Food Processors. San Jose's rate increase reflects the significant costs of treatment plant modifications that are required to consistently meet very stringent effluent standards (**Fig. 1**). This rate increase is the second largest in two years.

About the Author
Jerry L. Jones is the director of the Chemical Engineering Laboratory for SRI International, Menlo Park, California.

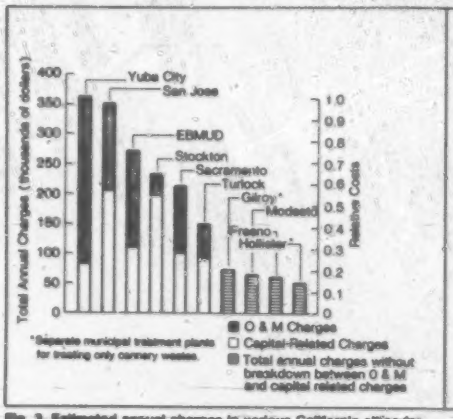

Fig. 3. Estimated annual charges in various California cities for treating wastewater from a typical cannery for FY 1981-82.

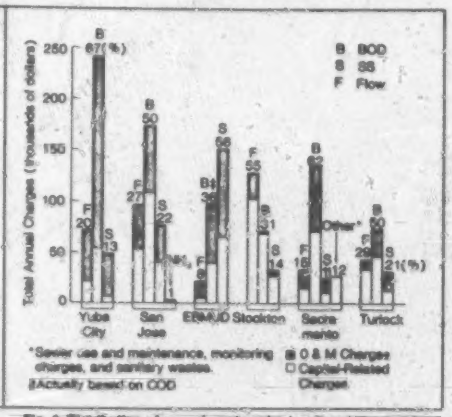

Fig. 4. Distribution of annual wastewater treatment charges for a typical cannery between flow, BOD and SS by selected cities.

Mr. JENSEN. As requested, we made a limited survey of companies which led us to the conclusion that at least 30 percent of all manufacturing plants are integrated. The limited survey listed plants from 35 States, and there were as many as 6 classifications in a single plant. One company with more than 200 manufacturing plants has 62 percent integrated, and 13 percent not classified. Only 24 percent are single category plants.

In our October 30, 1983, testimony, we listed six principles to guide any program to deal with the nonpoint source pollution control problem. We were asked to summarize the part of our testimony dealing with point sources in similar fashion. The following are principles derived from that part of our testimony:

1. Since water is such a pervasive element of the whole production system, unwarranted costs imposed on the use of water adversely affect every member of our society.

2. It is the responsibility of the Congress to exercise the utmost wisdom in tailoring the Nation's laws so as to achieve national objectives in ways that avoid excessive costs.

3. The Clean Water Act provides a good framework for a sound national water pollution control program that meets such criteria. However, no law is perfect; there are some imperfections in the Clean Water Act which could be corrected by the Congress in the process of reauthorization.

4. We urgently plead with the committee to introduce some flexibility into the pretreatment requirement of the Clean Water Act.

5. The pretreatment section should also be amended to give consideration to the problems of integrated facilities with combined wastewater stream flows.

6. The Congress should provide the same incentives for innovative technology to indirect dischargers as it presently provides to direct dischargers.

7. Water quality standards should have some degree of flexibility. Designated uses should not be frozen as of any particular date.

8. Section 301(e) should be amended to make clear that the use of the bubble concept is authorized under the Clean Water Act.

9. BAT limitations should be required only where there is a significant toxics problem.

10. We support the extension of the Clean Water Act for 2 fiscal years; we question the wisdom of reauthorizing the act for 4 or 5 fiscal years.

In conclusion, we thank the subcommittee for the opportunity to appear again on the vitally important matter of reauthorizing the Clean Water Act.

WATERSHED IMPROVEMENT

Industry believes that natural watersheds are, in most cases, the most feasible units for conservation, development, and wise utilization of the Nation's renewable natural resources. Industry also believes that the watershed development concept should embrace the whole complex of major renewable natural resource problems. It should include upstream waterflow retardation, flood control, erosion prevention, protection of industrial and municipal water supplies, abatement of pollution, drainage and irrigation where neces-

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sary, recreation, forest and range management—all directed toward the best practicable use and care of all lands.

To accomplish these objectives, industry recommends:

1. That the community watershed or small drainage area be recognized by all concerned as the natural unit through which renewable natural resources can be most efficiently and most satisfactorily developed.

2. That local authorities and leaders define watershed problems and determine needs by utilizing available basic information and that they obtain additional surveys where needed to define problems and develop adequate plans.

3. That local responsibility for action be assumed by watershed associations, soil conservation districts, or other voluntary local and State groups. Such responsibility would give emphasis to the rights of individuals and groups of individuals to participate in planning, developing, and maintaining their own community watershed programs, and provide a means of relating such local programs to those if interstate or basinwide scope.

4. That after suitable and adequate community watershed planning is done, local authorities should determine and establish the kind of local organization needed to direct the operational and maintenance programs, and make full coordinated use of existing public agencies, industry groups, associations and individuals in a position to contribute to its success.

5. That a federation of community watershed associations on a State or interstate—agreement or compact between two or more States—basis be encouraged to develop and carry out plans on larger stream basins where such unified approach is most feasible.

Industry believes that the foregoing principles should become the policy for a fully integrated approach to the conservation, development and utilization of renewable natural resources in the United States; and that with such approach, responsibility lies with those who derive the benefits therefrom.

Industry further recommends that, wherever necessary to permit the effectuation of these principles, the various States consider the adoption of suitable legislation recognizing watershed development as State or interstate—by agreement of compact between two or more States—responsibility.

We would be glad to answer any questions.

Mr. ROE. Thank you.

Mr. Stangeland.

Mr. STANGELAND. I have the one question I have been asking of all of the witnesses, Mr. Jensen, I think you have excellent testimony here.

Some of your recommendations I have gone through, and particularly your watershed testimony.

Mr. Ruckelshaus expressed concerns about programs for funding nonpoint source control, and how it might act as a disincentive to voluntary action—the theory of people getting in line and not doing anything until the money is there to help them out.

Would you give us the benefit of your perception of that problem, or do you disagree with that?

Mr. JENSEN. Mr. Cannon would be more able to answer that question.

Mr. CANNON. I would like to make some comments on that, since I studied Federal grant-in-aid programs for the construction of municipal sewage treatment plants, since its origin.

It is very interesting to note that at its incipiency, there was a claim that there had been a big surge in construction right after the grant program was instituted. However, an analysis showed that a great part of the plants whose construction had started was due to communities which had already floated bond issues to pay for 100 percent of the cost of their plants.

In other words, they had been going ahead before the grant program was even started. They got thrown in with the statistics and that made it look like there was a big bulge in the statistics.

As the program went on over the years, and I do not have the exact numbers, it started out with 20 percent Federal share, and went to around 30, then to 50 percent, and then around 75 percent.

I think it is only common sense that a community would not go ahead and float its bond issue to pay for its share of building the plant, unless they had some very clear assurances that they were going to get the Federal part of the money.

So, I have seen many observations, by many experts in the field, that the program eventually worked as a brake, rather than as an incentive. It slowed everything down. Everybody waited in line until they got their grant before they went ahead with building their plant.

Of course, there are many other criticisms that were addressed to the program, regarding the layer upon layer of bureaucratic requirements that the EPA laid down upon receiving grants, and it all had to be done in stages, and it was very detailed, and the whole process was very discouraging.

I would agree, very definitely, with Mr. Ruckelshaus, on the basis of the experience we have had so far, in the water field. Thus far, there is every indication that a Federal grant program would not be an incentive, that eventually it would turn out to be a drag, or a brake on the program.

Mr. ROE. Did you wish to say something, Mr. Gilde?

Mr. GILDE. We have had experience in two of our plants that bear a little bit on this issue. Both plants are a significant factor in small communities of about 25,000 population.

In both communities, planned new secondary treatment plants were built under Public Law 660, where they got approximately 60 percent grant funds. Both systems went onstream in the early 1970's. Both city sewage treatment systems had some secondary problems.

The thing that the grant program, I think, did in both cases, was to encourage them not to go ahead and spend some of their own money over a period of time to modify their systems to cope with the problems.

In the one case, the community, since 1974, has spent $1.7 million of Federal funds on various studies, of all different kinds of what should be done, and they have just recently gotten an additional Federal grant of money for designing a Federal facility. These are all studies that have gone on.

I believe if that kind of money had been spent over the past 12 years in making improvements, they would have pretty much overcome the problem.

Because the grant program seems to just drag on forever, there is disincentive to get in there and pitch in and do something yourself.

Mr. STANGELAND. I am pleased that you delineate the various different types of nonpoint source pollution, and recognize that each has to be addressed in a different manner in different parts of the country.

I think the preponderance of witnesses today have more or less said we have to handle this on a State and local basis, that a national overall program of guidelines is not going to work. I think you would all agree demonstration projects, federally funded, might be part of the educational process to show local people good guidelines as to what best management practices might turn out to be to solve the problem of nonpoint source pollution.

Would that be a fair statement?

Mr. JENSEN. That is true. There is an educational process here that I think is a very important role for the Federal Government, of taking knowledge gained from one area, or even discovering new knowledge, and applying it locally.

We think that a lot of the nonpoint sources can be improved with operating practices.

Back to the grants point, we really feel the emphasis should be on operating practices, and secondarily, on capital funding.

After experience, we feel that maybe a needs survey, or a better identification of the problem with respect to construction would then be developed, and then you could design your program for correcting the problem, after the problem has been designed, rather than developing grants, or a giveaway program for people just to hurry up and spend money.

Mr. STANGELAND. Thank you very much.

Mr. ROE. I, too, want to thank our witnesses for coming back, and also thank you for your extraordinary patience you have shown today. I think you have provided us the information we needed to round out the testimony which will be helpful in further pursuance of the bill.

I do not have any particular questions.

Thank you very much for being with us, and we appreciate it.

The subcommittee will now recess until tomorrow morning at 9:30.

[Whereupon, at 5:45 p.m., the subcommittee recessed, to reconvene at 9:30 a.m., Thursday, Nov. 17, 1983.].

POSSIBLE AMENDMENTS TO THE FEDERAL WATER POLLUTION CONTROL ACT

THURSDAY, NOVEMBER 17, 1983

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER RESOURCES,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:25 a.m., in room 2167, Rayburn House Office Building, Hon. Robert Roe (chairman of the subcommittee) presiding.

Mr. ROE. Ladies and gentlemen, the Committee on Water Resources Development under the Water Resources Clean Water Act will now come to order again.

We are honored this morning to have with us the very distinguished Governors from the State of Virginia and the State of Maryland, longstanding strong supporters of the water resources development efforts of our Nation in their respective States and very long strong supporters of clean water in our Nation.

The chairman would recognize Congressman Roy Dyson, who has also been a champion and a leader in the efforts on the Chesapeake Bay and has been a strong supporter of clean water and water resources development in our Nation.

I am aware that Governor Robb has a very tight schedule, so Roy I think it would be well if we defer immediately to Governor Robb because he has to leave immediately, as you know.

Mr. DYSON. He has 2 minutes, Mr. Chairman.

Mr. ROE. All right. Governor, we want to welcome you. If you can do a 1-minute speech as well as we can, it is going to be fine.

We want to welcome you again back to our committee, knowing of your untiring efforts on behalf of your State and the Nation in our water resources development and clean water. So, without further ado, Governor, we welcome you to go ahead with your initial presentation.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

OPENING STATEMENT OF GOV. CHARLES S. ROBB

Mr. Chairman and members of the Subcommittee, I wish to lend my support to the prompt reauthorization of the Clean Water Act legislation before you and to endorse, in particular, the amendment proposed by Congressman Dyson to address the problems of the Chesapeake and Narragansett Bays.

This is important legislation which recognizes the Chesapeake Bay estuarine system as a unique and valuabl national resource and provides the states with

vital assistance in their ongoing efforts to improve the health of the Bay and its resources.

Over the last several years the states have exhibited a very high degree of cooperation in matters dealing with the Chesapeake Bay, and we intend to see that cooperative spirit continued and strengthened. We are currently working to create a mechanism which will continue the cooperative efforts of the EPA-Chesapeake Bay Management Committee and are in the final stages of preparation for the Chesapeake Bay Conference to be held December 7, 8 and 9 at George Mason University in Fairfax, Virginia.

I am currently in the process of refining a six million dollar set of Chesapeake Bay initiatives which will be a part of the 1984–86 budget that I will be submitting to our General Assembly this January. Those Chesapeake Bay initiatives cover a wide range of necessary Bay management activities and will represent a significant expansion in Virginia's commitment to improving and protecting the health of the Bay.

I am pleased to be here today in support of HR 2817 because it will:

Supplement state programs such as ours; encourage and support continuing and improved coordination among the states and federal agencies, especially EPA; and greatly increase our chances of improving and protecting the health of the Bay.

As I must leave at this point in order to fulfill a long-standing commitment I have asked Senator Joseph V. Gartlan of Fairfax, Virginia to present my complete testimony on the legislation before you. Senator Gartlan is the Virginia Co-chair of the Maryland-Virginia Chesapeake Bay Commission, the organization which oversees Bay matters for the two legislatures. Senator Gartlan is very experienced in Bay matters and is dedicated to the sound, long-range management of that resource.

Senator Gartlan.

Testimony of Gov. Charles S. Robb

Mr. Chairman and members of the Subcommittee, I wish to lend my support to the prompt reauthorization of the Clean Water Act legislation before you and to endorse, in particular, the amendment proposed by Congressman Dyson to address the problems of the Chesapeake and Narragansett Bays.

Though we in Virginia can well appreciate the very similar pollution problems and fishery declines occurring in Narragansett Bay, we are most concerned about Chesapeake Bay. The proposed amendment, specifically Section 117, would provide grants to states which substantially implement the management plan being developed by the Chesapeake Bay Program. These grants would provide an excellent mechanism for supporting coordinated management programs which would address problems studied through the research of the EPA-Chesapeake Bay Program.

The Chesapeake Bay represents more than a regional treasure. It is a significant national resource that cannot be allowed to further deteriorate. The Bay proper is approximately 200 miles long, ranges in width from approximately 4 miles to 30 miles, and encompasses more than 2,200 square miles of water surface. Although it lies totally within the Atlantic Coastal Plain, it draws water from an enormous 64,000 square mile drainage basin, involving six states and the District of Columbia. Thus, it is a massive interstate estuarine system.

As well as being the largest estuary in the continental United States, the Chesapeake is one of the country's most significant and valuable resources. Even after years of intensive use, it provides millions of pounds of seafood, it serves as a major hub for shipping and commerce, it supplies huge natural habitat for wildlife, and it offers a wide variety of recreational opportunities for residents and visitors. The value of the Chesapeake Bay's fishing catch exceeds $100 million annually. Not only is it the largest producer of blue crabs in the world, but it grows more than half of the total U.S. catch of soft-shelled clams and more than a quarter of the nation's annual oyster harvest. Being so productive, the Chesapeake Bay ranks third in the nation in overall fishery catch, exceeded only by the Atlantic and Pacific Oceans.

More the 90 million tons of cargo, with a value of nearly $24 billion, were shipped via the Chesapeake in 1979. Boasting two of the nation's five major Atlantic ports, the Hampton Roads complex and the Port of Baltimore, the Chesapeake Bay is a key commercial waterway. Nearly 50,000 commercial vessel trips are recorded annual from Chesapeake ports.

But it economic contributions are not its sole worth. One of the Chesapeake's most valuable functions is its role as a major wildlife habitat. Migratory birds and waterfowl use the Chesapeake for major feeding grounds and overwintering protection along the Atlantic Flyway. Approximately half a million Canadian geese and

more than 40,000 whistling swans use the Bay as a winter home. It is a nesting area for both the endangered bald eagle and osprey, supporting the largest U.S. population of osprey.

Though the Chesapeake Bay may sound like an environmental and economic paradise, it is not. This year, the Environmental Protection Agency, together with the states of Virginia, Maryland, and Pennsylvania conclude a seven-year study of the Bay. The Chesapeake Bay Program was established in accordance with a 1976 Congressional mandate to assess the health of the bay, determine factors adversely affecting it, and recommend management strategies for controlling pollutants. The results of this study have confirmed that the Bay system is undergoing major ecological changes. Some of the problems identified by EPA and the Chesapeake Bay Program are:

High concentrations of toxic materials are captured in the sediments of certain areas of the estuarine system; levels of nutrients in many areas of the Bay are increasing; the loss of dissolved oxygen in the deeper portions of the Bay is increasing; submerged aquatic vegetation is declining; certain anadromous fish harvests are declining; shellfish harvests are declining.

These are long-term problems which require long-range solutions. These solutions require a cooperative approach, not only among the users and beneficiaries of the Bay's wealth, but among federal, state and local governments as well.

The EPA-Chesapeake Bay Program is one of several management efforts involved with the Chesapeake Bay. Included in this program is a Management Committee composed of representatives from Pennsylvania, Maryland, Virginia, EPA and the public at large, while NOAA and the District of Columbia are in the process of becoming formal members. The accomplishments of the Program include a bay-wide data base, scientific research into key areas, identification of specific environmental problems, development of alternative management solutions, and recommendations for cooperative management.

In addition to the EPA-Chesapeake Bay Program, other efforts to better manage the Bay include:

Maryland-Virginia Chesapeake Bay (Legislative) Commission which has been central to the development and passage of fisheries legislation and functions as a forum for coordinated legislative initiatives on Chesapeake Bay management problems.

Maryland-Virginia Bi-State (Executive) Working Committee which has focused on fisheries management and water quality issues. This Committee has been a forum for cooperative efforts on Chesapeake Bay actions implemented by the executive branch of state government.

A Chesapeake Bay Conference sponsored by Maryland, Pennsylvania, Virginia, the District of Columbia and EPA is scheduled for December 1983. It is to be a bay-wide conference which will place before the public the findings and recommendations of the EPA-Chesapeake Bay Program and other relevant studies and lead to the development of a consensus on the needs and priorities of Bay management.

While Virginia is geographically at the receiving end of the Bay's drainage system, the state takes very seriously its responsibility to minimize its contribution of pollutants. As our population grows over the next decade, we will be faced with increasing pressures on the water quality and resources of the Bay and its tributaries. Managing the Bay will require the careful study of a wide range of management options and a constant and substantial investment of the Commonwealth's resources in their implementation.

Virginia has begun to develop such a coordinated state program for the management of its portion of the Chesapeake Bay. This initiative will serve as a permanent yet evolving guide, directing the state's involvement in all aspects of Bay management. It will gather together all relevant Virginia state management activities within one comprehensive policy framework and provide a mechanism for meeting new problems and opportunities as they arise. While the development of the overall state program is only now in process, its primary goals are to:

Protect and enhance the Chesapeake Bay's water quality and resources; accommodate growth and development in an environmentally sound manner; and cooperate with other states and the federal government in the management of the Chesapeake Bay and its resources.

At a minimum, I expect Virginia's program to begin to address critical problems in the James, Potomac, Elizabeth, York and Rappahannock Rivers and in the small coastal embayments. I intend to designate resources to correct both toxic and nutrient problems from both point and non-point sources. At this time Virginia is considering strategies to control such problems as agricultural run-off, overloading of sewage treatment plants, and contamination of shellfish beds. We are developing

more sophisticated monitoring programs and data management systems, as well as mounting a new effort to manage our fisheries resources.

I believe Virginia's strategy is entirely consistent with the intent of House Bill 2817. An "interstate management plan" is one which appropriately emphasizes the development of a consensus on problems and objectives, but which leaves the definition and design of specific management programs to the individual states. There will be some instances, particularly in the monitoring and data management areas, where a single program defined and managed in some cooperative manner may be the most effective approach. The general strategy, however, must continue to be one which builds upon the responsibilities and capabilities of the individual states of the Chesapeake Bay drainage basin. I say "builds upon" because the states alone cannot bear the burden of protecting and managing the natural resource that is the Chesapeake Bay.

In conclusion, I want to reiterate my strong support for the Clean Water Act and the Amendments of 1983. Since the Chesapeake Bay knows no absolute state boundaries, but rather shares its wealth and its beauty with the nation, the proposed new Section 117 reflects the equity of requiring others, including the federal government, to share in its protection so as to assure its future bounty.

Thank you for the opportunity to comment on this very important issue.

Mr. ROE. Please proceed.

TESTIMONY OF HON. CHARLES ROBB, GOVERNOR, COMMONWEALTH OF VIRGINIA; HON. HARRY HUGHES, GOVERNOR, STATE OF MARYLAND; HON. ROY DYSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND; HON. BARBARA MIKULSKI, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MARYLAND; AND, HON. JOE GARTLAN STATE SENATOR, STATE OF VIRGINIA

Governor ROBB. Thank you very much, Mr. Chairman. I am delighted to have an opportunity to appear again before you and the members of your subcommittee. And I appreciate your understanding of an extremely tight schedule. I have a prior commitment in Lexington, Va., that must begin at 11 o'clock this morning. It has been on the books for some 7 or 8 months, and I simply was unable to change it.

But I am very pleased to be here this morning with Governor Hughes and Congressman Dyson to support enthusiastically the reauthorization of the Clean Water Act and specifically to appear in support of Congressman Dyson's amendment to that particular act.

We appreciate very much the opportunity to say a few words, and in just a moment I am going to introduce State Senator Joe Gartlan, who is the chairman of the Maryland-Virginia Chesapeake Bay Commission, who will provide the remarks that I would like to have been able to present in their entirety myself, and then perhaps a few words of his own, given his long and distinguished career in this particular field, among others.

But I just would like to underscore, if I may, personally my own commitment, the commitment of Virginia, to the entire Chesapeake Bay program in all of its facets with which we are dealing. As you know, both States have been working very cooperatively of late, and I give a great deal of the credit for that cooperative spirit to Governor Hughes and the State of Maryland.

We have another ally in the Commonwealth of Pennsylvania and Governor Thornburgh, and with the Environmental Protection Agency, and Mr. Ruckelshaus, as well as the District of Columbia in some of the things that we are doing.

We are proceeding on a number of initiatives that will lead up to a Chesapeake Bay conference. It will be held on December 7, 8, and 9 at George Mason University in Fairfax, Va., cosponsored by three States, the District of Columbia, and the Environmental Protection Agency.

I would simply say at this point, since Senator Gartlan is going to provide the testimony on behalf of the Commonwealth of Virginia, that we stand foursquare behind that commitment. We see real value in the amendment that Congressman Dyson has proposed. I regret that I have been informed just in the last few minutes that there was a meeting last night. It may be that the Environmental Protection Agency is not going to be able to support the amendment. I think it is important, given the enormous resources that have already been provided by the Federal Government and by the States to saving this critically important estuary that the Chesapeake Bay represents for all of us.

Again, the statistics are in the testimony, so I will not reiterate on that point. I guess I will simply thank my colleague and a real leader in the effort to save the Chesapeake Bay, Gov. Harry Hughes, and now introduce Senator Joe Gartland, who is the chairman of the Maryland-Virginia Chesapeake Bay Commission, who has worked long and hard on bay and environmental matters, representing the State in many different capacities, and in fact was supposed to be at the same conference that I am addressing in Lexington, but very kindly gave up that opportunity to come and present the testimony on behalf of the Commonwealth of Virginia.

Mr. Chairman, I would like at this time, if I may, to introduce the chairman of the Maryland-Virginia Chesapeake Bay Commission, State Senator Joe Gartlan.

Mr. ROE. Senator Gartlan.

Thank you very much, Governor, for being with us this morning. We recognize your schedule problem.

We have with us Senator Gartlan, who is chairman of the Commission, Chesapeake Bay Commission; also Barbara Mikulski has joined us from the great State of Maryland.

Now, if you would go ahead. Now, suppose we now get organized and request, Senator, if you will, a little more formality. We do not have usually so many distinguished guests at one time at our hearing.

And suppose the chairman defers to our distinguished colleague and really a champion of this program, Senator—Senator—I just elevated you—Congressman Roy Dyson.

Mr. DYSON. I will take the elevation.

Mr. ROE. I should not say that. On the House side we are not so sure we agree with that. No reflection, though.

Mr. DYSON. Actually, there was a time, as you recall, we were paid more than they were, and I think that was more than justified.

I am encouraged this morning, Mr. Chairman, with the visit of one of my colleagues from Maryland, Congresswoman Barbara Mikulski. She is from, as you know, the Baltimore region of the Chesapeake Bay, a very critical area in this whole cleanup process.

I also want to thank you and the distinguished members of the subcommittee for the careful attention that you have paid during

Clean Water Act hearings to the Chesapeake Bay and the courtesy you have shown in allowing me to appear before you on two previous occasions concerning my Chesapeake Bay amendment.

The bill, which is before the subcommittee concerning the Chesapeake Bay, H.R. 2817, which I introduced earlier this year, is the most important vehicle to make a major effort possible to restore the water quality of the estuary. Without its inclusion in the reauthorization of the Clean Water Act, it will not be possible for the States of Virginia, Pennsylvania, and Maryland to implement an interstate management plan that will seek to remove pollution from the bay's waters.

I am pleased to report to you that the growing consensus to refurbish the bay continues. Last month, I took a group of my House colleagues out on the Chesapeake to acquaint them firsthand with its value and its needs. Since those Members joined me, the number of cosponsors to my legislation has nearly doubled.

Currently, there are 62 cosponsors, representing virtually every part of the country. Eight of them are members of this subcommittee. This level of support in Congress for the Chesapeake Bay clearly shows that it is perceived as a national treasure.

The presence of the Governors of Virginia and Maryland here today symbolizes how my amendment is able to unite different States, and different interests to work together for a common goal. It provides the needed Federal incentive to help agricultural interest save fertilizer that would otherwise flow into the Chesapeake Bay.

It revitalizes an estuary that is home to countless species of aquatic life which thousands of people rely on for their livelihood. To illustrate this, let me share some figures with you.

One of the University of Maryland's top experts on nonpoint source pollution estimates the market value of the fertilizer lost annually through runoff into the bay is as much as $54 million. The annual aquatic biological harvest is worth about $750 million a year to the regional economy.

Adoption of my legislation will enable farmers to more easily control runoff, helping them to save money and significantly improve their soil productivity. At the same time it will set the tone for restoring the bay's water quality, allowing it to become once again a place where aquatic life can live and grow without the threat of disease or extinction from pollution.

My legislation is not only an attempt to restore a body of water to its once pristine condition. It is, just as importantly, designed to protect and preserve a sector of the Nation's economy that has gone previously unprotected by a Federal statute.

My legislation sets a definitive course for the future of the Chesapeake Bay by mandating a call of action among the States in the Chesapeake Bay region. While it does not force the States to implement specific practices, it is an action plan to stop and reverse generations of neglect on the Chesapeake Bay.

In other words, we are not telling the States what to do, but unless we have a Federal commitment to the Chesapeake Bay's cleanup effort, any effort by the States will fall far short of our ultimate goal. The States simply do not have the resources to go this

thing alone. They need our help, Mr. Chairman, they need mine and they need yours.

Three of your colleagues on your subcommittee have seen the problems the bay faces. Those problems will not respond to the band-aid approach.

Just to give you an idea of how serious the bay's problems have become, U.S. News & World Report recently quoted scientists as saying that the bed of one 65-mile stretch of the bay bottom dies each summer as a result of pollution.

People throughout the Nation are watching how we deal with the Chesapeake Bay's problems. The efforts embodied in this legislation could serve as a realistic model for solving pollution problems throughout the country.

Those 62 colleagues of ours in the House are proof that the bay has become more than a local concern. It has become a prototype for cleaning up the Nation's waterways.

I want to thank Governor Robb, Governor Thornburgh, and Governor Hughes for their support of my bill. I regret that Governor Thornburgh could not join us today, but I am certainly delighted that Governors Robb and Hughes have taken time from their schedules to be here. They are with us to indicate that the States in the Chesapeake Bay region are willing to assure Congress of their interest in the bay's restoration process.

They are here to ask for our help and once again to pledge their cooperation.

Mr. Chairman, it is always an honor to appear before you and the subcommittee. I applaud you as an advocate of improving the Nation's water quality and pledge my support for those efforts. I have been repeatedly encouraged by your interest in the Chesapeake Bay and I am delighted that you will be joining me for one of my congressional tours on the bay. I hope that it will deepen your already rich appreciation of it.

I also promise you that you will taste some of the finest seafood in the world, taken right from the waters of Maryland's First Congressional District.

I welcome my friends from the Chesapeake Bay region testifying before the House this morning and assure them of the subcommittee's interest in working with me to begin a new era for the Chesapeake Bay. I again thank you, Mr. Chairman.

Mr. ROE. Thank you very much for your splendid introduction. And the Chair would now defer to our distinguished Representative, another distinguished Representative from Maryland, the Honorable Barbara Mikulski, who, too, has been a great leader for water resources development in our Nation and particular the environment and clean water that is critical to our country. Barbara?

Ms. MIKULSKI. Thank you very much, Mr. Chairman. And I thank you for holding these hearings today on this most important legislation.

I represent the great Port of Baltimore, which through your efforts we hope to make a world-class port. And we—I know the Governor would join me and Congressman Dyson—we would like to thank you for your leadership in expediting dredging legislation through the House of Representatives.

I am here to lend my support to the legislation under consideration. By representing the great Harbor and Port of Baltimore, I represent those areas where there are point specific and point identified areas of pollution on which we are taking steps and in which we need help.

I know that the Governor will be testifying not only about specific areas of pollution, but also those terrible problems with nonpoint pollution.

He will be offering you many concrete suggestions on how we could use both the Federal legislative framework and Federal financial resources to help clean up the Chesapeake Bay. This is not regional legislation, Congressman Roe, because the Chesapeake Bay really belongs to the country. It is a leading estuary and I know that our Governor will amplify that.

I just want to bring to your attention some facts about our Governor, which I know he would be too modest to say about himself. I would hope that you would pay very keen attention to what the Governor says because he has a distinguished career as being a State senator in the Eastern Shore of Maryland where he has intimate and familiar knowledge with the agricultural and bay issues of that area to being the Secretary of Transportation, in which he made wise use of funds provided by this Congress.

And now as Governor I can tell you he has made very thrifty use of the resources that we provided him under the gasoline tax. And I know that whatever we give him to spend and whatever legislative framework we give him to use, he will use it well and in a way that we look forward to in that partnership we talk about between the Federal Government and State government.

All Federal legislation that calls for partnerships is only as good as the Governor that implements them. And this is one good Governor that will implement them. He has demonstrated that not only by the wise use of funds, but also in the leadership that he has taken on the Chesapeake Bay. I am going to let him tell you about the Chesapeake Bay. But I wanted to tell you about him.

This is not some guy from some think tank who is going to come in with some grandiose plan that will bust the Federal budget; this is a Governor who knows that public investment will generate private-sector jobs and wants to work in partnership with us.

So I know that you will be delighted to hear from him.

Mr. ROE. A splendid presentation; I just hope, Barbara, that if you are not going to be doing anything early spring next year, God, I could use a campaign manager like you. [Laughter.]

The Chair now defers to our distinguished ranking minority member of our committee, the Honorable Arlan Stangeland from Minnesota for a formal welcome.

Mr. STANGELAND. I just wanted to welcome our colleagues, Mr. Dyson, Ms. Mikulski, and also Governor Hughes and Senator Gartlan, and, Senator, express my regrets to the Governor for not being able to be here except the last couple of minutes of his discussion.

I had scheduled a meeting that was important to me at 9 and was not aware that there was going to be a time conflict and a problem. But I express my regrets that I was not able to be here. I look forward to hearing his testimony. But, Governor Hughes, all welcome.

With those glowing accolades, you can go home and rest on your laurels now. But we do look forward to your testimony. I am not all that familiar with the Chesapeake Bay, but I have had occasion to go over there and try my hand at hunting some ducks and some geese, and I can well understand and appreciate the value of the bay to the whole area and to the entire United States.

And so we look forward to your testimony today and we look forward to working with Representatives Dyson and Mikulski in doing what we can to help clean up the bay so it continues to be the tremendous resource that it is.

Mr. ROE. I want to thank the gentleman from Minnesota. The Chair would now welcome and recognize Senator Gartlan, who is to round out the testimony of Governor Robb and is also chairman, as I understand it, of the Chesapeake Bay Commission. So, Senator, we also welcome you to our committee to round out that testimony. So if you would go ahead and proceed, we would appreciate it.

Mr. GARTLAN. Thank you, Mr. Chairman, and members of the subcommittee. I will be reading from the statement prepared for Governor Robb and which will be submitted in its original form to the committee. I trust you will tolerate some minor modifications to remove the pronoun, "I," which as a legislator I feel a little uncomfortable with, speaking for the executive branch, and I trust you will understand that.

Mr. ROE. In the spirit of cooperation in this great federalism and State relationship that Barbara and Roy spoke to, we can use—we'll say we.

Mr. GARTLAN. Thank you, sir.

Though we in Virginia can well appreciate the very similar pollution problems and fishery declines which have occurred in Narragansett Bay, which is one of the objects of this legislation, our primary responsibility, and therefore our principal concern is with the Chesapeake Bay.

The proposed amendments, specifically section 117, would provide grants to States, which substantially implement the management plan being developed by the Chesapeake Bay program. These grants would provide an excellent mechanism for supporting coordinated management programs which would address problems studied through the research of the EPA-Chesapeake Bay program.

The Chesapeake Bay represents more than a regional treasure. It is a significant national resource that cannot be allowed to further deteriorate. The bay proper is approximately 200 miles long, ranges in width from approximately 4 miles to 30 miles and encompasses more than 2,200 square miles of water surface.

Although it lies totally within the Atlantic coastal plain, it draws water from an enormous 64,000-square-mile drainage basin involving six States and the District of Columbia. Thus, it is a massive, interstate estuarine system.

As well as being the largest estuary in the continental United States, the Chesapeake is one of the country' most significant and valuable resources. Even after years of intensive use, it provides millions of pounds of seafood, serves as a major hub for shipping and commerce, supplies a huge natural habitat for wildlife, and offers a wide variety of recreational opportunities for residents and visitors.

The value of the Chesapeake Bay's fishing catch exceeds $100 million annually. Not only is it the largest producer of blue crabs in the world, but it grows more than half of the total U.S. catch of soft shell clams and more than a quarter of the Nation's annual oyster harvest.

Being so productive, the Chesapeake Bay ranks third in the Nation in overall fishery catch, exceeded only by the Atlantic and Pacific Oceans.

More than 90 million tons of cargo with a value of nearly $24 billion were shipped via the Chesapeake in 1979. Boasting two of the Nation's five major Atlantic ports, the Hampton Rhodes complex and the Port of Baltimore, the Chesapeake Bay is a commercial—a key commercial waterway on which nearly 50,000 commercial vessel trips are recorded annually.

But its economic contributions are not its sole worth. One of the Chesapeake's most valuable functions is its role as a major wildlife habitat. Migratory birds and waterfoul, when not being hunted by Congressmen, use the Chesapeake for major feeding grounds and overwintering protection along the Atlantic flyway.

Approximately half a million Canadian geese and more than 40,000 whistling swans use the bay as a winter home. It is a nesting area for both the endangered bald eagle and osprey, supporting the largest U.S. population of osprey.

Though the Chesapeake Bay may sound like an environmental and economic paradise it is not. This year the Environmental Protection Agency together with the States of Virginia, Maryland, and Pennsylvania conclude a 7 year study of the bay. The Chesapeake Bay program was established in accordance with a 1976 congressional mandate to assess the health of the bay, determine factors adversely affecting it, and recommend management strategies for controlling pollutants. The results of this study have confirmed that the bay system is undergoing major ecological changes. Some of the problems identified by EPA and the Chesapeake Bay program are high concentrations of toxic materials are captured in the sediments of certain areas of the estuarine system; levels of nutrients in many areas of the bay are increasing; the loss of dissolved oxygen in the deeper portions of the bay is increasing; submerged aquatic vegetation is declining; certain anadromous fish harvests are declining; shellfish are declining.

These are long-term problems which require long-range solutions. The solutions require a cooperative approach, not only among the users and beneficiaries of the bay's wealth, but among Federal, State, and local governments as well.

The EPA Chesapeake Bay program is one of several management efforts involved with the Chesapeake Bay. Included in this program is a management committee composed of representatives from Pennsylvania, Maryland, Virginia, EPA, and the public at large, while NOAA and the District of Columbia are in the process of becoming formal members.

The accomplishments of the program include a baywide data base, scientific research into key areas, identification of specific environmental problems, development of alternative management solutions and recommendations for cooperative management.

While Virginia is geographically at the receiving end of the bay's drainage system, the States take very seriously its responsibility to minimize its contribution of pollutants. As our population grows over the next decade, we will be faced with increasing pressures on the water quality and resources of the bay and its tributaries. Managing the bay will require the careful study of a wide range of management options and a constant and substantial investment of Virginia's resources in their implementation.

Virginia has begun to develop such a coordinated State program for the management of its portion of the Chesapeake Bay. This initiative will serve as a permanent, yet evolving, guide directing the State's involvement in all aspects of bay management. It will gather together all relevant Virginia State management activities within one comprehensive policy framework and provide a mechanism for meeting new problems and opportunities as they arise. While the development of the overall State program is only now in process, its primary goals are to protect and enhance the bay's water quality and resources, accommodate growth and development in an environmentally sound manner, cooperate with other States and the Federal Government in the management of the Chesapeake Bay and its resources.

At a minimum, we expect Virgnia's program to begin to address critical problems in the James, Potomac, Elizabeth, York, and Rappahannock Rivers and in the small coastal embayments. We intend to designate resources to correct both toxic and nutrient problems from both point and nonpoint sources.

At this time Virginia is considering strategies to control such problems as agricultural runoff, overloading of sewage treatment plants, and contamination of shellfish beds. We are developing more sophisticated monitoring programs and data management systems as well as mounting a new effort to manage our fisheries resources.

We believe Virginia's strategy is entirely consistent with the intent of House bill 2817. An interstate management plan is one which appropriately emphasizes the development of a consensus on problems and objectives, but which leaves the definition and design of specific management programs to the individual States.

There will be some instances, particularly in the monitoring and data management areas where a single program defined and managed in some cooperative manner may be the most effective approach. The general strategy, however, must continue to be one which builds upon the responsibilities and capabilities of the individual States of the Chesapeake drainage basin.

We say builds upon because the States alone cannot bear the burden of protecting and managing the natural resource that is the Chesapeake Bay.

In conclusion, we want to reiterate our strong support for the Clean Water Act and the amendments of 1983. Since the Chesapeake Bay knows no absolute State boundary, but rather shares its wealth and its beauty with the Nation, the proposed new section 117 reflects the equity of requiring others, including the Federal Government, to share in its protection so as to assure its future bounty.

Thank you for this opportunity to comment. It is very important.

Mr. ROE. I want to thank you very much, Senator Gartlan, for a comprehensive, concise statement on the Chesapeake Bay matter.

And now I am honored to defer to the distinguished Governor of Maryland, who again has been a leader, not only in his State but throughout this Nation, in water resources development, management, and particularly now in the water quality of our environment.

So, Governor Hughes, I want to welcome you again to the committee, and you can go ahead with your testimony.

Governor HUGHES. Thank you, Mr. Chairman. I do have written testimony that will be submitted, which I am not going to read.

Mr. ROE. Your statement will appear in full in the record.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY OF GOV. HARRY HUGHES

I am pleased to be here today to discuss with you my views on the Clean Water Act reauthorization, especially as it concerns the Chesapeake Bay. In addition, I will discuss HR 2817 sponsored by Representative Dyson, which would add a new section to the Clean Water Act authorizing the implementation of the EPA Chesapeake Bay Program. I consider this legislation to be the most significant Clean Water Act issue from Maryland's standpoint.

At the outset, I want you to know that Maryland supports a strong Clean Water Act. We have found the framework of the 1972 Act with its 1977 and 1981 modifications to be basically sound and workable. Under the existing Clean Water Act, Maryland, in concert with EPA, has made significant progress toward cleaner water. To illustrate, we have seen significant improvements in the upper Potomac estuary, in portions of the Patapsco River in Baltimore, and we reduced the numbers of acres of shellfish waters that were closed to shellfish harvesting in the early 1970s from around 28,000 acres to 5,000.

I would urge the House Public Works Water Resources Subcommittee to continue to uphold the strength of the current Clean Water Act. Attainment of its objective—the maintenance and protection of the physical, chemical and biological integrity of the Nation's waters—remains paramount. To ensure continued uniform progress toward this objective, national federal minimum standards must be maintained.

Accordingly, I would hope that following the Subcommittee's review of Clean Water Act issues, you will conclude that major changes to the Act are not required and thus reauthorize the Clean Water Act with a modest package of amendments aimed at improving it.

Two proposed changes to the Clean Water Act which I fully endorse and urge the Subcommittee to support, are contained in HR 2817, introduced by Representative Dyson and HR 4037, introduced by Representative Oberstar.

HR 2817 authorizes a new section to the Clean Water Act entitled "Chesapeake and Narragansett Bays." This legislation would add a valuable concept to the Clean Water Act by giving special recognition to these waters of national significance. HR 4037 also authorizes a new section to the Act entitled "Non-point Source Control Implementation Plans." This legislation would direct the states to increase their efforts to address the very significant problem of non-point source pollution. These two measures would facilitate and greatly assist the Chesapeake Bay clean-up effort to be undertaken by the states of Maryland, Virginia, Pennsylvania and the District of Columbia in partnership with the federal government.

Before discussing the specific provisions of this legislation, I will provide you with a few background statistics on the importance of the Chesapeake Bay. Then, I will discuss the critical problems facing the Bay which have been extensively documented by the EPA's Chesapeake Bay Program and what we must do to take action.

The Chesapeake Bay is one of our most cherished and valuable national treasures. It is the largest and most productive estuary in the contiguous United States. The drainage area for the Chesapeake Bay is nearly 64,000 square miles in size, and includes parts of six states and the District of Columbia. Its primary tributaries, the Susquehanna, the Potomac, and the James, are major river systems in their own right.

The Chesapeake Bay region is home to more than eight million people, including the greater metropolitan areas of Baltimore, Washington, Richmond, and Norfolk. The Bay is integral to the history of this region, its economy, its culture, and its lifestyle. We all share the riches of the "Land of Pleasant Living."

Marylanders, along with our neighbors in Virginia, have always considered the Chesapeake Bay a natural resource of great value. The seafood industry, waterborne commerce, and water-oriented industry have dominated Maryland's economy. The Chesapeake is important not only to Maryland and Virginia but to the nation as a whole. The Bay's fishing production is exceeded only by the Atlantic and Pacific Oceans. The average annual oyster catch over the last fifty years has been approximately 27 million pounds per year, more than a quarter of the nation's total yearly oyster catch. The Chesapeake is the largest producer of blue crabs in the world, averaging about 55 million pounds annually. More than half the total U.S. catch of both soft-shelled clams and blue crabs comes from the Chesapeake. The dockside value of they Bay's fishing catch exceeds $100 million per year, including both shellfish and a thriving finfish industry.

The Chesapeake is also a key commercial waterway; two of the five major U.S. North Atlantic ports are located on the Bay. The Hamption Roads Complex, which includes Portsmouth, Norfolk, Hampton and Newsport News, dominates the mouth of the Bay. At the northern end, the Port of Baltimore handles nearly 24 percent of the export commerce leaving the U.S. North Atlantic ports. More than 90 million tons of cargo, with a value of nearly $24 billion, were shipped via the Chesapeake during 1979.

Both Baltimore and Hampton Roads are situated near the coal producing regions of Appalachia, making them essential to promoting the use of U.S. coal abroad. The Hampton Roads Complex already leads the nation in exporting coal and lignite.

Perhaps one of the Chesapeake's most valuable functions is its role as a major wildlife habitat. Migratory birds and waterfowl use the Bay as a major stop along the Atlantic Flyway, finding food and shelter in the numerous coves and marshes. The Chesapeake is also winter home for approximately half a million Canadian geese and more than 40,000 whistling swans. It is a nesting area for the osprey, whose largest U.S. population is found in the Bay region, and the endangered bald eagle.

The Chesapeake's tributaries provide spawning and nursery sites for several important species of saltwater fish, such as the white perch, striped bass and shad. It is estimated that approximately 85 percent of the striped bass along the Atlantic Coast spawn in the Chesapeake Bay waters. During the warmer months, several marine species including bluefish, weakfish, croaker, menhaden and spot enter the Bay to feed on its rich food supply.

The hospitable climate, lush vegetation and natural beauty of the Chesapeake have made it an increasingly popular recreation area. Boating, fishing, swimming, hunting and camping are the major attractions. Both power and sail boating have grown dramatically. More than 120,000 pleasure craft are registered in the State of Maryland alone. The annual sport fish catch in the Chesapeake Bay is estimated to be 28 million pounds.

Given these impressive statistics on the Chesapeake Bay, it is clear why we in Maryland are so anxious to protect our natural treasure, and why we have been closely involved with EPA's Chesapeake Bay Program.

The EPA Chesapeake Bay Study concluded this year. Nearly seven years and $30 million have been spent studying water quality and living resource problems in the Bay. It has been a long and expensive study, but we believe this effort has significantly advanced our understanding of the natural processes in the Bay and the effect of human activities on them.

Before reviewing the specific research findings, I would like to comment on the structure of the EPA Chesapeake Bay Program. Initially, it was structured as a research program with little or no emphasis on management implications. Then, in the early stages of the program, EPA, in consultation with the three primary states in the Chesapeake basin, agreed to share its management responsibility with the three states and, thus, established the State/EPA Management Committee to set program directions and make policy decisions.

Maryland was uniquely represented on the Management Committee by two members—the Director of the Tidewater Administration in the Department of Natural Resources, who is responsible for tidal fisheries, and the Assistant Secretary for Environmental Programs in the Department of Health and Mental Hygiene, who is responsible for water quality. In large part because of the influence of the State members of the Management Committee, the Chesapeake Bay Program became a management-oriented study rather than strictly a research program. In addition, by

their intensive participation during the Chesapeake Bay Study, the states and EPA have a research product that reflects management needs, and have an institutional mechanism already in place which will enable implementation activities to proceed readily. I would recommend that this management orientation concept of the EPA Chesapeake Bay Program is a useful model for future studies of regional ecosystems.

Turning to the EPA research findings, the Chesapeake Bay Program has learned, or confirmed, some very critical facts about the health of the Chesapeake Bay.

The Bay grasses are at their lowest level ever in the Bay. The populations of fresh water spawning fish, including the American shad and striped bass, are at historically low levels, while populations of the ocean spawners such as bluefish and menhaden, are the predominant species. Reproduction of the sensitive shellfish, the American oyster, also seems to be declining.

The upper and mid-Bay and many of the Bay's tributaries are either severely or moderately nutrient enriched compared to what they were historically. Nutrient levels have increased dramatically over the past ten years in these waters, making them much more susceptible to algal blooms, and resulting in low levels of oxygen and light. The nutrients causing enrichment problems are phosphorus and nitrogen, which come from sewage treatment plants, industrial discharges, urban stormwater, and runoff from agricultural land.

The Chesapeake Bay Program has documented a statistical correlation between high nutrient concentrations in various segments of the Bay and declines in reproduction of sensitive finfish and shellfish species, such as striped bass and oysters, as well as declines of submerged aquatic vegetation. Apparently the level of nutrients in the Bay has exceeded the point where they can increase productivity, and instead, are now beginning to inhibit the survival of sensitive species.

Of equal concern is the finding of the Chesapeake Bay Program that the sediments in some portions of the Bay show high concentrations of heavy metals and toxic organic compounds. The highest metal and organic concentrations in sediments occur in the northern Bay, in Baltimore Harbor and the Elizabeth River. In some areas, concentrations of toxic metals and organics in the sediments are high enough to cause mortality in test animals subjected to samples of these sediments; however, insufficient information exists to date as to whether these sediments are posing a current threat to higher living resources in the Bay. Nonetheless, there is a clear correlation between diversity of species living in the sediments and the level of toxic materials present.

The most dramatic finding of the Chesapeake Bay Program is the fact that the circulation patterns of the Bay make it a sink for pollutants, including sediments, nutrients, and toxics. We used to believe that materials carried into the Bay by streams and rivers were eventually flushed out to the ocean. Now we know that the suspended materials tend to settle out and accumulate in the sediments. What goes into the Bay stays there. The entire 64,000 square mile drainage basin is part of the living ecosystem of the Chesapeake Bay. Any activity affecting the land and water in any part of the watershed may ultimately have an effect on the living resources of the Bay.

Thus, the evidence of the Bay Study presents the probability that the evolution of the Bay ecosystem is at a critical point. Data suggest that in all parts of the Bay, the ecosystem is on the "down" side of a hypothetical curve of ecosystem change. That is, productivity has peaked and is now declining.

This past October, the EPA published its final management recommendations on alternative actions to reverse the trends of Chesapeake Bay resource productivity and water quality decline in the Bay. The states are currently reviewing these management alternatives and working with EPA to develop a regional plan of corrective strategies in the coming months.

Currently, the states and EPA are undertaking the necessary steps to ensure a smooth transition of the Chesapeake Bay Program from a federal research program to a federal/state management program. This transitional period was made possible by the Fiscal Year 1983 and Fiscal Year 1984 Congressional appropriations of $900,000 and $4.25 million respectively. The $900,000 appropriation and the $1.25 million of the Fiscal Year 1984 appropriation plus State appropriations, including $725,000 from the State of Maryland, will support future joint federal/state monitoring of the Bay, operation and maintenance of the computer system and water quality models. The massive computer data base on the Bay's water quality and fisheries comprises a comprehensive baseline of information about the current state of the Bay and trends. Future monitoring data will be added to this system. The mathematical water quality and circulation models enable prediction of the effects of

changes in various pollution sources and assessment of the effects of alternative management options.

These valuable tools developed by the Chesapeake Bay Program will allow the states to monitor the pulse of the Bay, to determine whether our actions are improving conditions.

Let me now turn to the implementation strategies we have taken and our plans for future actions. We have already begun a number of efforts in Maryland to address the nutrient enrichment problems in the upper Bay and its tributaries. For example, Maryland has adopted a regulatory strategy to limit phosphorous from sewage treatment plants discharging to the upper portion of the Bay where nutrient enrichment problems are most severe. Specifically, we are requiring phosphorous removal at a level of two miligrams per liter at all publicly-owned sewage treatment plants (POTWs) north of the Patapsco River with a discharge greater than .5 million gallons per day (mgd). This requirement also applies to larger POTWs between the Patapsco River and the Bay Bridge—that is to say which discharge greater than 10 mgd.

In response to the findings and recommendations of the EPA Bay Program, we intend to require phosphorous removal at several additional POTWs which have significant discharges but are either smaller than 10 mgd or located south of the Bay Bridge and are discharging to the Bay.

With respect to non-point source pollution, we have accelerated our efforts to control agricultural runoff. In 1982 Maryland established a $5 million grant program to assist farmers in the installation of best management practices to reduce nutrient runoff from farmland. The program which became operational this past July, provides assistance to farmers—up to $5,000 per farm—in the form of cost-share grants for the implementation of agricultural best management practices. This program has been well accepted by the farm community with close to 300 applications for assistance currently being processed.

This new program by itself, however, will not resolve all of our agricultural pollution problems. We estimate that at least $90 million will be needed over the next ten years so that best management practices can be installed on all Maryland farms. It is important to note that this amount includes the share which would be paid by farmers. While we are confident Maryland farmers will participate in our program and match our public funds, I do wnat to stress that unless considerable cost-share assistance is provided to assist landowners with implementation of best management practices, little progress in addressing agricultural non-point problems will be realized. Some of these best management practices are costly to install and provide no immediate net return to the farmers. For these reasons, we intend to significantly increase our efforts in this area by providing additional resources for technical assistance at the soil conservation district level, cost-share assistance, and research on nutrient control. Undoubtedly, additional federal assistance from both USDA and the EPA are essential to address all of the agricultural pollution in the Bay region.

We also are developing initiatives to address sedimentation and non-point source pollution from residential suburban and urban areas. For the past ten years, Maryland has had sediment and erosion control plans prepared by local developers and approved by local soil conservation districts. Enforcement of plan compliance in the field by local governments has had mixed results. We intend to introduce State legislation which will transfer enforcement authority for erosion and sediment plan compliance from local government to the Department of Natural Resources with provisions for redelegation to local governments based on a demonstration of capability and performance.

In addition, we are considering providing grants to local governments to ensure adequate implementation of a new State program for stormwater management. Retrofitting existing urban areas to reduce sediments, nutrients and toxics into the Bay is also of great concern. Since state-of-the-art best management practice techniques have not been fully developed, we intend to establish demonstration programs for existing State facilities and for local governments in urban areas.

Finally, we also intend to look closely at the role that land use planning and zoning can play in preventing harmful development in sensitive critical Bay areas.

Before leaving the subject of non-point source pollution, let me stress that federal assistance is essential. The contribution of non-point source pollution to the Bay's decline is considerable and extensively documented thanks to the EPA Study. The magnitude of the problem in terms of costs for controlling these pollutants in the three primary states is tremendous. The complexity of the problem stemming from the diverse causes, the diffuse sources and the magnitude of the need, presents a great challenge to us. Perhaps that explains why historically, federal and State ef-

forts in this area have been minimal. The level of all federal expenditures in Maryland for non-point source controls, including actual construction of management facilities in the 1973 to 1983 decade, was $48 million, which is 4.4 percent of the amount of federal funds received in Maryland for construction of municipal sewage treatment works (approximately $1.1 billion). If we are to reverse the decline of the Chesapeake Bay, we cannot allow this trend to persist. As described above, I intend to commit significant State resources towards controlling non-point source pollution. Both HR 2817 and HR 4037 will greatly assist this task in helping us to maximize our efforts, and will assist similar efforts in Virginia and Pennsylvania.

As far as control of toxic pollutants entering the Bay is concerned, we believe that a strong pretreatment program is the keystone of toxic pollution control. I understand there is a desire expressed by some groups for Clean Water Act changes that would allow communities to develop alternative pretreatment programs which would have to demonstrate equivalence with the forthcoming federal standards. I would urge the Committee to reject this argument. In my view, waivers of national categorical standards for pretreatment will likely result in delay and uncertainty thereby impeding EPA's ability to assure an adequate and consistent level of toxics removal.

Maryland intends to enhance our pretreatment efforts so that there will be adequate State oversight and control of industrial pollutants discharged to municipal systems. In addition, we are proposing to increase our enforcement efforts and to establish new programs providing for the biomonitoring of industrial and municipal discharges. Analyzing these effluents to determine their toxicity to Bay aquatic resources will provide us with data needed to improve the quality of State National Pollutant Discharge Elimination System (NPDES) permits.

To conclude this discussion of Maryland's initiatives to address the water quality problems in the Chesapeake Bay, let me bring to your attention our efforts on the Patuxent River, a tributary to the Chesapeake Bay. Maryland has taken an innovative approach to management of water quality by setting targets for nutrient load reductions over a specific time period, and then designing the best mix of strategies to meet them. The Patuxent strategy is the prototype for the way in which Chesapeake Bay Program findings and information can be translated into action strategies for other portions of the Bay.

Initially, we will be examining specific areas of the Bay and its tributaries which are severely stressed or in need of protection for targeting load reductions. Ultimately, this may necessitate changes to our water quality standards to recognize the relationship between living resources in their critical life stages and ambient water quality.

As I previously noted, the states of Maryland, Virginia and Pennsylvania are currently working with EPA reviewing their management recommendations to develop a regional plan for Chesapeake Bay management. This regional effort was launched in October 1982, when Governor Robb and I met to discuss the EPA Bay Program findings and agreed to work cooperatively on a management strategy. Several months later, we journeyed to Harrisburg, Pennsylvania, where we briefed Governor Thornburgh, who pledged his support for the Bay clean-up effort. Then in July 1982, Governor Robb, Lt. Governor Scranton and I met with EPA Administrator Ruckelshaus and five U.S. Senators to discuss the health of the Bay and the need for a federal/interstate management program. Moreover, throughout this process my Administration has been working jointly with the Maryland General Assembly to develop our implementation initiatives for the Bay.

This regional cooperation and intergovernmental support is unprecedented. It reflects the heightened public awareness and concern for the health of the Bay. In developing our Maryland initiatives, we have worked with farmers, watermen, sportfishermen, conservationists, environmentalists, industry, and local government. There is a collective determination to restore the Bay. More noteworthy, however, is the recognition that all of us have helped to create the problem and we must all take responsibility and work together to revitalize the Bay.

On December 7, 8, and 9, 1983 at the George Mason University in Fairfax, Virginia, I will be joining the Governors of Pennsylvania and Virginia, Mayor Marion Barry of the District of Columbia, the Chesapeake Bay Commission (a bi-state commission of the General Assemblies of Maryland and Virginia), and the EPA in sponsoring a summit conference on the Chesapeake Bay. We are all looking toward this Conference as an opportunity to jointly develop a series of interstate actions on the Bay. The decisions made at the Conference will form the major components of the interstate management plan for the Chesapeake Bay called for in HR 2817.

Following this Conference, the states, in conjunction with EPA, will develop grant proposals for the Fiscal Year 1984 $3 million appropriation for cost-sharing assist-

ance. Thus, it is my hope that we can expect the first year of the combined federal-state implementation program to begin in the early months of 1984.

HR 2817 would provide the kind of supplemental financial, programmatic and legal support needed to strengthen this effort. The language in HR 2817 concerning the Chesapeake Bay is to be commended for several reasons. First, it is innovative in recognizing the importance of a management plan to guide action on the water quality problems of the Chesapeake Bay. Second, the bill recognizes that such a management plan must be an interstate plan in order to address effectively the Bay's water quality problems. Third, the proposal for cost-sharing of the implementation of a management plan by the states and the federal government will continue the productive partnership begun through the Chesapeake Bay Program. Fourth, the bill acknowledges the importance of a continuing role for the federal government on the Bay.

I welcome the emphasis of the bill on implementation. The Chesapeake Bay Program has provided us with much information that we can take direct action on now. The $10 million authorization for grants to the states in Section 117(e)(1) will provide the states with an excellent incentive to strengthen our Bay management programs.

In my view, the "interstate management plan" discussed in 117(a) of the proposed new section will be developed by the states. As I noted earlier in my remarks, it will be drawn from the alternative management recommendations contained in EPA's final management report. The one-year time period of formulation of the plan is more than reasonable given that the states are already working with EPA and hope to make some financial commitments for action early in 1984.

I have already described the kinds of activities we would expect to use these funds for in Maryland. We intend to accompany any new program initiatives with a strong program to monitor water quality and living resource changes in the Bay. We need to establish clear benchmarks in order to evaluate our progress toward a cleaner Bay and to make mid-course corrections if necessary.

Let me emphasize that the interstate dimension of a management plan is tremendously important. I consider it critical to future management of the Chesapeake Bay that there be continued communication and cooperation among the states and the federal government in formulation of strategies to manage the Bay. I am committed to Maryland's strong participation in a continuing interstate institutional mechanism to coordinate implementation of interstate management strategies for the Chesapeake Bay.

I am convinced that the best mechanism for continuing interstate/federal coordination on the water quality and fishery problems of the Bay is the continuation of the Management Committee structure. This institutional mechanism has been very effective in coordinating federal and state involvement throughout the Chesapeake Bay Program, and we expect that it would continue to provide the kind of coordination necessary during the implementation phase of the program.

It would be desirable to provide basic staff support to the Management Committee through a continuing EPA Chesapeake Bay Program office. This office should be composed of a small core staff and continue to be located in Annapolis. The responsibilities of the office would be to provide support of the Management Committee and public participation activities, oversee operation of the Baywide computer system, assist in further development of the mathematical water quality model and Baywide federal/state monitoring systems, and conduct additional limited research on water quality and fishery problems in the Bay. The continuing Chesapeake Bay Program office should be funded out of the $3 million appropriation for Section 117(e)(2). Also the be funded out of 117(e)(2) would be the modest research efforts called for in Section 117(c).

The proposal for 55 percent federal cost-sharing of implementation activities is reasonable. The concept of cost-sharing recognizes the joint responsibility of the states and the federal government in managing the Chesapeake Bay.

Allocation of the cost-share assistance within the Bay region is left to the discretion of EPA rather than stipulated in an allotment-type formula. I assume EPA will make these funding determinations in concert with the states. This flexibility is important in that it will allow EPA and the states to target funds where they are most needed. Moreover, as I understand the legislation, EPA would not be precluded from allowing one state to provide the required match for another state's cost-share. Again, this kind of flexibility will enable us to maximize our resources and further illustrates the need for EPA's continued presence to enhance regional cooperation.

I believe that the authorization for $10 million per fiscal year for four years is a reasonable and rather modest amount to assist the states in the Chesapeake Bay watershed to undertake some significant programs.

At this time, I cannot definitively state a precise cost figure in terms of Maryland's financial commitment for Chesapeake Bay clean-up because we are currently reviewing both Maryland's total revenue picture and the cost estimates of our Bay initiatives. However, I am hopeful that next year Maryland will be able to commit roughtly $10-15 million in operating costs and $25-40 million in capital costs toward protection and restoration of the Bay. Not all of this amount is anticipated to go to water quality improvement. Indeed, some of these funds will go towards restoration of aquatic resources and further research activities. Nevertheless, a significant portion will be directed towards point and non-point pollution control activities with particular emphasis upon strengthening our ability to inspect and enforce effectively.

Earlier in my testimony, I stressed the need for increased federal support in the area of non-profit source pollution control. HR 4037 provides an excellent framework and the necessary financial assistance for addressing these problems. In my view, the proposed legislation has several key elements. First, it directs the states within 270 days after enactment to identify areas where non-point source problems are critical to achieving water quality standards. Second, it directs the states to develop in cooperation with local soil conservation districts, a comprehensive four-year implementation plan to control non-point sources of pollution which must be approved by EPA. Third, it authorizes $150 million annually to the states on a 50-50 cost-sharing basis for both technical and financial assistance to implement these plans. Fourth, it provides for EPA to utilize a management conference approach in order to address regional non-point pollution problems. Fifth, it directs EPA to work with other federal agencies whose facilities or activities within the states are contributing significant non-point source pollution and to assist them in taking corrective action.

Regarding allotment of funds authorized under HR 4037, I offer this observation: I believe that the approach of providing assistance to states on a first-come-first-serve basis with a 15 percent limitation per state, will enable EPA and the states to specifically target those areas with critical non-point source pollution problems and will serve as a strong incentive for states such as Maryland, to expeditiously implement control strategies.

Finally, while I understand the concerns of those individuals who favor a mandatory non-point source program with rigid deadlines and tough enforcement measures, I believe that given the highly complex implementation techniques along with the costs associated with launching a major enforcement program, an incentive cooperative approach to implementation, as provided in HR 4037, is the better option. We in Maryland intend to work cooperatively with our landowners providing education, technical and financial cost-sharing assistence. I am not suggesting that we will not take swift enforcement action against landowners who refuse to cooperate, but merely that the bulk of our resources should initially be directed towards providing assistance.

Before concluding my testimony, I would like to sound a note of caution. Congress should not consider the funds authorized under HR 2817 and HR 4037 a substitute for existing Clean Water Act funds available for both the construction of municipal sewage treatment systems (the Construction Grants program), and grants for pollution control program activities. Funding of these Clean Air Act programs must be maintained at their current levels if the states of Maryland, Virginia and Pennsylvania are going to be successful in revising the decline of the Chesapeake Bay.

With respect to the Construction Grants program, Congress should recognize that the Construction Grants program has been the major source of funds to the states in the past for sewage treatment facilities and must be continued. Accordingly, I urge the Subcommittee to take whatever steps are necessary to ensure that there will be a timely reauthorization of this program before October 1, 1985. In addition, it is especially important that federal funding formulas recognize the severe nutrient enrichment problems typical of estuarine systems like the Chesapeake Bay by permitting Construction Grant funds to be spent on advanced waste treatment facilities where necessary. In this regard, Congress should reconsider its policy of requiring EPA headquarters review of the cost-benefit aspects of advanced waste treatment funding and allow this decision to be delegated to the states.

In conclusion, let me assure you that my Administration is committed not only to the protection and restriction of the quality of the Chesapeake Bay, but also to effective implementation of all the provisions of the Clean Water Act. HR 2917 and HR 4037 will enhance our efforts, and I urge that they be included in the reauthorization of the Clean Water Act.

As I stated at the outset, I strongly support HR 2817 in its recognition of the national significance of the Chesapeake and the necessity for continued state/federal

involvement in Bay management. Preservaton of the Bay has engaged the energy, excitement and dedication of all of us in the Bay region. With enactment of this legislation, Congress would commit itself to the protection and preservation of this most precious national resource—the Chesapeake Bay.

Mr. ROE. Please proceed, Governor Hughes.

TESTIMONY OF HON. HARRY HUGHES, GOVERNOR, STATE OF MARYLAND

Governor HUGHES. I will try to hit some of the highlights and try not to be too redundant because you have heard much of what we all feel is important about the bay. First, I want to join in with Congressman Dyson and Congresswoman Mikulski in thanking you in this committee for your efforts over the years in protecting the environment of this country and particularly the clean water area.

I want to thank Barbara Mikulski for that very glowing introduction that she gave me. There is one thing that she obviously said that really did not have to be said and that is that there is nobody that ever thought I was part of some think tank. [Laughter.]

I am flattered that she would think that maybe somebody thought that.

I am here to do two or three things. One is to support the efforts of this committee in continuing a strong Clean Water Act. We think it is essential in Maryland to achieve our goals and the national goals of fishable, swimmable waters, and we feel that national minimum standards should be maintained and adequate enforcement should be maintained. And I know that this committee has a longstanding record of supporting clean water through the Clean Water Act, and we certainly do urge reauthorization of that act next year.

Specifically, I am here to talk about Congressman Dyson's bill and to thank him for his extraordinary efforts on the Chesapeake Bay, our efforts to save the bay, as well as H.R. 4037, which addresses nonpoint sources.

You have heard some of the reasons of why the Chesapeake Bay is such an important national resource, and I must say I probably have some personal bias because of where I come from. I have lived on all sides of the bay. I was born and raised on the Eastern Shore down where you were hunting, I suppose, Congressman, for many, many years and represented that area in the general assembly for 16 years. And then I lived in Baltimore for 10 years. I was up in Barbara Mikulski's area, and I now live in Annapolis which is on the western side. So I have seen it from all sides. I have been all over it. I have been up every single river in Maryland that is a tributary of that bay. So I think I have some understanding of its importance and I certainly have some great feeling of affection for it.

As far as its national interest is concerned, you have heard from Governor Robb's testimony how important it is as a national asset. When you think about it, there are 64,000 miles, 64,000 square miles that make up the Chesapeake Bay watershed. And in that watershed, over 8 million people live. And it includes two major Atlantic ports. This is an astounding fact that you have also just heard, but I think it is worth reemphasizing, that it produces more

marine life than any other body of water in the world, with the exception of the Atlantic and the Pacific Oceans. Now, if that in itself does not say that this estuary is of national interest, then I do not know what else we could say about it.

Eighty five percent—and this is an area where we are trying to impose some restrictions to improve the harvesting of striped bass—85 percent of the striped bass that are going up and down the east coast from Maine, I guess, all the way to Florida, 85 percent of those are spawned in the Chesapeake Bay and its tributaries.

So I could go on and on with a lot of other facts that indicate very strongly that there is a national interest in this wonderful estuary. And what is the significance of the EPA Chesapeake Bay program and this study? We have all been troubled by the findings of that study. And that was a very good study.

And I think the Congress is to be congratulated for providing the funding and authorizing that 7 year, $30 million study. And one of the unique things about the study, it was not just a research project; it was also a management study. So it did not just tell you what is wrong with the bay, it told you also some of the management solutions that you can address in solving the stresses of the bay, the problems of the bay. And those are the kinds of things that all the States are now working on and will get some very concentrated attention at the meeting at George Mason University in December.

One of the things that the study showed that when you first hear about it, it sounds that that is not too bad, that there are excessive nutrients in the bay. You think, well, that is fine. The bay is rich. Well, that is not fine. It has gotten beyond that point. And these nutrients are, without going into a scientific explanation, are promoting the growth of algae, which in turn is reducing oxygen, and we have some areas of the bay that are really totally without oxygen and those areas are increasing in size over what they used to be.

We found that these nutrients come from various sources, from farmland, from point sources, from urban runoff. I just heard this morning that there is one area where when you talk about erosion from farmland—and we have heard some figures from Congressman Dyson about the cost to the farmers of fertilizer that goes into the bay—that in one area they are losing by erosion each year 20 tons of topsoil per acre per year, and that is an astounding figure. And all of these things are contributing to the problems that the bay is suffering from.

The shortage of grasses is a terribly important problem because so much of the marine life of the bay depends upon that. And those ducks and geese, Congressman, like that very much, too. And we found that there is a connection between the excessive nutrients and phosphorous and nitrogen that has caused this problem.

So there is a lot that we have learned and a lot that we are learning about to address it. And one of the important things that we have learned from this study is that the bay is like a sink. What goes in there stays there. I think there was some concept that eventually it washed out to sea. That does not happen. It stays

there; it is like a sink, and that is an important thing to know when you are addressing the problems of the bay.

So we are now at the point where we have learned what the problems are, and I might say that there has been enough studying. There is a whole catalog of studies that have been made of the bay over the last many, many years and none, though, as good as this EPA study. And it is now time to stop the studying and stop the talking and start getting to work in solving the problems of the bay.

And we feel that in doing that, the comprehensive approach is absolutely essential. It is a national problem. It is a State problem. It is a regional problem. It is a local problem.

And so it is going to take the comprehensive approach that has been there already with the Federal Government involvement of EPA with the three States. In the EPA study there was a management committee that was comprised of the three States of Virginia, Pennsylvania, and Maryland, the EPA, and that management committee sort of guided that study over the years, did a good job, and we certainly expect and Congressman Dyson's bill requires that that sort of a structure remain. And we feel that that is essential, that it does remain so we can have this regional, interstate, comprehensive approach to solving the problems of the bay.

And I think that is unprecedented, really, to a certain extent and what Congressman Dyson said I certainly agree with, that that this approach that is being taken here, this comprehensive regional approach can serve as a model for addressing similar problems elsewhere throughout this country.

To show you the cooperation, we did meet with Governor Thornburgh in Pennsylvania. Governor Robb and I did. He has pledged his support for this effort. That is terribly important. The Susquehanna River provides about 50 percent of all the freshwater that goes into that bay. So that is important that Pennsylvania be a part of this effort. And I applaud Governor Thornburgh for that because the bay does not lie within Pennsylvania; it is within Maryland and Virginia. But the three Governors are working together and we have met with Mr. Ruckelshaus, who has indicated his positive thinking about addressing the problems of the bay and has acknowledged that it also is a national asset.

In our efforts in Maryland, we have been working with everybody you can think of, watermen, farmers, business people, industry, environmentalists, in discussing the possible strategies that we will implement in Maryland in doing our part in solving the problems of the bay.

And we have worked very closely with the Maryland General Assembly, extremely close with them, and I can say that I do not know of any effort—and I have been in public office for 27 or 28 years—and I do not know of any effort where there has been the universal support that I have seen for this effort to save the Chesapeake Bay. And I think Roy Dyson and Barbara Mikulski would agree with that. I do not care what part of the State I go to and I do not care what kind of group I am talking with, there is a spontaneous support for this effort and I think a recognition that we are going to have to do some things differently, and we are all going to have to make some sacrifices, and a recognition that we

all benefit from the Chesapeake Bay, regardless of where we might live in the State of Maryland.

And that is something that gives me great optimism, that we are going to solve this problem. We hope the Federal Government is going to be there with us with their technical support and their coordinative efforts and also their financial support.

I might tell you a few things about what we have been doing in Maryland so that you do not think that we are just coming to Washington to get you to solve all our problems. We do not expect that. We do not want that.

We have been imposing restrictions on the amount of phosphorous that can go into the water out of a waste-treatment plant. We have eliminated a lot of the chlorine, I think over 65 or 70 percent of it, if I am correct, which has had a detrimental effect, chlorine has, on the spawning areas of our fish.

And we are continuing those efforts. We will be reducing even more phosphorous going from wastewater treatment plants, not just in the northern part of the bay where we have been doing it, but in other parts also.

We are going to upgrade our inspection and enforcement capabilities. We are going to impose pretreatment efforts on industrial waste, that instead of just letting it go into a wastewater treatment plant, which might foul it up, it is going to have to be treated through a permit process before it goes into a municipal wastewater treatment plant. And then we will be improving our programs for monitoring that effluent so that we know what is going out and what action we might have to take when we find toxicity problems.

In nonpoint sources we were able to get through legislation a year or so ago in the Maryland General Assembly, which set up $5 million to help farmers in doing best-management practices. And this is on a matching fund basis because some of the practices do not cost too much, but some are fairly expensive if you expect the farmer to build a berm or to take some very productive farmland out of cultivation to avoid the erosion and runoff.

And we are getting treat interest from farmers in that. The last time I heard over 300 farmers had made application for matching funds under this program. And part of our program is to inform and educate farmers about this problem, letting them know about some facts like Roy Dyson has mentioned, and what they can do about it, and how it is in their best interest, not only in the interest of preserving the bay, but in their best interest. And I might also add we have been getting some very positive reaction and cooperation from the farming community in Maryland.

We have been doing demonstration projects on retrofitting in urban areas to eliminate and reduce the problem of urban runoff. We have been granting assistance, funds to local governments for storm-water management and adopted some new regulations on storm-water management.

So there are a lot of things that we are doing already in Maryland to help solve that problem of the bay and keeping our waters clean. Now, I cannot give you a figure on what more we are going to do. We are addressing even more initiatives, a lot of which are

improving or expanding what we already have in place. Some are new.

But we feel at this point—and I will know better in about 1 month—that the commitment by Maryland of financial resources to this is probably going to run in the neighborhood of any where from $12 to $15 million a year. And that is just operating. And capital costs would be somewhat more than that, depending on what we finally come up with as a final program.

So I think that shows that we are willing to put our money where our mouth is, that we are willing to make our—take our fair share of the burden, and we should because we benefit, as Virginia does, more than any other area from the bounty of that bay.

So we need Congressman Dyson's bill. We need it for a couple of reasons. We need the assurance that the EPA is going to remain as a part of this effort. We do really think that that is important. They have the lab in Annapolis, and there has been $900,000 last year and $4.2 million for this coming year to keep that lab going and to help share in the cost of the transition from a study over to implementation, but we need this bill that will provide $10 million a year for the next 4 years to be matched by the States.

And one of the important features of the bill is that the matching is flexible so that it does not say how much any one State might have to match. And that is what we need in this three-State area.

For example, I think in fairness we would not expect Pennsylvania to put up as much money as, say, Maryland or maybe Virginia because even though they have an interest, they do not receive the benefit from the bay that we do. They receive benefit, but not to the extent that we do. So this flexibility says that one State, for example, could put up the match for the Federal funds that might go to another State.

We think that kind of flexibility is essential. So we hope that this committee will look favorably upon that bill. We think $10 million a year is rather reasonable and I think it is pretty obvious at this point that the States involved are going to be making a commitment much larger than that, total commitment much larger than that. And the recent word I heard of the EPA position on this bill—I just heard that this morning, that they might be opposing the enactment of this bill, is, I would say, disappointing. And I hope that that position does not continue. I hope it does not prevail because we are hoping for this Federal involvement and we expect it and we are going to move ahead on saving this bay, regardless of what else happens. And we think it is that important. But I also think it is important enough that the Federal Government be involved.

That is basically, Mr. Chairman, all I wanted to stay. I would mention just briefly about the Oberstar bill, H.R. 4037, which addresses the nonpoint sources and requires each State to submit a report within 270 days and than a plan within 270 days, which we think is reasonable. And we feel that is terribly important; $150 million sounds like a lot of money. Nationwide I do not think it is a lot of money for addressing this problem of urban and agricultural runoff. For example, in Maryland, our estimate is that over the next several years it will, in the farm, agricultural runoff, the cost

to correct that is going to be about $90 million. Right now I think our Federal funds that address this area amount to about $1 million a year.

So we also support the enactment of that bill as another effort to promote the Clean Water Act of this country.

So, I thank you, Mr. Chairman, for permitting these few minutes to testify. In essence, we support a strong Clean Water Act. We see a need for swift reauthorization early next year of that act, and we particularly stress, based on everything we have said today, the enactment of Congressman Dyson's bill, H.R. 2817. Thank you very much.

Mr. ROE. I want to thank you very much, Governor and Senator Gartland, for your testimony, and certainly Roy. I think that you have demonstrated in your testimony, not only in your prepared testimony, but in your own presentation you made here this morning an indepth understanding of the order of magnitude of the problems we are faced with. And I think that the investment that the Federal Government has made in the Chesapeake under your leadership, and Governor Robb, and Governor Thornburgh has been obviously well placed like in their order of priorities in the Nation.

And I think one thing, if you had been privy to hear the testimony this past week we have been hearing from witnesses all over this Nation vis-a-vis the point of nonpoint-source runoff and recognizing that some on the order of magnitude of 50 percent of the pollution in our waterways, in our rivers, and our bays are coming from other than point source discharges, that the Chesapeake Bay initiative has really established a foundation.

I think the effort that has been placed into the bay really has created a model for us to be guided by and to see three States come together and form a compact, as you have, and an understanding, it is really a major step forward.

We know that we cannot resolve the matters of nonpoint source pollution and clean up our estuarine areas or our rivers or bays unless we have States and regions working together in commonality of purpose. So I want to compliment you for your testimony and for your leadership, together with Governor Robb, and Governor Thornburgh, Roy Dyson, Barbara Mikulski, and Senator Gartlan for this presentation this morning.

And I think it sets the foundation as what this committee is going to do. The environmentalists throughout this country have said to us we have done a great deal; we have taken many steps since 1972, but in order to cure the pollution problems of this Nation and improve the quality of life of our country, we have got to deal substantively with the non-point-source issue, of course which you are directing your attentic to today.

The gentleman from Minnesota.

Mr. STANGELAND. I can only echo, Mr. Chairman, what you say. I would like to advise both Governor Hughes and Senator Gartlan that while I have hunted on the bay, I have not depleted a resource yet. [Laughter.]

Mr. DYSON. It is pretty good this year, I understand.

Mr. ROE. What he is saying is he is not a very good shot. [Laughter.]

Are there any other—the gentleman from Massachusetts.

Mr. DONNELLY. Thank you, Mr. Chairman. Let me just welcome you Governor and Senator and let me just state for the record on behalf of all the members of the committee what a wonderful job Roy Dyson has done in lobbying this committee. He has had, I think, all of us out on the Chesapeake, and as you point out, Governor, this is an initial step of what has to be done.

We have a similar problem up in Massachusetts with Boston Harbor and I hope that in the eventuality I will do as good a job lobbying this committee for Boston Harbor as Roy Dyson and the Maryland delegation has done for the Chesapeake.

Mr. ROE. As it is written from the good friend from Massachusetts, one will have to stand in line because I have read the Governor's testimony and I am beginning to have some thoughts of my own about the Delaware, don't you know. [Laughter.]

Again, thank you very much. And, Roy, you have done a splendid job in bringing the leadership of your State before us, and we appreciate your outstanding efforts in getting this legislation passed.

Mr. DYSON. Thank you, Mr. Chairman.

Mr. ROE. Thank you very much for being with us this morning.

The committee will recess for 10 minutes to go vote. [Recess.]

Mr. ROE. The Subcommittee on Water Resources will reconvene, and we have with us as our next witness Ms. Rebecca Hanmer, who is the Deputy Assistant Administrator, Office of Water, for the U.S. Environmental Protection Agency, accompanied by Mr. Thomas Eichler, Regional Administrator of EPA's region III, Philadelphia, Pa.

We want to welcome you back to the committee and appreciate your being with us this morning. I know that Ms. Hanmer has done an extraordinary job in her responsibilities in the EPA and will continue to do so, and we always value your judgment, and your wisdom, and the help that you have been to this committee. I think much of the work that you have done has helped us in framing the legislation, and you have the tough job of carrying it out. So now, we want to listen to what your observations are.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

TESTIMONY OF REBECCA HANMER, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY BEFORE THE SUBCOMMITTEE ON WATER RESOURCES COMMITTEE CN PUBLIC WORKS AND TRANSPORTATION U.S. HOUSE OF REPRESENTATIVES NOVEMBER 17, 1983

Good afternoon Mr. Chairman and Members of the Subcommittee. I am Rebecca Hanmer, Deputy Assistant Administrator of the Office of Water. I am pleased to be here today to testify on a common goal—the restoration of the Chesapeake Bay to "fishable/swimmable" quality. With me today is Mr. Thomas Eichler, Regional Administrator of EPA's Region III office which has jurisdiction over the majority of the Chesapeake Bay Basin.

As you know, the Chesapeake Bay Program Study was initiated seven years ago as a cooperative research study of the Bay system. The Study was unique in several ways. First, there was an outstanding cooperative spirit of the States, EPA, and other federal agencies in learning more about Bay water quality trends, most notably the impacts of nutrients and toxics, and the decline of submerged aquatic vegetation (SAV). As a result of this major effort, the Agency's overall working relationship with the Bay States has improved, as has the cooperative efforts between intra-

state agencies, for example between State natural resource and pollution control agencies. Second, the Study not only focused on water quality, but a comprehensive effort relating the impact of water quality on living resources. Third, the public was directly involved in the program in a constructive manner, and played a significant role in problem definition and guidance.

Let me emphasize, Mr. chairman that neither the Agency nor the States see the Study being placed "on the shelf". Rather we see the Study, which has culminated in the recently published "Chesapeake Bay: A Framework for Action," as having a major impact on directing the States and EPA in taking measured control actions, targeting priority problems in priority areas. This report defines two major challenges which must be addressed to insure the recovery of the Bay, those being the effects of toxic and nutrient loadings on the Bay.

Thus, the efforts on the Bay have changed emphasis from research to implementation. During the Bay Program's first seven years as a research program the Agency played the leading role with State involvement being insured through the Management Committee. Now the Bay community is poised for action, and it is the States who have primary responsibility for implementation. As various programmatic responsibilities, for example NPDES permit administration, are delegated to the States the Agency is assuming more of an overview function. Therefore, it would be inconsistent with the Agency's statutory mandate to insist that it play the lead role in control action implementation.

In this oversight role, the Agency will continue its efforts to improve the Bay to a Baywide "fishable/swimmable" water quality. Indeed, this is an Agency responsibility under the Clean Water Act. EPA is committed to working with State and local governments to assist them in their efforts to institute control measures on the Bay. However, we think it is also important to recognize that EPA is basically a pollution abatement agency. In comparison, the States have much broader responsibilities, including pollution control, wildlife management, habitat restoration, and land use management. In this respect, the States can efficiently direct their resources toward the common goal of restoring the Bay's water quality.

Let me now define what we see the Agency's role to be on the Bay. In a way, we at the Agency see the Chesapeake Bay Program as a prototype for the future role of EPA's water programs. As various programmatic responsibilities, for example the NPDES permitting program and substantial components of the Construction Grants Program, are delegated to the States, the Agency is assuming more of an overview function. In using the term "overview" we are not limiting the Agency role to that of auditing State accomplishments in a very narrow way. Rather, we see the overview function as a broad, long-range responsibility in which the Agency shifts its emphasis from concerns as to how specific programs are being implemented to a much broader concern as to how we can direct these programs to achieve basin-wide objectives. This role assumes many responsibilities, let me now turn to those responsibilities.

We believe our role includes a coordination function. In the case of the Bay, the Agency will work with the States to coordinate federal and state activities, channeling efforts to priority projects through technical assistance efforts of other federal agencies. The Agency's coordinating responsibilities is provided by the presence of the Chesapeake Bay Liasion Office in Annapolis. The Agency proposes that this Office continue to represent the Chesapeake Bay Management Committee—composed of managers from State agencies, other federal agencies, and members of the public. The Agency further proposes that to assist this management group, an Executive Committee made up of the Governors of the Bay States and EPA's Regional Administrator, Mr. Eichler, be established to provide the high level policy and political commitment necessary to make and carry out tough control decisions. At the national level, the Agency is directing the head of the Office of Water Regulations and Standards to coordinate Headquarters efforts in assisting Region III and the States to the maximum feasible extent in terms of both coordinating federal efforts and providing technical assistance.

Within the context of control decisions, let me now explain what we at EPA expect to accomplish in the two key areas of toxic and nutrient control. In the Toxic area, EPA, in cooperation with localities and States, is making significant progress in controlling point sources through the issuance of second-round Best Available Technology (BAT) permits limiting toxic discharges and through the implementation of industrial pretreatment programs. As I said earlier, each of the Bay States administers the NPDES permitting program. Technical assistance is available to the Bay States in developing ambient and effluent standards through both Region III and the Office of Water Regulations and Standards. In addition, the Agency is also developing a post-BAT toxics control program based to a large extent on effluent

and instream biomonitoring toxicity testing. These methods have now been field tested in several States. The Agency will be implementing these toxic control approaches as a national pilot with the States of Maryland and Virginia. This will be more than a special research study, discharge permits will be developed on the basis of study results.

In the area of nutrient control the Agency is already committed to funding phosphorous removal of sewage treatment wastes on the Upper Chesapeake. In addition, we will be providing cost sharing funding of nonpoint source control in the Bay States this fiscal year based on the Congressional appropriation for Chesapeake Bay. As Mr. Ruckelshaus indicated in his testimony before you the other day, we are also working on developing a Memorandum of Understanding (MOU) with USDA on providing technical assistance to State efforts on controlling agricultural nonpoint sources. Cooperative efforts to address nonpoint source impacts on the Chesapeake Bay are continuing in 1984. This agricultural nonpoint source control cooperative effort will be directed toward priority basins and will include extensive State involvement. We expect that the results will be as successful as the three USDA projects in the Bay tributaries.

In addition to the responsibilities discribed above, we see several other responsibilities specific to the Liasion Office. Prime among those responsibilities is monitoring the Bay to detect trends and evaluate the impact of control actions. In fiscal year 1984 the Agency's monitoring activities will include monitoring the anoxic zone, an area characterized by low dissolved oxygen, reaching from the Bay Bridge to the Rappahannock River. Another related responsibility will be the development of a model of the Bay's mainstem which will enable us to accurately project the impact of control options on the Bay. Other responsibilities include maintaining the Bay Program's data base, the largest data base on any estuary; conducting special studies, particularly regarding the impact of water quality on living resources; and continuing to provide support for public involvement in the decision making process.

As I said inmy opening statement, the Agency shares the Bay community's goal of restoring "fishable/swimmable" water quality Bay wide. In that vein, the Agency views H.R. 2817's recognition of the Bay as an important area of national concern in a favorable light, and as can be seen significant current activity is already occurring to assure the restoration of the Bay's water quality. We believe that the current act is working and therefore do not support enactment of H.R. 2817. The control programs necessary to restore the Bay's water quality and living resources can and are being developed within the context of the Agency's already exising authorities of the Clean Water Act. Indeed, the fact that such concerns can be addressed within the context of the Act speaks to the overall wisdom of the Act's statutory construct. This concludes my prepared testimony. Mr. Eichler and I will be pleasd to respond to any questions. Thank you.

Mr. ROE. Please proceed.

TESTIMONY OF REBECCA HANMER, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY THOMAS EICHLER, REGIONAL ADMINISTRATOR, EPA'S REGION III, PHILADELPHIA, PA.; DR. TUDOR DAVIES, AND GREENE JONES, WATER DIVISION DIRECTOR, PHILADELPHIA EPA

Ms. HANMER. Thank you, Mr. Chairman.

Good morning to you and to members of the subcommittee.

As you pointed out, I am Rebecca Hanmer, Deputy Assistant Administrator of EPA's Office of Water. I am pleased to be here to testify today on a common goal we share with Governor Hughes, Governor Robb, and the other speakers who have appeared before you this morning and as well, I trust, with the subcommittee—that is, the restoration of the Chesapeake Bay to fishable-swimmable quality.

With me today, as you pointed out, is Mr. Thomas Eichler, who is the Regional Administrator of EPA's Region III Office. It is this

Office that has jurisdiction over the majority of the Chesapeake Bay Basin.

Also, Mr. Chairman, I would like to ask your permission to bring to the table Dr. Tudor Davies, who is now a member of the Office of Water, but who is the EPA scientist who directed the Chesapeake Bay program.

Mr. ROE. That is a splendid idea. Would Dr. Davies join us at the table? We want to welcome you, Doctor, to our panel this morning.

Ms. HANMER. Also with us is Mr. Greene Jones, who is the Water Division Director from our Philadelphia Office, who has chaired the Chesapeake Bay Management Committee. It was under his direction that the recent Framework for Action was produced.

As you know, the Chesapeake Bay program study was initiated 7 years ago as a cooperative research study of the bay system. The study was unique in several ways. First, there was an outstanding cooperative spirit of the States, EPA, and the other Federal agencies in learning more about bay water quality trends, most notably focusing on the impacts of nutrients and toxics, and the decline of submerged aquatic vegetation.

As a result of this major effort, focused on these three critical areas, the Agency's overall working relationship with the bay States has improved, as have the cooperative efforts between intrastate agencies, for example, between the State natural resource agencies and the pollution control agencies.

Second, the study focused not only on water quality, but was a comprehensive effort relating the impact of water quality on the living resources of the bay.

Third, the public was directly involved in the program in a constructive matter and played a significant role in problem definition and guidance. This is particularly important because it is the public within the bay region that will bear much of the responsibility.

Let me emphasize, Mr. Chairman, that neither the Agency nor the States see the study being placed on the shelf. Rather, we see the study, which has culminated in the recently published "Chesapeake Bay: A Framework for Action"—and I have a copy here—as having a major impact on directing the States and EPA in taking measured control actions targeting priority problems in priority areas. This report defines two major challenges which must be addressed to insure the recovery of the bay—that is, the effects of toxic and nutrient loadings on the bay.

The efforts on the bay have changed emphasis now from research to implementation. During the bay program's first 7 years as a research program, EPA played the leading role with State involvement being insured through the management committee. Now the bay community is poised for action, and it is the States which have primary responsibility for implementation of the study results.

There were two major reasons, as I see it, for this shift of responsibility. One is EPA's proper role in delegated programs under the Clean Water Act. As various programmatic responsibilities, for example, the NPDES water permit administration or construction grants management, are delegated to the States, the Agency is assuming more of an overview function. In this oversight role, the

Agency will continue its efforts to improve the bay to a baywide fishable/swimmable water quality. Indeed, this is a basic EPA responsibility under the Clean Water Act. EPA is committed to working with State and local governments in their efforts to institute control measures on the bay.

The second basic reason for the shift of responsibility is a consideration of the tools that need to be used to protect the bay, which go beyond EPA's mandate. EPA is basically a pollution abatement agency. In comparison, the States have much broader responsibilities, including pollution control, but also including wildlife management, habitat restoration, and land use management. It is a broad variety of these tools which must be brought to bear. The States can efficiently direct their resources toward the common goal of restoring the bay's water quality.

These broad responsibilities need to be used creatively, to address areas such as nonpoint source control, phosphorous control, fertilizer, and pesticide application practices, and water conservation.

Now let me define what we see as EPA's role in the bay. In a way, we see the Chesapeake Bay program as a prototype for the future role of EPA's water programs. As I mentioned, as various programmatic responsibilities are delegated to the States, the Agency assumes more of an overview function. In using the term "overview," we are not limiting the Agency role to that of auditing State responsibilities or accomplishments in a very narrow way. Rather, we see the overview function as a broad, long range responsibility in which the Agency shifts its emphasis from concerns as to how specific programs are being implemented in detail to a much broader concern as to how we can direct these programs under the Clean Water Act to achieve basinwide objectives.

We believe our role includes a coordination function. In the case of the bay, the Agency will work with the States to coordinate Federal and State activities, channeling efforts to priority projects through technical assistance efforts of other Federal agencies. The Agency's coordinating responsibilities are provided by the presence of the Chesapeake Bay Liaison Office in Annapolis. The Agency proposes that this office continue to represent the Chesapeake Bay Management Committee. The Management Committee is composed of managers from State agencies, EPA, other Federal agencies, and members of the public.

The Agency further proposes that to assist this management group, an executive committee made up of the Governors of the bay States and EPA's regional administrator, Mr. Eichler, be established to provide the high-level policy and political commitment necessary to make and carry out tough control decisions. At the national level, the Agency is directing the head of the Office of Water—and this will be coordinated by our Office of Water Regulations and Standards—to coordinate headquarters efforts in assisting region III and the States to the maximum feasible extent in terms of both coordinating Federal efforts and providing technical assistance.

Within the context of control decisions, let me explain what we at EPA expect to accomplish in the two key areas of toxic and nutrient control.

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In the toxics area, EPA in cooperation with localities and the States will make significant progress in the near term through controlling point sources. This will be accomplished through the issuance of second round, best available technology permits, limiting toxic discharges, and through the implementation of industrial pretreatment programs.

As I said earlier, each of the bay States administers the NPDES permitting program. Technical assistance is available from EPA to the bay States in developing ambient and effluent standards through both our region III office and the headquarters Office of Water Regulations and Standards.

In addition, the Agency is also developing a post-BAT toxics control program based to a large extent on effluent and instream biomonitoring toxicity testing. These methods have been field tested in several States. The Agency will be implementing these toxic control approaches as a national pilot in the Chesapeake Bay region with the States of Maryland and Virginia. This will be more than a special research study, as discharge permits will be developed on the basis of these study and biomonitoring results.

In the area of nutrient control, the Agency is already committed to phosphorous removal in sewage treatment wastes on the upper Chesapeake. In addition, we will be providing cost-sharing funding of nonpoint source control in the bay States in fiscal year 1984, based on the congressional appropriation for Chesapeake Bay.

As Mr. Ruckelshaus indicated in his testimony before you the other day, we are also working on developing a memorandum of understanding with the U.S. Department of Agriculture on providing technical assistance to State efforts in controlling agricultural nonpoint sources. Cooperative efforts to address nonpoint source impacts on the Chesapeake Bay are continuing in 1984. This agricultural nonpoint source control cooperative effort will be directed toward priority areas and will include extensive State involvement. We expect that the results will be as successful as the three USDA projects in the bay tributaries promise to be.

In addition to the responsibilities described above, we see several other responsibilities specific to the EPA liaison office in Annapolis. Prime among these responsibilities is monitoring the bay to detect trends and evaluate the impact of control actions. In fiscal year 1984, the Agency's monitoring activities will include monitoring the anoxic zone, an area characterized by low dissolved oxygen reaching from the Bay Bridge to the Rappahannock River. Another related responsibility will be the development of a model of the bay's mainstem which will enable us to accurately project the impact of control options on the bay.

The liaison office in Annapolis will house and maintain the bay program's data base, the largest data base on any estuary; conduct special studies, particularly regarding the impact of water quality on living resources in the bay; and continue to provide support for public involvement in the decisionmaking process.

As I said in my opening remarks, the Agency shares the bay community's goal of restoring fishable/swimmable water quality baywide. In that vein, the Agency views H.R. 4108's recognition of the bay as a very important area of national concern in a favorable light, and as can be seen, significant current activity is already oc-

curring to assure the restoration of the bay's water quality. We believe that the current Clean Water Act is working. The control programs necessary to restore the bay's water quality and living resources can and are being developed within the context of the Agency's already existing authorities under the Clean Water Act. The act's authorities, for example, accommodated the congressional funding add on of $4 million for bay activities in fiscal year 1984. Therefore, EPA does not support enactment of H.R. 4108 as being a necessary change to the Clean Water Act. Indeed, the fact that such concerns can be addressed within the context of the existing law speaks to the overall wisdom and flexibility of the act's statutory construction.

We are committed—and I want to stress this—to assisting the bay States through our program under the existing Clean Water Act to the maximum extent possible within our funding and legal constraints, and we believe that the Chesapeake Bay reports and the management committee structure, which will be ongoing, give us the focus we need to make the most effective use of these resources.

This concludes my prepared testimony. Mr. Eichler, Dr. Davies and I would be pleased to respond to any questions you may have.

Thank you.

Mr. ROE. We want to thank you very much for your comprehensive testimony and thank you and your Agency for the outstanding job that you have done in coordinating EPA's effort and the other staff people to really bring forth the Chesapeake Bay study as a model for the Nation to follow. I think it is an enormous contribution to the future of the water quality needs of our Nation.

The Chair defers to the distinguished gentleman from Minnesota.

Mr. STANGELAND. Well, I just want to commend Ms. Hanmer on an excellent statement, and I look forward to working with EPA as we attempt to move forward and support efforts to revitalize that very important resource.

Thank you, Mr. Chairman.

Mr. ROE. Are there any questions of the witnesses?

The gentleman from Nebraska.

Mr. DAUB. No questions, except that I got in late; I just scanned your testimony, and I particularly want to encourage you, Ms. Hanmer, ~~to work on~~ the toxic and nutrient control areas. They are particularly of interest to those of us in the Midwest, and we appreciate your interest in that.

Thank you.

Mr. ROE. The gentleman from Georgia.

Mr. ROWLAND. No questions, Mr. Chairman.

Mr. ROE. I want to thank you very much for being with us, and we will take your thoughts into deep consideration.

Thank you very much for being with us.

Our next witness this morning is Mr. Philip Cohen, chief hydrologist for the U.S. Geological Survey of the Department of the Interior.

The Chair wants to welcome you, Mr. Cohen, to our hearing. Your agency has high respect, as you know, by this committee and the Congress, and we are anxious to hear your observations and

views, so if you would go ahead and proceed, we would appreciate it.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

Statement of Philip Cohen, Chief Hydrologist.

United States Geological Survey before the Subcommittee on Water Resources.

Committee on Public Works and Transportation, U.S. House of Representatives

November 17, 1983

THE GEOLOGICAL SURVEY'S WATER QUALITY PROGRAM

INTRODUCTION

The U.S. Geological Survey's (USGS) water-resources program is a balance of data collection and dissemination, problem-oriented water-resource appraisals (interpretive studies), and applied and basic research. In this statement, I will describe the water-quality aspects of the program. As background, I will briefly describe the organizational structure and operation of USGS's Water Resources Division (WRD), which has responsibility for the Geological Survey's water functions.

THE WATER RESOURCES PROGRAM

Mission

The U.S. Geological Survey is a non-regulatory agency having the broad mission of describing the Nation's earth resources.

Within USGS, the specific mission of the water-resources program is to provide the hydrologic information and understanding needed for the best use and management of the Nation's water resources. To accomplish this mission, the Survey's Water Resources Division, in cooperation with State, local, and Federal agencies--

- o Collects data on a systematic basis to determine the quantity quality, and use of the Nation's surface and ground water.
- o Conducts interpretive water-resource appraisals to predict the consequences of alternative plans for developing land and water resources.
- o Conducts supportive basic and problem-oriented research in hydraulics, hydrology, and related fields.

- Develops information on water-related natural hazards such as floods, droughts, mudflows, and land subsidence.

- Coordinates water-data acquisition activities of all Federal agencies.

Organization

The Water Resources Division is primarily a field organization. General direction of the Division's program is through four Regional Hydrologists located at Reston, Virginia; Atlanta, Georgia; Lakewood (Denver), Colorado; and Menlo Park, California. The four Regions consist of a total of 43 District Offices which generally are located in State capitals (Figure 1). Each District is headed by a District Chief who is responsible for the planning, programing, and implementation of water-resources investigations within the District.

Research projects support the Division's mission through study of the physical, chemical, and biological processes that affect the movement and quality of water in the hydrologic cycle. Research is conducted at three of the four regional centers and at project offices in other locations as needed.

The Geological Survey conducts its water-quality analyses in two highly instrumented laboratories in Denver and Atlanta. In fiscal year (FY) 1983, the two laboratories analyzed more than 60,000 individual samples of water.

Sources of Funds

The Water Resources Division's programs are funded as follows (Figure 2): (1) the Federal program, which is specifically identified in the annual Geological Survey appropriations; (2) the Federal-State Cooperative Program, in which the Division represents national interests, the cooperating agencies represent State and local interests, and the funding is shared 50/50; with the Federal share coming from direct Congressional appropriations; and (3) the Other Federal Agencies (OFA) Program, which is funded by the agencies that request the work.

The Federal-State Cooperative Program is a unique partnership for water-resources investigations between the USGS and State and local agencies. This program is the foundation of much of the water-resources management and planning activity in the Nation, and it serves as an early-warning system for the detection of emerging water problems. The Cooperative Program is active in all 50 States, Puerto Rico, Virgin Islands, Guam, and the Trust Territories. In FY 1983, there were joint funding agreements with more than 800 State and local agencies, at a total funding of more than $90 million. Because USGS performs most of the work, the program leads to a consistent and comparable national water information base.

Figure 1.-- Office locations of the U.S. Geological Survey's Water Resources Division.

ESTIMATED FUNDING FY 1983
WATER RESOURCES DIVISION

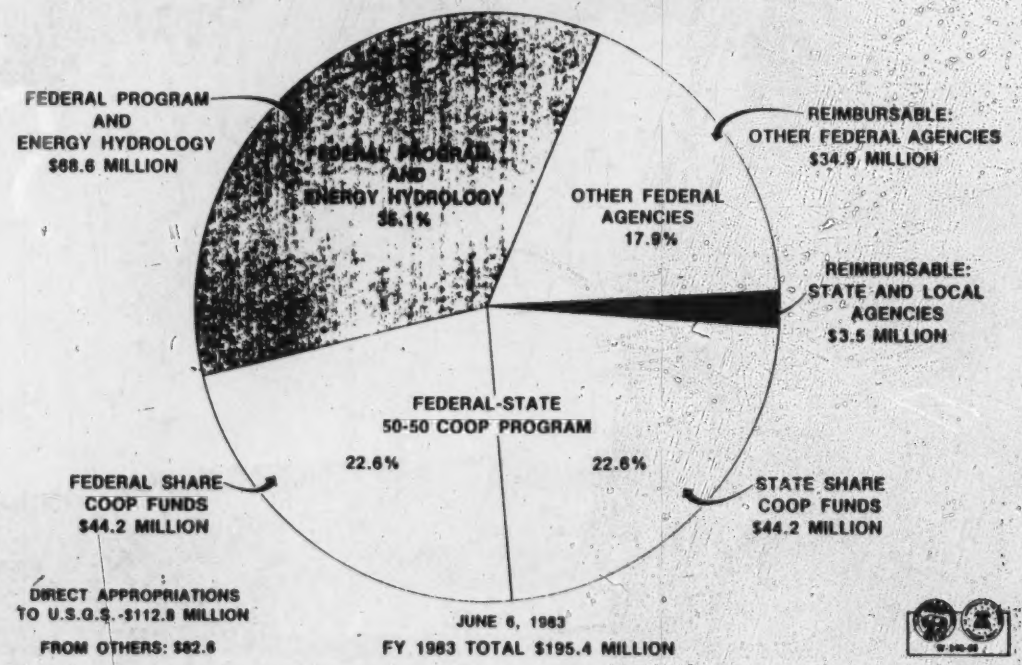

Figure 2.-- Sources of funds for the U.S. Geological Survey's Water Resources Division, 1983 FY.

Program Elements

The Water Resources Division basically conducts three types of work: (1) water research, (2) data collection and dissemination, and (3) problem-oriented, interpretative studies. These basic components are virtually inseparable because of their strong interdependence. For example, theories arising from research are the foundation of data collection and interpretative studies: data collection is a major component of all interpretative studies and most research; and analysis of data often leads to the modification of theory.

The Water Resources Division employs over 4,000 people, of which about 2,000 are professional hydrologists, with formal training in engineering, mathematics, chemistry, biology, and other disciplines. The FY 1983 budget for the Division was about $200 million. Of this total, about $20 million supported research, $80 million supported the collection of basic data, and $100 million funded interpretative studies. The specific topic areas of endeavor in the Division change with time according to the water information needs of the Nation. At present, the Water Resources Division has major programs in the analyses of regional aquifer systems, national water-quality networks, coal and oil-shale hydrology, and water-use information. In addition, the Division has new but growing programs in hazardous-waste hydrology, acid rain, and water-resources assessment. Almost all of the topical programs within WRD contain components of research, data collection, and problem-oriented, interpretative studies.

THE USGS WATER QUALITY PROGRAM

USGS collects a significant part of the Nation's water-quality data. In FY 1983, USGS collected water-quality data at more than 9,000 surface-water measurement sites and from over 8,000 ground-water wells.

Within USGS, water quality comprises a major part of the water-resource program. For example, in FY 1983, more than half of the water projects conducted by the Survey contained a water-quality component. Another way of emphasizing the importance of water-quality studies is that, in FY 1983, water quality investigations amounted to nearly $90 million, or 45 percent of the total funding of approximately $200 million for the Survey's water program.

In FY 1983, USGS estimates that it conducted studies at a total cost of about $7 million in response to the information needs of the Clean Water Act (P.L. 95-217). The studies were supported principally by transfer of funds from other Federal agencies and by the Federal-State Cooperative Program and were initiated mainly in response to two sections of the Act--Section 208, Areawide Waste Treatment Management; and Section 404, Permits for Dredged or Fill Material.

The water-quality program of the USGS consists of three major components: (1) collection of basic data to describe the quality of surface and ground water, (2) research to increase knowledge of the processes which create the

natural quality of water and which control the nature and rate of changes, and, (3) applied interpretive studies to determine the causes of specific observed changes in water quality and to predict the nature and rate of future changes that are likely to occur from human activities.

In describing the USGS water-quality program, I will first describe the research component, covering aspects of both surface and ground waters. Next, I will discuss some of the data collection and applied interpretative studies to define surface-water quality, and I will conclude the testimony by describing a new USGS program for obtaining a national perspective on ground-water contamination.

USGS RESEARCH IN WATER QUALITY

The mission of the USGS water research program is to improve understanding of hydrologic processes as a basis for explaining and, possibly, for predicting the response of hydrologic systems to natural and manmade stresses. Towards this end, the research program is divided into six discipline groups: (1) surface-water hydrology (2) ground-water hydrology (3) water chemistry (4) geochemistry (5) ecology, and (6) geomorphology/sediment transport.

The latter four groups focus directly on the chemical and biological aspects of the Nation's water resources. In FY 1983, of a total research budget of about $20 million, nearly 60 percent was expended in these water-quality areas. Of the senior research staff of 187 persons, 60 percent are in these four research groups. The other two research groups--surface-water hydrology and ground-water hydrology--focus largely on the transport of water and its dissolved constituents. Because dissolved constituents are of water-quality concern, an estimated 50 percent of the research in these two groups actually addresses water-quality issues. Thus, about 80 percent of the total USGS effort in water research is aimed at understanding hydrologic processes which affect water quality.

To illustrate the range of water quality research that USGS conducts, I will briefly describe some of our projects concerning acid rain, hazardous substances, and estuarine quality.

Acid Rain

USGS is conducting research to establish an understanding of the geochemical processes by which acid precipitation affects the quality of both surface and ground water. Surface- and ground-water quality are strongly influenced by reactions with soil and bedrock materials. In general, acid waters tend to decompose geologic materials more quickly than near-neutral waters. To quantify the effect of acid rain on soils and geologic materials, USGS is conducting a comparative study of the weathering of rocks under normal and elevated acidity. Small watersheds on single bedrock types have been selected for investigating interactions between atmospheric deposition,

bedrock, and soils. Geochemical mass balance studies of chemical species in these watersheds are being developed by detailed sampling of input waters (acid deposition) and by following the changes in chemical composition as these waters move through the watersheds. In addition to these field studies, we are conducting laboratory investigations into the leaching of rock samples with waters of differing acidity. These studies are showing both the rates at which various elements are released to the solution, and the fate of these elements in surface and ground water. When completed, the watershed and laboratory studies will aid in predicting the impact of acid precipitation on chemical-water quality, on stream and lake ecology, and on terrestrial plants.

Hazardous Wastes

Past USGS research in hazardous waste hydrology has focused on ground-water contamination. The program has included studies on the movement of chemical-munition contaminated ground water near the Rocky Mountain Arsenal in Colorado; the movement and microbiological alteration of industrial organic substances in ground water following injection through industrial wells near Wilmington, North Carolina, and Pensacola, Florida; the isolation and characterization of TNT in ground water in Nevada; the chemical forms of plutonium in ground water from radioactive waste burial grounds at Maxey Flats, Kentucky; and the character of landfill leachates and gas production at a solid waste disposal site in Delaware. In addition, a USGS researcher recently developed a mathematical model for optimizing the management of multiple sources of ground-water pollution.

In FY 83, we began large research studies at three field sites having a documented history of ground-water contamination dating back a few years to several decades. These sites include an oil spill near Bemidji, Minnesota; chemical contamination from a wood treatment plant near Pensacola, Florida; and contamination of ground water by sewage and trace metals on Cape Cod, Massachusetts. These studies involve teams of scientists examining the physical, chemical and biological processes which affect the movement and fate of the contaminants in diverse ground-water environments.

Research on hazardous wastes in surface water have included studies on the effect of oil shale leachate on blue-green algae; the transport and degradation of organic substances in streams; and the sorption of radionuclides associated with oil-field brines by sediments.

Estuarine Quality

The USGS is presently conducting long-term, interdisciplinary studies of the Potomac and San Francisco Bay estuaries. Teams of scientists have been assembled to study the variability of circulation and mixing of the waters; the seasonal and spatial distribution of the physical, chemical, and

biological properties of water which influence biological productivity; the physical and chemical processes which influence the contamination of clams and other organisms with metals and other pollutants; and the role of estuarine sediments as sources or sinks for nutrients such as nitrogen and phosphorus.

DATA AND APPLIED INTERPRETATIVE PROGRAMS IN SURFACE-WATER QUALITY

Nationwide Monitoring Networks

The USGS operates two nationwide networks of water-measurement sites to monitor surface-water quality--the National Hydrologic Benchmark Network and the National Stream Quality Accounting Network (NASQAN). The locations of stations in both networks are shown in Figure 3.

The Benchmark Network is composed of 52 small drainage basins which encompass a wide variety of natural hydrologic environments. These basins are in a nearly natural state, with little human influence and little likelihood of future development. The Benchmark program is designed to answer the question, "What is the hydrology and water quality in small basins which are in a near-natural state, with little or no change in land use?" Study of these basins may help to explain how much of the variation in water quality and quantity occurring in streams across the Nation is natural and how much is caused by human activity. The program was initiated in the mid-1960's and funding for the network in FY 1983 was $660,000.

The NASQAN network with 504 operating stations, provides a basis for continuously assessing the quality of major U.S. rivers with respect to both natural and man-induced factors. Stations are located to measure outflow from 331 accounting units (subregional drainage basins) which, collectively, encompass nearly the entire land surface of the Nation. The NASQAN network was initiated in FY 1973 with 50 stations and was implemented gradually to reach full operating level in FY 1979. In FY 1983, Federal Program funding for the water quality part of the NASQAN network was approximately $4.4 million. Funding for the measurement of streamflow at NASQAN stations comes from a number of sources, including the Federal Program, the Federal-State Cooperative Program, and other Federal agencies.

Data collected in the Benchmark and NASQAN networks include streamflow, concentrations of major inorganic and trace constituents (including toxic metals), bacterial indicators of pollution, and concentrations of a limited number of radiochemical constituents.

A major purpose of both the Benchmark and NASQAN networks is to detect trends in the concentrations of significant constituents of water quality. Especially difficult in analyzing data from these networks has been the problem of separating human induced changes in water quality from the natural variability in quality that results from the changing seasons and differences between wet and dry years. However, USGS scientists have

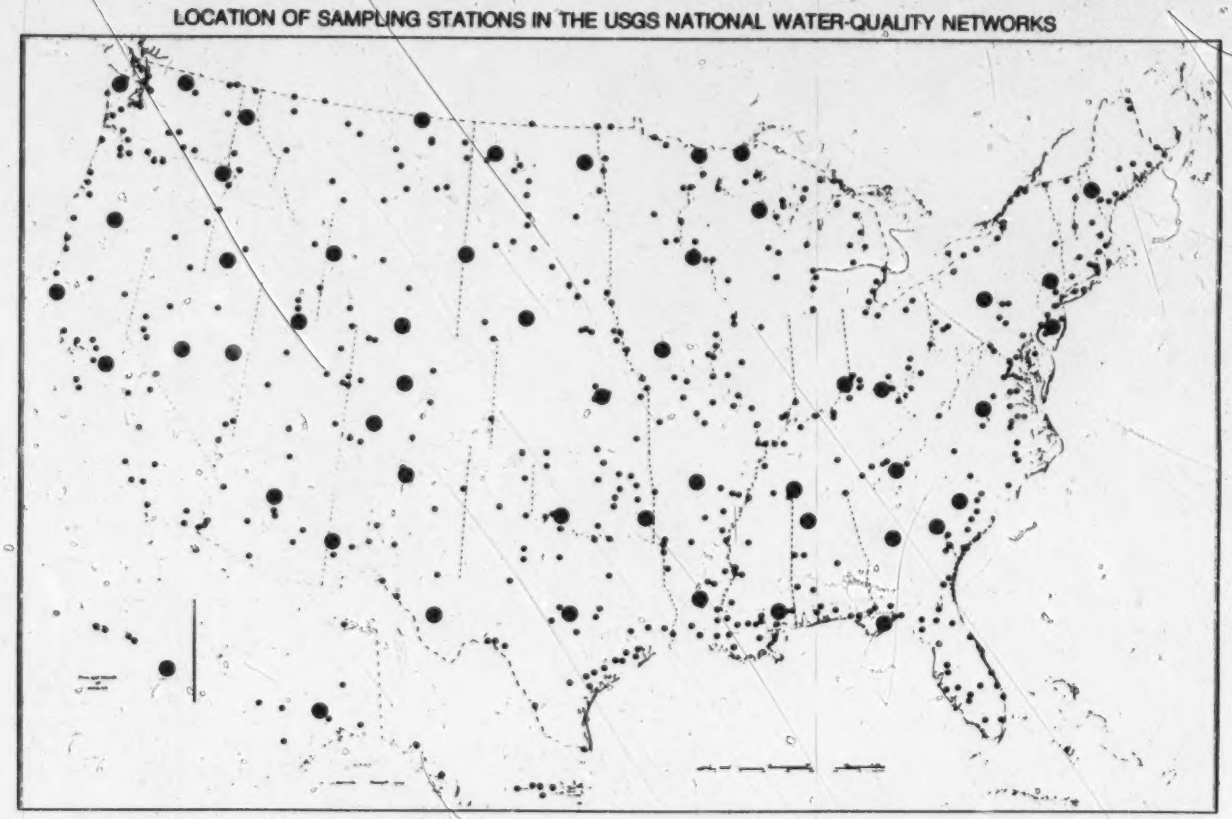

Figure 3.--Locations of stations in the Benchmark Network and the National Stream Quality Accounting Network.

recently developed and reported upon special statistical techniques for detecting time trends in fixed-station water-quality data, and the techniques have proven successful for analyses of the constituents measured at the Benchmark and NASQAN stations.

Investigation of Acid Precipitation Induced Trends at Benchmark Stations

Because we lack long-term, nationwide data on changes in the quality of precipitation, the next best possibility is to detect changes in the quality of sensitive streams and lakes that can be attributed to historic changes in the acidity of precipitation.

Records from the Benchmark network are particularly appropriate for investigating atmospheric influences on water quality during the last decade because consistent sampling and analytical methods have been applied for a 15-year period at each station, and because the basins have been relatively unaffected by land-use change. Moreover, many of the Benchmark streams have a low capacity to buffer acids and would be expected to be sensitive to small changes in acid inputs.

Industrial emissions of sulfur dioxide are a major source of acidity in precipitation. Once emitted, the sulfur dioxide is converted to dilute sulfuric acid and transported in the atmosphere. Thus, one expected result of increases in acid rain would be increases in the sulfate concentrations of streams. In contrast, alkalinity is a measure of the capability of water to neutralize acid, and is, itself, reduced by the neutralization process. Hence, acid inputs would be expected to decrease alkalinity, especially where the initial concentration is low, as is typical in regions devoid of certain rock types, such as limestone and marble.

Figures 4 and 5 show the results of applying the new statistical techniques to detect trends in sulfate and alkalinity data collected over the past 10-15 years at Benchmark stations. An upward-pointing triangle or arrow indicates an upward trend in concentration, a downward-pointing triangle or arrow signifies a downward trend, and a black dot means no detectable trend. The statistical significance of the trends exceeds 80 percent at all sites noted with a triangle or arrow, and exceeds 99 percent at most sites. The numbers in Figure 4 show the percentage change in sulfur dioxide emissions (compiled by a contractor to the Environmental Protection Agency) between 1965 and 1980. States showing increased levels of emissions are shaded.

The stations in Figure 4 show that sulfate concentrations have tended to increase over the last 10-15 years over a broad area of the continental United States, extending from the Southeast to the mountain States and the Northwest. By contrast, stations in the Northeast have tended to show slight declines in sulfate concentrations. The overall geographical pattern is similar to that shown by trends in sulfur emissions to the atmosphere during the same period.

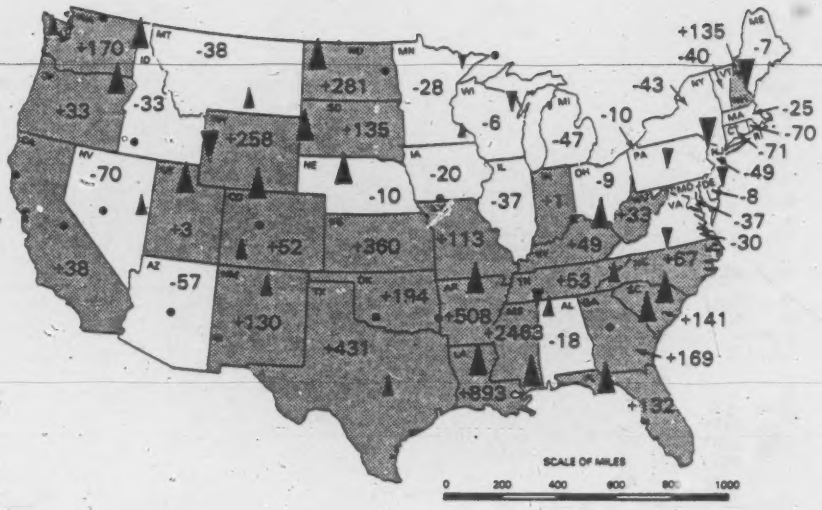

Figure 4.--Trends in flow adjusted sulfate concentrations at Benchmark stations, 1963-68 through 1981 (see text for explanation).

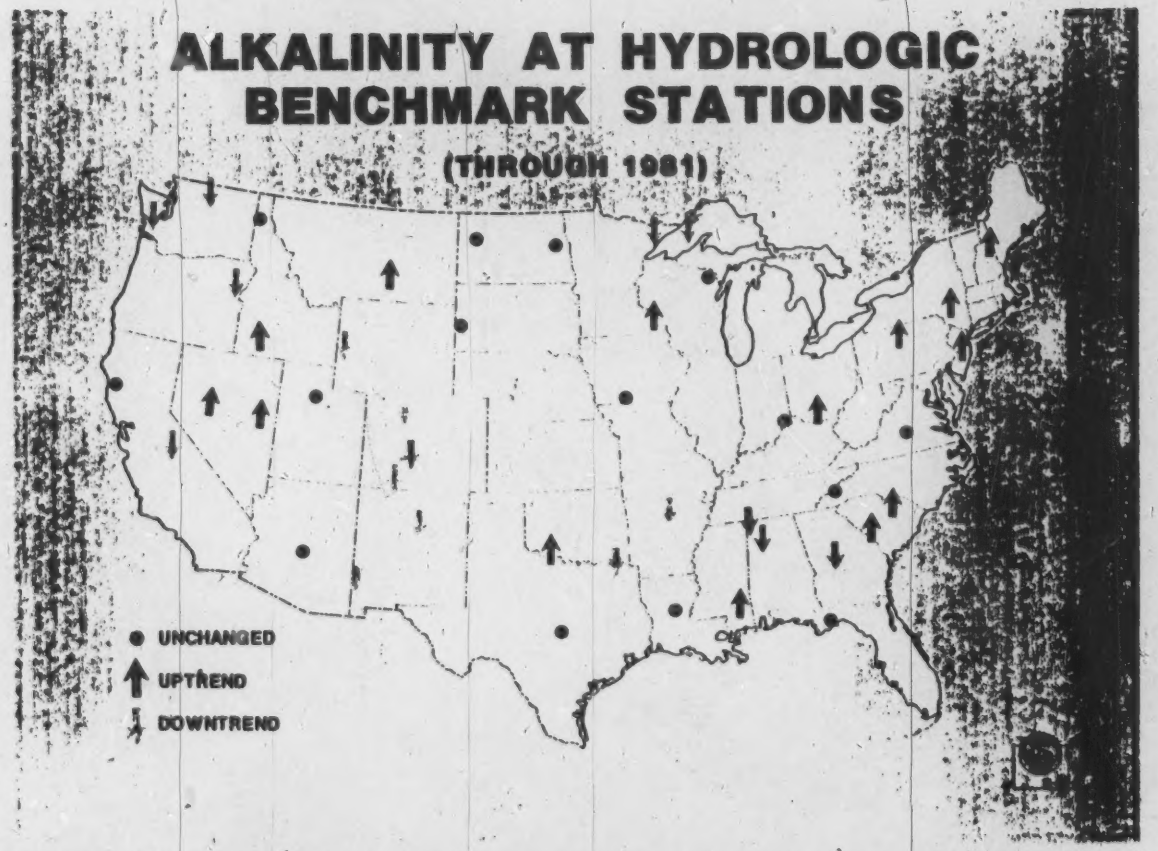

Figure 5.--Trends in flow adjusted alkalinity concentrations at Benchmark stations, 1963-68 through 1981.

Figure 5 shows that downward trends in alkalinity--suggesting increases in acid precipitation--greatly outnumber upward trends within a broad area from the Southeast to the Northwest. In contrast, alkalinity trends at the Benchmark stations in the Northeast are consistently upward, suggesting a decrease in the acidity of precipitation.

The determined geographical distribution of trends in sulfate and alkalinity are consistent with the reported sulfur dioxide emissions. In concert, the results suggest a decline in the acidity of precipitation in the Northeastern United States and an increase in acidity in most other regions. The results also indicate that the effects of relatively small changes in atmospheric emissions are observable as changes in stream quality--a point that, recently, has been the focus of considerable national debate.

The next step in our acid rain work is to try to quantify the relationship between sulfur emissions and stream chemistry. Knowing the quantitative relationship between the two types of historical data would help to predict what effects any future reductions in emissions might have on the receiving waters in sensitive regions of the country.

Trends at NASQAN Stations

Most NASQAN stations are located on large rivers to measure the quantity and quality of water moving from one major drainage basin to another. NASQAN data thus provide a regional and national picture of water quality in the major rivers of the country. About 55 water-quality constituents are measured for each NASQAN station, and, at present, sufficient lengths of record exist to support the testing of trends for 35 constituents. To briefly illustrate our work, I will describe recent results on trend analyses of chromium, fecal streptococci, and dissolved oxygen.

Figure 6 shows our trend results for chromium. Since 1975, chromium concentrations have undergone an upward trend at 30 stations. Most of these 30 stations are in the eastern half of the country, especially in the Ohio and upper Mississippi River basins, and, specifically, in some of the most heavily industralized areas of the Nation. We are now compiling data on chromium discharges to water for comparison to the observed trends, and possibly for linking these trends to the major industrial uses of chromium.

Figure 7 shows the results of trend analyses on fecal streptococci--a group of bacteria which are indigenous only to the digestive tract of humans and other warmblooded animals. Possible large sources of fecal streptococci to the environment include raw sewage, sewage treatment plant effluents, combined sewer overflows, and livestock feedlots. Significant trends are evident at 51 of the 261 NASQAN stations having a sufficient record length for analyses. All 51 trends are downward. The downtrends are so widespread that we initially thought they might represent a change in the method of analyzing for fecal streptococci. However, investigation of the history of

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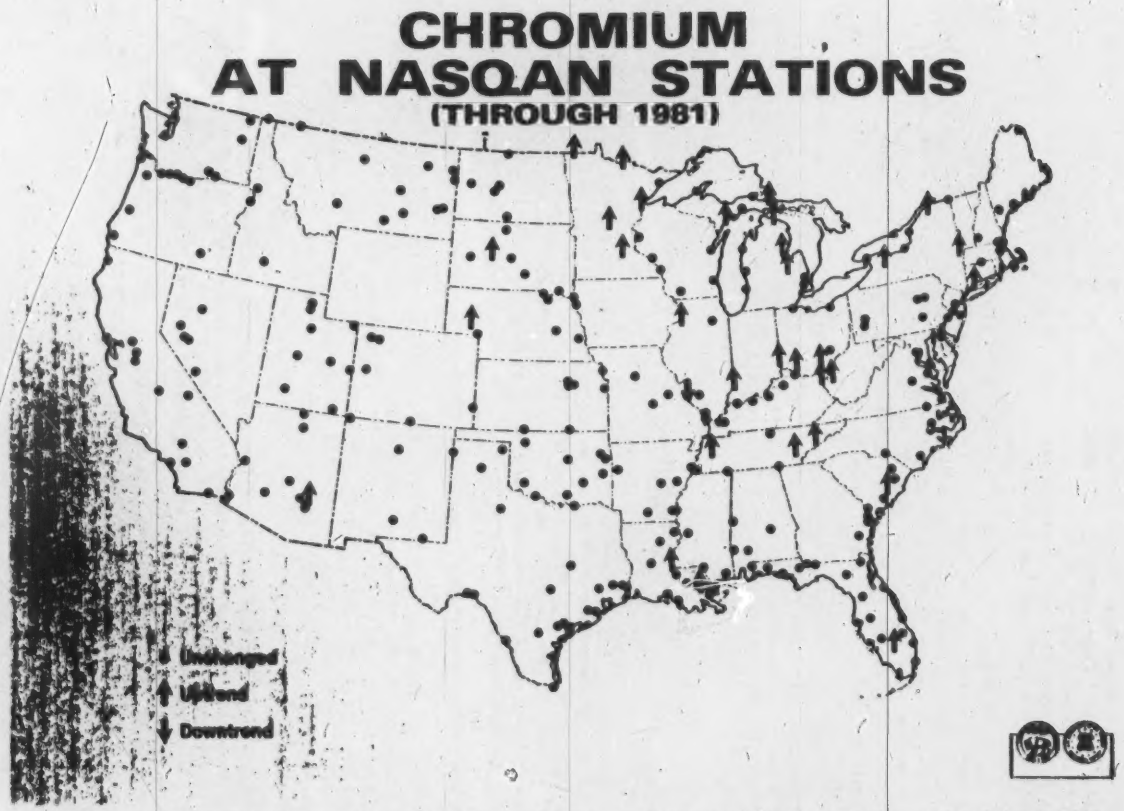

Figure 6.--Trends in flow adjusted total chromium concentrations at NASQAN stations, 1975 through 1981.

Figure 7.--Trends in flow adjusted fecal streptococci levels at NASQAN stations, 1974 through 1981.

fecal streptococci analyses by USGS indicates the data are sound and the trends, therefore, are real.

We first thought that the downtrends might reflect increases in the treatment of combined-sewer overflows. However, data from the Environmental Protection Agency's sewer grant "Needs Survey" indicate that significant improvements in the combined sewer overflow problem have yet to occur. In some urban areas, the downtrends possibly may reflect the upgrading of wastewater treatment plants which accelerated in the mid-1970's. At present we are testing this hypothesis with data from the Needs Survey.

Probably the most important factor in the observed downtrends of fecal streptococci has been a cleanup of agricultural runoff, especially feedlot runoff. During the mid- to late 1970's, EPA reduced the minimum size of animal holding operations which are required to meet pollution control regulations. As a result, there was a marked increase in the number of operations which now must control their effluents. Also, during the same period, dramatic changes took place in livestock populations as a result of changing market conditions. Most notable was the widespread reduction in beef cattle. Between 1974-1978, there was a net decrease of more than six million beef cows in the United States.

Trends in dissolved oxygen (DO) at NASQAN stations (Figure 8) show a markedly different pattern from fecal streptococci. Forty-five of 276 stations having sufficient data show a trend for the period 1974 through 1981. Of this total, 24 stations show a downward trend in DO deficit--an indication of decreased pollution--whereas 21 stations show an upward trend in the computed deficit, signifying an increase in oxygen-consuming wastes. As I will explain in the next section, NASQAN stations are located to fulfill specific goals other than determining compliance with water-quality criteria or the effectiveness of pollution-control programs. Thus, NASQAN stations are not ideally located to measure the effectiveness of Clean Water Act expenditures. Nevertheless, the results in Figure 8 suggest that DO has remained fairly constant in the major rivers of the country during the 1970's, at a time when both population and industrial production increased. This finding suggests that the Clean Water Act has had a positive effect on the quality of major rivers.

What Purposes Do The Benchmark and NASQAN Networks Fulfill?

I will end this brief discussion of the USGS Benchmark and NASQAN networks by reviewing the general purposes which the networks fulfill.

The following list includes most of the broad purposes for collecting water-quality data:

- Define near-natural baseline conditions.
- Define existing water-quality conditions.
- Detect trends and, therefore, possible improvements and emerging problems.

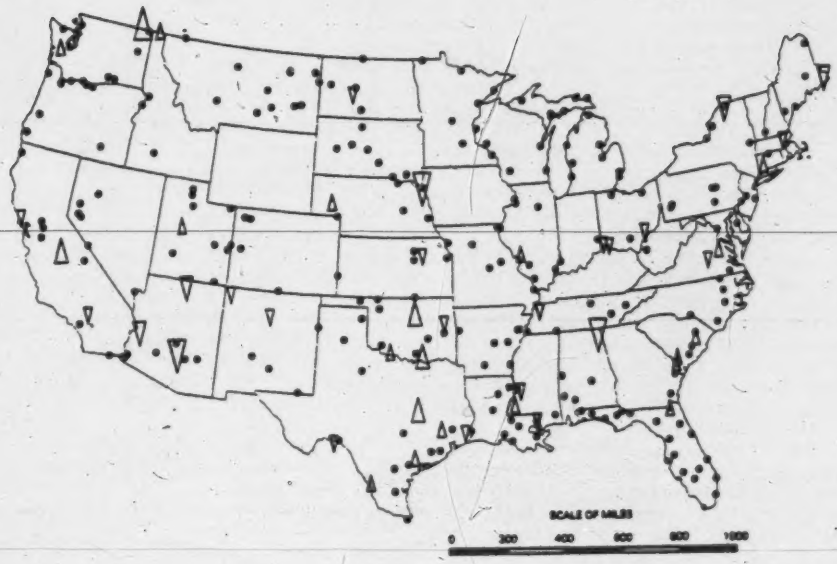

Figure 8.--Trends in flow adjusted dissolved-oxygen deficits at NASQAN stations, 1974-1981. Size of triangle corresponds to significance level of the trend test: all stations showing a trend have a significance level of at least 80 percent.

- o Compute the transported loads of constituents of concern.
- o Determine suitability for major uses.
- o Determine compliance with criteria and standards.
- o Determine effectiveness of pollution-control programs.

As previously noted, Benchmark stations are on headwater streams, in natural or near-natural basins; and most NASQAN stations are on major rivers, at the downstream ends of large drainage basins. Therefore, the USGS Federal Water-Quality Networks do not include a complete array of stations covering all stream orders, stream sizes, and homogeneous units of land use. Nevertheless, in combination, the Benchmark and NASQAN networks provide consistent data bases suitable for: (1) defining near-natural baselines, (2) defining existing water-quality conditions at sites which integrate flow in large river basins, (3) detecting trends, and (4) computing transported loads of important constituents such as suspended sediment, nitrogen, phosphorus, carbon, and dissolved solids. By fully or partially fulfilling these purposes, the networks also provide some information on the suitability of water for major uses. However, the design of the networks limits their usefulness for determining compliance with criteria and standards, and for directly ascertaining the effectiveness of pollution-control programs.

Because of its non-regulatory mission, USGS has never specifically designed water-quality networks or programs for meeting these two regulatory purposes. However, the programs which I will now describe are designed to elucidate water-quality processes and, therefore, are highly pertinent for understanding the causes and effects of pollution.

The Federal River Quality Assessment Program

In 1971, the Geological Survey's Advisory Committee on Water Data for Public Use recommended that the USGS develop and apply an approach for conducting intensive, cause-effect-interpretive studies of river-quality problems. The USGS responded by developing an approach which recognized that: (1) each river is physically and biologically unique, with unique water-quality problems and solutions, (2) intensive, applied studies can be conducted to provide a scientific basis for evaluating the effects of alternative water-resource management plans on river quality, and (3) if scientific results are to be used in decisionmaking, they must be effectively communicated to resource managers and to the public.

The first of a series of pilot, federally funded river-quality assessments (RQA's) was started in 1973 in the Willamette River Basin, Oregon. Subsequent RQA's have been completed on the Yampa River Basin in Colorado-Wyoming, the Chattahoochie River Basin in Georgia, the Schuylkill River Basin in Pennsylvania, the Apalachicola River in Florida, and the Potomac Estuary in Maryland and the District of Columbia. Each of these demonstration projects

was selected to address a markedly different hydrologic setting and a different set of problems in order to develop and test methods suitable for many unique situations.

The union of intensive interpretive studies to understand river-quality problems with communication of results to resource managers and the public has yielded gratifying returns.

In the case of the Willamette River, the maintenance of high-dissolved oxygen concentrations during summer low-flow periods was the the critical problem. At the time of the study, the dissolved oxygen concentrations in the river had been greatly improved through a highly successful waste-treatment program under which all point sources directly entering the Willamette received secondary treatment by 1972. However, dissolved oxygen levels in the river were still violating State standards in some locations during the low-flow summer season. The State was therefore faced with further costly upgrading of secondary treatment at municipal waste-water treatment plants, and, possibly, with the need for very expensive advanced waste treatment at some plants.

The Willamette RQA found that: (1) the major source of oxygen-demanding materials entering the river was ammonia from one industry, (2) further improvement of secondary treatment at municipal plants would have virtually no effect on dissolved oxygen levels, (3) flow augmentation would be needed to assure that dissolved oxygen standards would be met in the future, and (4) advanced waste treatment to decrease nitrogen and phosphorus concentrations in the river was not necessary to prevent algae blooms.

In December 1976, a Comptroller General's report to Congress entitled "Better Data Collection and Planning is Needed to Justify Advanced Waste Treatment Construction" stated that the Willamette RQA "may save several millions of dollars in Federal and State construction funding." In 1980, the USGS determined what use the State of Oregon had made of the RQA results. We found that the State had implemented all of the recommendations (Figure 9), and that predicted increases in dissolved oxygen concentrations had been achieved in the Willamette River.

Intensive River-Quality Assessments in the Federal-State Cooperative Program

Shortly before the close of the pilot RQA Program in FY 1981, USGS judged that the analytical approaches and methodologies for conducting RQA's were sufficiently well developed that future RQA's could be conducted in its Federal-State Cooperative Program. Following is a sample of river-quality assessments in progress during FY's 1983-1984:

- "Water-Quality Assessment of the Souris River within North Dakota"--to assess cause-and-effect relations between domestic sewage discharges and river-water quality for a reach of the Souris River just upstream from important marsh habitats which are managed for waterfowl production.

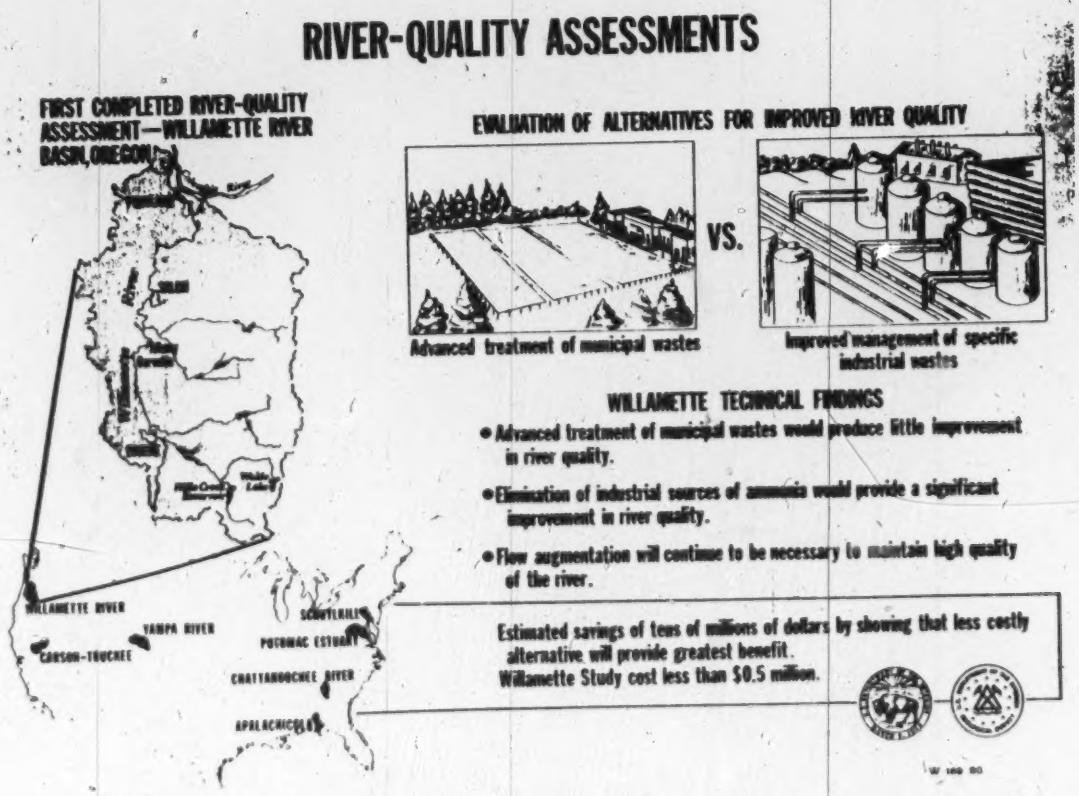

Figure 9.--Technical findings of the Willamette River Quality Assessment.

- "Jordan River Quality Study, Utah"--to study and evaluate the causes and extent of key water-quality problems in a 40 mile reach of the river near Salt Lake City. Key problems being investigated, as identified in cooperation with local officials, are dissolved-oxygen depletion, pathogens, turbidity, and toxic substances.

- "Water Quality Assessment of the White River, Indiana"--to determine the effect of new advanced treatment of municipal wastewater on dissolved oxygen in the White River downstream from Indianapolis.

- "Assessment of Nonpoint Sources of Pollutants for the Conestoga River, Pennsylvania"--to evaluate, over a ten-year period, the effects on water quality of Best Management Practices implemented in agricultural areas. Key pollutants being studied in both the river and adjacent ground waters include nitrate and pesticides.

A NEW PROGRAM FOR OBTAINING A NATIONAL PERSPECTIVE ON GROUND-WATER QUALITY

The Historic Approach

Unlike the NASQAN Program, wherein surface waters can be relatively easily monitored to provide information about regional changes in water quality, a national network for ground-water monitoring would be a costly and ineffective method of evaluating the status of ground-water contamination. Ground-water velocities are usually very small, and pollution of ground water tends to occur in slowly developing pockets around point sources of contamination or in shallow, slowly expanding zones beneath areas of nonpoint pollution.

Because of the nature of the emplacement process, the actual volumes of contaminated ground water tend to remain small for long periods of time in comparison to the total volume of ground water circulating through the earth. Thus, a monitoring strategy in which samples are collected from observation wells chosen for areal coverage would fail to detect most developing contamination problems until a great deal of damage had been done. Moreover, a simple monitoring effort, without prior analysis and interpretation, is virtually guaranteed to fail, if for no other reason than the directions of flow away from a contaminant source must be understood before an efficient monitoring program can be designed.

The alternative strategy to monitoring used by the USGS has been to study areas where point and nonpoint sources of pollution are known to be affecting ground-water quality. USGS has historically taken this approach in virtually all of its work related to ground-water contamination. The approach has yielded highly useful results for specific contaminated sites and, overall, has provided considerable knowledge of the hydrologic and geochemical processes which affect the movement of water and its constituents in different hydrogeologic settings.

However, in the late 1970's, the USGS evaluated the existing state of knowledge on ground-water quality and determined that the basic information was insufficient to deal with the emerging national problem of ground-water contamination. The Survey concluded that additional data, research, and applied studies were needed to better understand the increasingly complex effects of land use and waste disposal on ground-water quality.

The Toxic Waste/Ground Water Contamination Program

In response to the evaluation, the USGS created the Toxic Waste/Ground-Water Contamination Program, which, in FY 1984, is funded at $8.6 million.

The objective of the Toxic Waste/Ground Water Contamination Program is to provide the earth-science information needed by resource managers to mitigate the effects of waste disposal, storage, and spills on ground-water systems, and to improve future waste-disposal practices. To fulfill this purpose, the USGS is:

- Conducting research into the physical, chemical, and biological principles governing ground-water contamination;
- Conducting regional and national appraisals of ground-water quality--with emphasis on trace organic substances and trace metals;
- Assisting Federal and State agencies in the development of guidelines and standards for managing the disposal of hazardous wastes. This assistance will be provided as requested and will consist of advice in the technical aspects of waste management.

I want to describe the regional and national appraisals of ground-water quality (the second element) in some detail because recent USGS studies have identified a pervasive lack of data on the occurrence and distribution of organic substances and trace metals in ground waters. Thus, no definition of a national baseline for organics and trace metals is presently available, nor is there any way to make reasonable estimates of the extent of or trends in ground-water contamination from these substances. Consequently, few answers are available to the questions of "How much or how badly are our ground waters contaminated?" and "Are they getting better or deteriorating?"

Over the past year, USGS put its best ground-water scientists to the task of developing an approach for obtaining national and regional perspectives on ground-water quality, with emphasis on organic substances and trace metals. Rather than the monitoring of a national array of wells at fixed time periods, the developed approach is based on the intensive appraisal of individual areas

that are representative of larger regions in terms of climate, hydrogeology, and human activities. The major aspects of the new approach are:

- Representative areas of investigation will be selected based on climate, physiography, geohydrology, land use, and population. Typically, these areas will range from tens to hundreds of square miles, be of relatively uniform, well-defined hydrogeologic character, and contain one or more subareas where a single land use predominates.

- Design of the sampling network for each study area will be based on the hydrogeologic setting, ground-water flow conditions, and land use. Most samples will be collected from shallow aquifers--the systems most susceptible to surface sources of contamination.

- Interpretations will be made concerning the current state of the shallow aquifer systems underlying the different land uses. In conjunction with ground-water models, interpretations will be made of sources of organic and trace metal contaminants, the surface and subsurface avenues of contaminant migration, and the factors affecting contaminant concentrations.

- Additional, periodic sampling will be planned at intervals ranging from one to a few years, depending on the system, to help establish trends and a long-term data base for interpretation in future decades.

- As studies end, new ones will begin.

Over a period of years, information on ground-water conditions on enough specific study areas will become available to extrapolate the information to the regional level. At some point, yet unknown, the regional level information will be adequate to permit extrapolation to the national level. At this point, USGS will answer the questions of "How badly are our ground waters contaminated?" and "Is the contamination problem getting better or worse?"

COMMUNICATION OF INFORMATION AND FINDINGS

The Geological Survey has several mechanisms for conveying the results of its water-resources programs to elected officials, State and Federal resource management agencies, university and private researchers, and the general public. First, the Survey has its own formal publication program which includes Water Supply Papers, Professional Papers, Circulars, and Hydrologic Atlases. In addition, Survey scientists publish articles in various professional journals. Second, the Federal/State Cooperative Program provides an excellent mechanism for the transfer of study results. Presently, the Survey has over 800 water-resource cooperators at the State, regional, and local level; each of these cooperating agencies is regularly in contact with our State offices concerning ongoing projects. Third, on behalf of the Department of the Interior, the Survey officially coordinates the water-data acquisition efforts of all Federal agencies. Since 1964, under the authority of OMB Circular A-67, the Office of Water Data Coordination of USGS has coordinated this vital Federal activity through two advisory committees--the Interagency Advisory Committee on Water Data (Federal) and the Advisory Committee on Water Data for Public Use (non-Federal). The membership of each committee provides a pipeline for bringing results of programs to all sectors of the field of water resources. Lastly, the Survey frequently has the opportunity to brief Congressional committees on its programs. We welcome all such opportunities and thank you for your attention today.

Mr. ROE. Please proceed.

TESTIMONY OF PHILIP COHEN, CHIEF HYDROLOGIST, U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR.

Mr. COHEN. Thank you, Mr. Chairman.

I am pleased to have the opportunity to describe this morning some of the highlights of the U.S. Geological Survey's water-quality programs. We have provided a detailed statement of my testimony for the record, and with your concurrence, I would like to briefly summarize that statement.

The USGS has been studying the water resources of the Nation for over 100 years. The Survey has neither regulatory nor development authority; instead, the water-related mission of the bureau is to provide the information and understanding by other agencies to develop, manage, and regulate the Nation's water resources.

The Survey's program in water quality includes data collection, research, and problem-oriented interpretive studies. In fiscal year 1983, water-quality activities accounted for nearly $100 million of the total funding of about $200 million for the Survey's water programs.

In this statement, I will briefly describe some aspects of the USGS's water-quality programs, emphasizing in particular recent findings on acid rain and quality of the major rivers of the Nation.

The USGS has become increasingly involved in the water-quality activities for the past 20 years or so, and in particular during the past decade, we have initiated new or accelerated efforts in acid rain and toxic waste ground-water contamination through research on physical, chemical, and biological processes, interpretive studies, and data collected in two federally funded water-quality monitoring programs, our benchmark program and our so-called Nasquan program, the national stream quality accounting network.

The benchmark network is composed of 52 small drainage basins which encompass a wide variety of natural hydrologic environments throughout the Nation. These basins are in nearly natural state, with little human influence and little likelihood of future development. Thus, this network is designed to answer such questions as: What is the hydrology and water quality in small basins which are in near-natural state, with little or no within-basin changes in land use? What long-term trends can be detected? And what are the causes of such trends?

For example, based on data from the benchmark network, we have found that trends in sulfate and alkalinity in small streams are consistent with trends in sulfur dioxide emissions in the United States for the period 1965 through 1980. Most interestingly, in the Northeast, sulfur emissions have decreased, and the computer trends in stream data are consistent with slightly decreased concentrations of sulfuric acid in precipitation and a resulting slight recovery of stream-buffering capacity. In other words, Mr. Chairman, we have seen slight improvements in the acidity problem in the Northeast of the United States. In contrast, however, sulfur emissions have increased in the Western Central and Southeastern parts of the country, and we note slight increases in the sulfate content of the receiving waters and slight decreases in alkalinity.

In contrast to the benchmark stations, most USGS Nasquan stations are located on large rivers to measure the quantity and quality of water moving from one major drainage basin to another. In this way, we account for measuring approximately 90 percent of the streamflow of the Nation. Nasquan data thus provide a regional and national picture of water-quality of the major rivers of the country. About 55 water-quality constituents are measured at each station. At present, we have data to detect trends in about 35 constituents.

To briefly illustrate our work with Nasquan data, I would like to describe some results involving fecal streptococci and dissolved oxygen.

Fecal streptococci is a group of bacteria which are indigenous only to the digestive tracts of humans and other warmblooded animals. Possible large sources of these bacteria include raw sewage, sewage treatment plant effluents, combined sewer outflows, and livestock feedlots. In a recent analysis, we have found significant trends in fecal streptococci at 51 of 260 stations examined. Most importantly, all 51 trends were downward. Probably the most important factor of the observed downward trends has been a cleanup of agricultural runoff, especially feedlot runoff. During the mid- to late-1970's, EPA reduced the minimum size of animal-holding operations which is required to meet pollution-control regulations. As a result, there was a marked increase in the number of operations which now must control their effluent. Also during the same period, there was a significant decrease in livestock populations, as a result of changing market conditions.

Trends in dissolved oxygen at Nasquan stations show a markedly different pattern from fecal streptococci. In a recent study, 45 of 276 stations having sufficient data showed a trend for the period 1974 through 1981. Approximately 50 percent of these stations showed increasing dissolved oxygen trends, and approximately 50 percent showed decreasing dissolved oxygen trends. These results suggest that dissolved oxygen appears to have remained fairly constant in major areas of the country during the 1970's at a time when both population and industrial production increased. These findings, in turn, suggest that the Clean Water Act has had a positive effect on the quality of the Nation's major rivers.

With regard to ground-water quality, an issue that has been receiving almost explosive attention in the past 5 years or so, in the late 1970's, the Survey developed a toxic waste ground-water contamination program, which is now funded at a level of about $8.6 million. The objective of this program is to provide some of the earth science information needed by resource managers to mitigate the effects of waste disposal, storage, and spills on ground-water systems and to improve future waste-disposal practices.

This year, we began new research studies at three field sites as a result of this program, having documented histories of ground-water contamination dating back a few years to several decades. These include studies of an oilspill near Bemidji, Minn.; chemical contamination from wood-treatment products at Pensacola, Fla.; and contamination of ground-water by sewage and trace metals on Cape Cod, Mass.

In addition to these research efforts, we are studying the processes associated with ground-water contamination on a regional and national scale. The objective of this element of the program is to assess the quality of the Nation's ground water, emphasizing organic contaminants and trace metals. This would be done by intensive studies of individual areas that are representative of larger regions in terms of climate, ground-water hydrology, and human events.

Finally, the third element of our toxic-waste ground-water contamination program involves assistance to State agencies in the development of guidelines for managing hazardous waste disposal. It includes determining the information needs of States for proper siting of hazardous waste disposal facilities; identifying specific states for coordinated studies; and conveying developed information to State officials.

That concludes the summary of my formal statement, Mr. Chairman. I would be glad to respond to questions.

Mr. ROE. We want to thank the gentleman for his testimony. Would you give us a little of your observations of any work you are doing on acid rain? I note you spoke to that in your formal testimony.

Mr. COHEN. The USGS is one of 14 agencies participating in the interagency task force on acid rain. In that context, we have the lead in the development and managment of a national trends network. When the network is completed, which will be at the end of this fiscal year, we will be managing a network of 150-some-odd precipitation stations, primarily for water chemistry.

Additionally, we are doing research on methods and processes associated with the movement of acidified water through the hydrologic cycle. As I alluded to in my testimony, we are now intensively evaluating long-term data—data collected at long-term networks, especially the Nasquan network. That data has recently been published in a number of articles; it has been referred to by the National Academy of Sciences, among other. Again, as I indicated in my testimony, it demonstrates some rather interesting and, we think, some rather important results—namely, that during the past decade or so, there seems to be a slight improvement in the acidification of the Nation's lakes and streams in the Northeastern part of the United States, and this seems to correlate well with decreases in emissions as a result, in part, of activities of the Federal Government, and State, and local governments. So this seems to provide some encouragement to the Nation that we can, in fact, define the problem and begin to manage it.

Mr. ROE. Are there any questions of the gentleman?

The gentleman from Nebraska.

Mr. DAUB. Thank you, Mr. Chairman.

Mr. Cohen, what is the relationship, if it can be briefly described, between USGS and EPA?

Mr. COHEN. We have been working closely as sister agencies with EPA since the EPA was established. We have a host of formal and informal relationships, including the coparticipation in the interagency task force on acid rain. We have major water quality laboratory facilities, as does the EPA and we participate in joint quality-control procedures to assure that both laboratories are using

consistent methodology. We do a great deal of work for the Environmental Protection Agency in support of the Clean Water Act. We have conducted and continue to conduct investigations, for example, in the so-called 208 studies, which involve nonpoint sources of pollution. We have conducted about a dozen or so studies funded by the Environmental Impact Agency and their national urban runoff program.

So we have both formal and informal relations with the Environmental Protection Agency and their national urban runoff program.

So we have both formal and informal relations with the Environmental Protection Agency and their national urban runoff program.

So we have both formal and informal relations with the Environmental Protection Agency in all aspects of scientific hydrology.

Mr. DAUB. To reiterate, if I missed it, which are formal?

Mr. COHEN. By "formal," I am referring to exchange of documents and funding to conduct various projects. They include those that I have just mentioned. Informal relationships involve coordinating committees by which we consider on a quarterly basis, and more frequently, issues of common concern, development of methodology, the state of the science, and so on.

Mr. DAUB. You are familiar with the Comptroller General Reports?

Mr. COHEN. Some of them, sir.

Mr. DAUB. There were some interesting observations, at least, on the summary pages. In April of 1981, the General Accounting Office Report was highly critical of water quality monitoring techniques being used to assess the quality of our rivers and streams.

How would you evaluate current water quality monitoring efforts?

Mr. COHEN. There are a whole host of water quality efforts, Mr. Congressman, including the two networks I mentioned that we operate—the NASQAN and the Benchmark Network. Additionally, we conduct about 1,000 projects per year in cooperation with State and local agencies. Roughly 50 percent of those are addressing water quality. It is debatable as to whether one can define such activities as water quality monitoring, but they contribute to our understanding and knowledge of the chemistry of the Nation's waters and changes therein.

Mr. DAUB. What is your reaction to the summary that—and I quote—"Water quality is far too complex to be monitored by these networks. Small samples, generally taken monthly, cannot account for water quality at individual sites, and cannot accurately represent other locations on the same river. Nationwide reports based on data from networks are not reliable." And it finishes: "Special studies of individual rivers or river segments would yield more scientifically sound and useful information on water quality. The Environmental Protection Agency and the Geological Survey should stop using their networks and shift their resources and attention to a program of well-managed special studies."

Mr. COHEN. We provided much information, as you might imagine, Mr. Daub, to the GAO, from which they based those conclusions. That work was completed, I believe, toward the end of fiscal

year 1980. We took very strong exception to that report for the following reasons. It has been our experience that a mix of network-type monitoring, such as the two that I have described and others that are now ongoing, and intensive river quality assessments of the type advocated by the General Accounting Office are in the best interest of the United States.

As a matter of fact, we pioneered, if I might say, the development and application of the methodology advocated by GAO; namely, intensive river quality assessments. We have conducted such assessments, published the results thereof, and concluded that they are extremely valuable and needed as part of the nation's monitoring efforts.

Mr. DAUB. I am not being critical at all, but rather am asking maybe in a way for your opinion, so the record is more balanced than what many Members of Congress may read; and secondly, I am just trying to figure out if you have an opinion about how we might be doing what we are doing better than we are right now.

Mr. COHEN. Well, short of saying more of the kinds of things we are doing, we think—and again, in response to your earlier question, I understood you were not being critical—we truly think that a mix of fixed-monitoring networks and intensive river quality assessments are, in fact, in the best interest of the Nation.

We have some serious reservations, however, about the level of work ongoing and the level of work required. Clearly, additional work and additional information over and above that which we have described would be useful to this committee and others who need to make decisions. The critical question, however, is the pace at which we go about doing this additional work. As a result of our activities—and again, I know I read quickly—we are seeing some slight and subtle trends, and these slight and subtle trends are the only clues we have as to the effects of major programs that have been in place over the last decade. We think continued, very slow, very deliberate, perhaps modestly expanding efforts of this type throughout the scientific community, both within the Federal Government and in the private sector and at the State and local levels, of the type that is now ongoing, are appropriate. We are rather frustrated that we cannot come before this Committee and tell you that these are the results of the construction activities or water pollution activities that have been ongoing for the past 10 years; here are the scientific data; this is what we have seen.

GAO points out correctly that what we see is rather subtle and is subject to scientific debate and criticism, and this debate is ongoing right now. We are participating in the debate, along with our sister agencies and others, from a theoretical point of view, and we are beginning to contribute bits of data, bits of information in published form—open to all—to begin to critique what we are doing and what the entire water community is doing.

Mr. DAUB. Thank you very much. I appreciate your testimony. I found it interesting and helpful to me. And I would like personally to conclude by asking you about a subject of most special interest to me, and that is, nonpoint source pollution, because of my farm community, and try to develop that a little better in the record. You have a summary of what you have done so far on that issue—

you mentioned it a moment ago—and I would appreciate it, and I am sure the committee would, as well.

Thank you, Mr. Chairman.

[The following was received from Mr. Cohen, U.S. Geological Survey:]

INFORMATION COLLECTED BY THE U.S. GEOLOGICAL SURVEY RELATED TO NONPOINT SOURCES OF POLLUTION

Although USGS is not a regulatory agency and has no direct responsibility for administering or enforcing any Federal regulations designed to control contamination of water resources by nonpoint sources of pollution, WRD collects a large amount of data and information related to the identification and management of nonpoint sources through its various programs including the Federal/State Cooperative Program, agreements with other Federal agencies including the U.S. Environmental Protection Agency (EPA), and the Federal program of water quality monitoring and research.

Programs conducted by USGS often provide the framework for water resources managers to determine the best courses of action to control nonpoint sources of pollution. In the last 10 years, USGS programs which have contributed most to the description and assessment of nonpoint pollution include Federal/State Cooperative Program studies stimulated by the requirements of Section 208 of the Federal Water Pollution Control Act Amendments (PL 92-500), the National Urban Runoff Program (NURP) operated by EPA consisting of 23 studies of which USGS participated in 11, additional urban runoff studies not part of NURP amounting to 13, the Coal Hydrology Program operated by USGS in coal-producing States, numerous studies of acid-mine drainage pollution funded largely through the USGS Federal/State Cooperative Program, the River Quality Assessment Program (RQA) and subsequent Federal/State Cooperative Program studies patterned after the Federal demonstration studies, and the ongoing monitoring of water quality in major rivers and relatively-pristine streams conducted through the National Stream Quality Accounting Network (NASQAN) and the Hydrologic Bench-Mark Program (HBM), both of which are federally funded.

The estimated total expenditures since fiscal year 1972 for studies related to nonpoint sources of pollution, exclusive of the Federal water quality monitoring program (NASQAN) and HBM), are $193M. These expenditures funded studies of acid mine drainage, irrigation return flows, urban runoff, pollution from agricultural wastes of various kinds, and other nonpoint pollution effects. Descriptions of these programs follow.

THE FEDERAL/STATE COOPERATIVE PROGRAM

The Federal-State Cooperative Program is the cornerstone of data collection and water-resources appraisals at the local, State, and regional level. This program is a partnership for water-resources investigations between USGS and State and local agencies. The principal objectives are: (1) to collect, on a systematic basis, data needed for the continuing evaluation of the quantity, quality, and use of the Nation's water resources, and (2) to conduct analytical and interpretive appraisals describing the availability and the physical, chemical, and biological characteristics of surface and ground water.

Under the Federal/State Cooperative Program, WRD provided assistance to many States in formulation of area wide waste treatment management plans as required under Section 208 of PL 92-500.

COAL HYDROLOGY PROGRAM

Projects within this program are designed to provide the water data and hydrologic information needed to evaluate the effects of mining and reclamation on streams and aquifers to aid in the leasing of Federal lands and permitting of coal mining nationwide. One of the accomplishments of this program is the development of prediction basin models to simulate the effects of various mining and land-use changes in the hydrologic system in several States. Since fiscal year 1972, estimated expenditures in 367 coal hydrology studies, including the Federal and Federal/State Cooperative Program, are $112M.

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NATIONAL URBAN RUNOFF PROGRAM

This USGS/EPA coordinated program had the general objective to provide local managers with urban-hydrology data and methods of analysis suitable to support management decisions. More specifically, the objectives were:

1. To establish a consistent and accessible data base for typical urban watersheds in each study area. Data consist of rainfall, runoff, water quality, and other environmental factors.
2. To determine the magnitude and frequency of storm runoff loads of water-quality constituents from typical urban watersheds.
3. To develop methods for estimating storm and annual loads of water-quality constituents for unsampled watersheds in each urban-study area, and to identify pollution sources.
4. To test the effectiveness of storm-water management alternatives such as street sweeping and detention storage.
5. To determine base needs and to evaluate methods of transferring the data to ungaged watersheds in other regions.

As noted earlier, a total of 23 studies were carried out under this program, of which USGS was a key participant in 11. Coordination of other urban hydrology studies is continuing. Estimated expenditures in the Urban Hydrology Program since fiscal year 1972 by USGS are $6.0M. Total expenditures for 276 studies of effects of urban area pollution sources on surface and ground water are estimated to be $57M.

RIVER QUALITY ASSESSMENTS

In 1971, the Geological Survey's Advisory Committee on Water Data for Public Use recommended that the USGS develop and apply an approach for conducting intensive, cause-effect interpretive studies of river-quality problems. The USGS responded by developing an approach which recognized that: (1) each river is physically and biologically unique, with unique water-quality problems and solutions, (2) intensive, applied studies can be conducted to provide a scientific basis for evaluating the effects of alternative water-resource management plans on river quality, and (3) if scientific results are to be used in decisionmaking, they must be effectively communicated to resource managers and to the public.

The first of a series of pilot, federally funded river-quality assessments was started in 1973 in the Willamette River Basin, Oregon. Subsequently, RQA's have been conducted on the Yampa River Basin in Colorado-Wyoming, the Chattahoochie River Basin in Georgia, the Schuylkill River Basin in Pennsylvania, the Apalachicola River in Florida, the Potomac Estuary in Maryland and the District of Columbia, and the Carson-Truckee River Basin in Nevada-California. each of these demonstration projects was selected to address a markedly different hydrologic setting and a different set of problems in order to develop and test methods suitable for many unique situations.

Shortly before the close of the pilot RQA program in fiacal year 1981, USGS judged that the analytical approaches and methodologies for conducting RQA's were sufficiently well developed that future RQA's could be conducted in its Federal/State Cooperative Program. In fiscal year 1982, 33 RQA-type studies were conducted as part of the cooperative program. In fiscal year 1983, seven well developed studies were underway.

NATIONAL WATER-QUALITY NETWORKS

A major contribution of the USGS Federal program to the identification and assessment of nonpoint sources of pollution is the water-quality data acquisition activities carried out in the HBM program and NASQAN.

The hydrologic bench-mark program

The hydrologic Bench-Mark Program grew out of a proposal on 1962 for a national network of hydrologic bench marks, chiefly for the purpose of the study of time trends and to serve as controls for separating natural from artificial changes in other streams. The purposes of the HBM are to provide consistent data on the hydrology, including water quality and related factors in representative undeveloped watersheds nationwide, and to compare and contrast conditions observed with basins more obviously affected by the hand of man.

Beginning in 1963, the program was built to 57 sites by 1970 with few changes since that time. Sites are located in areas where (1) no manmade storage, regulation, or diversion currently exists or is probable for many years, (2) ground water

within the basin is not affected by pumping from wells, (3) conditions are favorable for accurate measurements of streamflow, chemical and physical quality of water, ground-water conditions, and the various characteristics of weather, principally precipitation, and (4) the probability of special natural changes due to such things as major activities of beavers, overgrazing or overbrowsing by game animals, or extensive fires is small.

NASQAN was created to fill a need, recognized widely in the late 1960's and throughout the 1970's for a consitent national data base for examing conditions and trends in river water quality. The network was begun in fiscal year 1973 with 50 stations and implemented gradually to full level in fiscal year 1979 with 518 stations. Since that time, adjustments in the network have been made to meet budget constraints and to eliminate stations which were not in adherence with the program objectives. Currently, there are 502 stations in active operation.

The objection of NASQAN is to obtain information on the quality and quantity of water moving within and from the United States in way that will permit description of areal variability and detection of changes in stream quality and lay the groundwork for future assessments of stream quality. NASQAN stations are located at the downstream ends of hydrologic accounting units which ranged in drainage area from about 3.4 square miles to about 1.4 million square miles. The median drainage area is about 3,500 square miles. Sites are located such that 90 percent or more of the water originating in the accounting unit flows by the station. For the most part, water samples are collected monthly and analyzed for a comprehensive suite of chemical constituents including major ions, the biological nutrients, and trace metals. Until fiscal year 1982, USGS cooperated with EPA in the collection and analysis of water samples at about 153 NASQAN stations for selected pesticide residues. That program was discontinued after fiscal year 1981. Plans are now being formulated to resume sample collection and anslysis for pesticides and a number of other organic compounds within the NASQAN program.

In addition to the ongoing NASQAN and HBM programs, from 1974 through 1981, USGS operated a National Water Quality Surveillance System (NWQSS) for EPA. This network consisted of 130 sites located upstream and downstream of major nonpoint pollution sources such as urban areas and major agricultural areas. The objective of this program was to assess the nature and extent of pollution from these areas. Samples were collected every 2 weeks over the period of the program.

Mr. ROE. The gentleman from California.

Mr. PACKARD. Thank you, Mr. Chairman.

You mentioned just a moment ago that you felt that one of the things that we ought to do more of is to improve and increase our monitoring systems. All during this week's testimony, we have heard how difficult it is to assign responsibility for pollution, both in terms of nonpoint and point sources. This is particularly true in agriculture. One farmer may put into the water more nutrients and more pollution than another, and it would be very difficult to monitor each farm or each area of agriculture. And it is true also in industry, in many cases. It is difficult to monitor the input that different industries put into the system.

How do you propose, or do you have proposals of how to improve and increase that monitoring system to where assigned responsibility could be allocated, justifiably? Can this be done without looking upon the Federal Government or State agencies to take the burden of financing and implementing various remedial measures? Does the fact that we do not have a good monitoring system whereby we can assign the responsibility to communities, to industry, to farms necessarily mean that we cannot develop one that operates independently of governmental financing?

Mr. COHEN. From a scientific point of view, Mr. Congressman, I would state, as I tried to before, that this is something that we need to do very carefully and very deliberately. It is very, very expensive to establish major networks to measure water quality.

The amounts of data that are being collected are enormous, and over the past several decades, as the data collection efforts have accelerated, we have found many, many players becoming involved, as is the case with the Geological Survey, in the collection and analysis of water quality data. We and virtually all of our colleagues in the scientific community are very frustrated with the problems associated with inconsistent methodologies from time and place, within agencies using different techniques, these techniques changing—simple matters of not recording the type of change and when it occurred. We do subtle-trend analyses. We have difficulties in determining whether we are, in fact, seeing real trends or simply seeing changes in methodology.

So I think the debate that is going on now at the Government level and in the scientific community as to how—which is the response to your question, in essence—is one that is healthy. I think the EPA approach has been to delegate substantial responsibilities for monitoring down to State and local levels. Significant data bases have been developed. Those data bases are just now being examined from a regional and national point of view, and it remains to be seen whether or not we ought to continue in that direction, accelerate those types of activities, or pause for a moment and reflect on what we are looking at.

My answer to your question has not been as sharply focused as I know you would have wished. But the point I want to make is that it is an extremely complex issue, one that has tremendous payoff in both the short and intermediate term. The Congress and others will need to make decisions based upon the results of certain actions that have been taken, and I think it behooves us to be very, very careful in terms of making sure that the information we can provide you from a scientific point of view is, in fact, real and valid and acceptable.

Again, I would urge a very deliberate and careful debate of the type that is going on right now. Incidentally, I understand that Congress is now in the process of considering some legislation which would establish or might establish a mechanism at the Federal level to review this entire issue of monitoring.

Mr. PACKARD. Let me ask a followup question on that. In your judgment, which is the better way for Federal funds to be utilized, on an expanded network of monitoring devices and systems, or funding remedial antipollution techniques? Or should there be a mixture of the two? Where would you get the most for your dollar?

Mr. COHEN. I think you must have a mix there. Monitoring is necessary to define the problems and help define the remedial techniques that will be employed. Thereafter, one must monitor at some reasonable degree of specificity to determine whether, in fact, we are achieving the results that we have attempted to achieve by funding major projects.

A carefully designed monitoring and interpretation program, I think, is vital to both defining the problem and defining the method of attacking the problem.

Mr. PACKARD. What role do you think that the Congress ought to play in developing a monitoring system—should that be something that we mandate, that we regulate, and to what extent should we be involved?

Mr. COHEN. I think clearly, a monitoring system has been, is, and should continue to be in part a Federal responsibility. There is a Federal role to be played. Witness the fact that with regard to agencies such as mine and EPA, our mandate and our funding derives from congressional actions. I welcome the fact that Congress is paying an increasing interest into the issue of monitoring, and as I indicated before, I understand legislation is being introduced that would further define the role of Congress in a monitoring program. And I personally welcome that initiative on the part of the Congress.

Mr. PACKARD. Thank you, Mr. Chairman.

Mr. ROE. I want to thank our witness for his input. It seems to me that fundamentally, we are going to determine one of two things. When you speak of monitoring, you are talking of monitoring as we are progressing alone, and not only for short and long range. But if we are going to determine whether the investment of $100 billion is made properly, somebody ought to be doing something about making those determinations on a scientific basis rather than—without being facetious—checking with the fish. I mean, somebody has got to know what is happening out there, and it is not obvious to the naked eye.

Are the results we receive commensurate with the investment we are making. I think that is what you are saying, in part.

Mr. COHEN. Yes, sir.

Mr. PACKARD. Would the chairman yield on that, just for a moment longer?

Mr. ROE. Of course.

Mr. PACKARD. And maybe I can respond in a question. Is there thought being given to the role that industry and agriculture ought to be playing in this monitoring system, or should it simply be a Federal responsibility for monitoring and establishing the regulatory measure of monitoring? Could or should there be also an overlap in terms of requiring industrial and other polluters to self-monitor? I would like a response on that, also. How should the Federal role and the private sector's role in monitoring be balanced?

Mr. COHEN. Certainly, industry has demonstrated the capacity to do water quality monitoring at the same level or better than any other entity in the country. So industry could and should play a major role in water quality monitoring.

I have no views, no personal views, as to what an appropriate balance would be between all of the entities that should be involved in the monitoring programs. But I would agree with the implication of your question, that the requirement for such a program and magnitude of the program is such that all capable entities, both public and private, should be involved. And thus, as I indicated earlier, I welcome congressional concerns about how to put that package together.

Mr. ROE. The gentleman from Georgia.

Mr. ROWLAND. Thank you, Mr. Chairman.

Along that same line, what part do you think the States should play in doing this in relationship to the Federal Government; should funds go from the Federal Government to the States to help them, or should the Federal Government be more involved, actively, itself to the exclusion of the States?

Mr. COHEN. Traditionally, the States have played the dominant role in the collection of water quality data, and they continue to play that role. It would seem to me that that is the thrust of the direction in which the country has been going, and I think most of my colleagues would concur that that is an appropriate thrust. But somehow, the Federal Government has to continue to develop its role of coordinating these activities. In fact, in various programs, the Federal Government helps fund these activities. A very simple and straightforward matter such as insuring consistency in the methods by which data are collected, analyzed, and stored would be a significant contribution that the Federal Government probably is uniquely qualified to make, in view of the fact that there is some usefulness in looking at this from a national scale.

But the States are playing a major role in collecting the data, and in all likelihood will continue to play such a role.

Mr. ROWLAND. Thank you.

Thank you, Mr. Chairman.

Mr. ROE. Thank you very much, Mr. Cohen, for your valuable testimony, and we may have a few other questions, but we will get back to you on it.

Meanwhile, thank you very much for being with us this morning.

Mr. COHEN. Thank you, sir.

Mr. ROE. Our next witness is Mr. Alvin Myers, manager, Governmental Relations Division, Pennsylvania Farmers Association, representing the Pennsylvania Farmers Association Coalition of Soil Conservation Interests in Pennsylvania.

The committee wants to welcome Mr. Myers to our hearing this morning.

Would you introduce Mr. Swartz, who is accompanying you, for the record?

TESTIMONY OF ALVIN MYERS, MANAGER, GOVERNMENTAL RELATIONS DIVISION, PENNSYLVANIA FARMERS ASSOCIATION, ACCOMPANIED BY PAUL SWARTZ, EXECUTIVE SECRETARY, PENNSYLVANIA SOIL CONSERVATION COMMISSION

Mr. MYERS. I will.

I wish to thank the chairman for the opportunity to testify here today. As you indicated, my name is Alvin Myers. I am the manager of the Governmental Relations Division of the Pennsylvania Farmers Association and the Pennsylvania Farmers Association is affiliated nationally with the American Farm Bureau Federation.

I have with me Mr. Paul Swartz, who is executive secretary of the Pennsylvania Soil Conservation Commission.

My testimony today is on behalf of a coalition of conservation, agriculture, legislative, and municipal groups in Pennsylvania, and I believe you have the list of that group submitted to your committee.

Our testimony today will relate to agricultural solutions to the Chesapeake Bay problem, in addition to clean water on a national basis.

Our comments today will illustrate that the two most important nonpoint problems in the agriculture area are soil erosion and nutrient management. A number of successful programs have been

initiated in the last few years that show promise as important implementation tools to reduce losses from erosion and excess nutrients. Studies such as one recently completed in Pennsylvania, titled "An Assessment Agricultural Nonpoint Source Pollution in Selected High Priority Watersheds in Pennsylvania," are important tools to direct implementation strategies and should be continued where needed in other priority watersheds that have not yet been studied. This type of information provides a solid foundation by which to design effective implementation programs.

We will also outline a number of needed initiatives that will require financial support from Federal, State, and local sources if the nonpoint source pollution program is to move in a forward direction. The organizations endorsing this testimony all urge the Congress of the United States to consider these suggestions in the overall strategy to provide a continuing planning and implementation program as part of the Clean Water Act.

We oppose any effort by Congress to mandate specific cultural practices for agriculture, for a number of reasons. The wide range of available alternatives is almost proof in itself that no one cultural practice is applicable to the diversity of American agriculture. Legislation of particular practices locks us into a past or possibly a present state-of-the-art control mechanism and does not provide the opportunity for newer, more effective, or more economic technologies to be applied in the future. Virtually no recommended solution will work under all circumstances because of the variation of rainfall, soil structure, and topography that is characteristic of American agriculture.

Had terracing been mandated in the past as a solution to a farmer's nonpoint-source problems, new technologies would not be developed to their present state. We would have been regulated into a more energy-intensive soil-moving program that would have been more costly, more difficult to implement and extremely burdensome.

In order to make the nonpoint-source program more effective and more responsive to the individual needs of landowners throughout this country, a number of solutions have been discussed and are supported in Pennsylvania.

One, more funding is needed to allow the continued targeting of technical and financial resources that would be above the current baseline program and not to offset losses from regular program funding. This targeting can allow for a concentrated effort by more efficiently using available dollars.

Two, special programs need to be developed to address the nutrient problems which can be on the order of special ACP projects or other experimental projects. And I might add in the current ACP projects, the USDA lists erosion control as top priority, and we believe perhaps an upgrading of priority of water control or water quality may be appropriate to consider.

Three, additional research is needed by land-grant universities to provide improved soil testing, plant tissue testing, and manure testing to allow farmers to apply only the nutrients required for crop growth.

Four, better information and educational programs are needed that will demonstrate to farmers the economic benefits of conserva-

tion measures, especially where excess nutrients are being applied above what is actually needed for plant growth. Substantial savings could result by reducing chemical fertilizer applications and using the nutrient benefits of manure.

Five, demonstration projects are needed to show how conservation tillage systems and other low-cost management practices can reduce soil losses and nutrient losses without large investments by cash-poor farmers. Demonstration projects would provide farmers and ranchers an opportunity to gain firsthand knowledge of the methods of runoff reduction, potential impacts on yields, costs of production, special skills required, likely management problems, and future profitability of the operation.

Where demonstration projects have been used as educational tools in the Corn Belt, conservation tillage has been well accepted, particularly so where hands-on experience with equipment has been provided. We believe that this trend could be continued in other regions and that farmers and ranchers would adopt other good best-management practices, BMP's, if appropriate demonstration programs could be developed.

Six, new innovative methods are needed to utilize manure; a system that would provide a marketing outlet for excess manure, community-type methane-generation systems, and spray irrigation of digested manure can all play an important role in utilizing a waste product as an economic benefit for farmers.

Seven, an important part of any accelerated program for installing best-management practices has to include a monitoring element that will clearly document the progress that is made and show changes in water quality so that ineffective BMP's can be discarded and successful BMP's can be maximized in the most cost-effective way.

The Clean Water Act has been an important tool from the Federal level to provide a focus on all water-quality problems throughout the country. It especially has provided incentives to recognize and address sources of water pollution from diffuse runoff from nonpoint sources.

In summary, we believe our remarks provided some insight into the nonpoint source pollution problems across the country and specifically as this program applies to the State of Pennsylvania. Our comments attempted to describe the problems that we can presently identify. We are providing additional information as an appendix to our testimony that describes current issues and problems as well as programs that have been addressing nonpoint-source pollution in the past and present.

We appreciate the opportunity to present our views on this subject to you today, and we would be happy to answer any questions that you have.

Mr. ROE. We want to thank you very much for your substantive testimony.

Let me ask you just one question. You mentioned in paragraph 3 on your first page, and I quote: "We oppose any effort by Congress to mandate specific cultural practices for agriculture for a number of reasons."

We have had a thread of testimony over the last 2 days that has spoken to that issue—folks from Wisconsin and other areas—ex-

pressing their concern that if we are just going to extract the point source, municipal, industrial plants, and put that as one category, and then throw everything else into the nonpoint source, that we are just mixing the pickles, and we are not going to solve anything in that direction.

So one solution that one person who testified came up with is that if there is any treatment of agriculture, whether it would be added funding to help with specific problems that may exist on a particular farm or a particular ranch, that agriculture ought to be a separate category within the nonpoint source designation.

What do you think about that issue?

Mr. MYERS. I do not think that we would oppose that. Our concern is that if specific BMP's, best management practices, were mandated, we would be locked into that, and we have determined in the past that the state of the art today is not necessarily the state of the art of the future. And we believe that any mandating of specific practices would lock us into practices which we feel would could not——

Mr. ROE. I think your point is substantively taken. I think you are right there. What I am trying to get at is that a disagreement has arisen as to whether or not there should be any added funding, for example, made available to beef up the USDA's efforts. What they have been doing for 35 years, as you testified to, has been successful. When Mr. Ruckelshaus and others testified they said they did not believe there should be any funding allocated for the nonpoint source, that that ought to be funding that emerges and methodology that emerges from States and localities. So that is going to come to a conclusion someplace in our debate.

And having said that, I just want to get back to the point that it seems logical to remove or separate agricultural uses from other issues in the nonpoint-source issue, for example, minetailings, acid mine wastes, and so forth, and so on.

Mr. MYERS. I understand your question, and my answer would be in the affirmative, yes.

Mr. ROE. OK, that is what I wanted to get.

I have no further questions.

Do you have any further thoughts you want to express at all, Mr. Swartz?

Mr. SWARTZ. Only that I feel that our efforts in Pennsylvania closely parallel those in the States of Maryland and Virginia, and that we are especially grateful for the close working relationship that has developed between the farm organizations and the various State agencies, because we think that that type of a collective approach is the only way that we are going to get the best-management practices on the land.

Mr. ROE. You are talking in the regional approach. The fact of the matter is that the work that they are doing in your respective State, and in Maryland and Virginia on the Chesapeake environs, is excellent, and if we can use that as a model, and as the Governors were saying this morning, let's get moving and get something done. That is what we are going to try to do.

So thank you very much for being with us this morning. Your valuable testimony will be reviewed, and I think you made some very good points.

Thank you very much, sir.
Mr. MYERS. Thank you.
[The appendix to Mr. Myers statement follows:]

APPENDIX

ISSUES AND PROBLEMS

Two main sources of water pollution from land activities are from (1) erosion and the accompanying sedimentation and (2) nutrients that either wash off the land or are leached through the soil profile into the ground water that migrates to the streams and rivers. Pollution from pesticides and other toxic materials that result from other land activities such as mining, oil and gas development and urban activities are also associated with water pollution.

We would like to concentrate our remarks on the first two elements, erosion control and nutrient management, which are the most important insofar as agricultural activities. Recent water quality planning activities and research have focused a great deal of attention on agriculture related pollution activities. The study nearly completed by EPA in the Cheaspeake Bay has produced a great deal of scientific evidence that demonstrates the loss of nutrients and sediment from farming operations within the Susquehanna River Basin in Pennsylvania. At the present time, there are a number of programs that contain best management practices (BMPs) that control problems related to both soil erosion and nutrient management. However, certain activities, particularly those involving the loss of nutrients from animal wastes, require special solutions and need practices that relate primarily to the control of nitrogen rather than the traditional practices that are designed primarily to control phosphorus.

During the past two years, a study was conducted in Pennsylvania by the Department of Environmental Resources ("An Assessment of Agricultural Non-Point Source Pollution in Selected High Priority Watersheds in Pennsylvania") that identified specific problems and potential solutions in a number of high priority watersheds previously identified in Pennsylvania's 208 plan. This study, funded by EPA through the 208 planning program, has confirmed that a significant amount of problems do relate to the agricultural activities. This study involved the actual contract with farmers, nearly 3,000 in number, to gather information including farmers' opinions about certain features of their agricultural operations. Two main problem areas were identified:

a. Soil loss

Traditionally, most of the programs from the federal government have related to soil loss. The current delivery mechanism of the individual agencies within the U.S. Department of Agriculture are sound and have the capability of delivering the technical and financial services to the individual landowners. Continued cooperation among federal, state and local conservation agencies is a *must* in order to maximize the available resouces and to implement an effective program. Many of these programs have been given only modest implementation since their creation, for a number of reasons. Financial constraints upon farmers and a lack of federal funding to assist farmers in complying with BMP's for agriculture are in the forefront of factors that have prohibited full implementation of these programs at the local level.

Our study in Pennsylvania has shown that erosion has exceeded acceptable limits on 46 percent of the farms surveyed. It was also determined that a high percentage of the land under cultivation has been utilized for row crops, with the highest losses of soil (more than 10 tons per acre) occurring on farms with the largest acreage of row crops. It was also found that the program jacks the right cooperators—those with the worst soil and water problems. Further, many of those cooperators have not implemented their plans to protect their soil and water resources. A great deal of the land under cultivation is still tilled by conventional methods; however, our study confirmed that soil losses are reduced when reduced tillage systems are used.

b. Nutrient management

In the area of nutrient management, the majority of farmers in southeastern Pennsylvania apply manure in excess of the crops' nutrient needs. It was learned that the number and concentration of livestock in this area has increased significantly during recent years, resulting in overpopulated pastures that lack management and maintenance. These high concentrations of livestock have generated more manure than could be effectively used by the farmers on adjacent fields or farms.

For example, in Lebanon County, Pennsylvania, studies showed that 40 percent of the farmers who expressed a need for more manure storage do not have the land required to use the manure they now produce. Traditionally, very few farmers have had adequate storage facilities to allow for the timely application of manure.

Existing governmental programs are geared primarily to erosion control and do not address the type of nutrient management problems that the study in Pennsylvania has uncovered. The type of problems relating to manure management needs to be developed on small critical watershed areas where certain types of cropping programs and livestock concentrations produce a unique management situation.

Each watershed that was studied analyzed its own information and developed specific recommendations for program improvement in their watershed. Some even prioritized subwatersheds for faster treatment and will direct their county resources in the areas of greatest need first. Other conservation districts provided specific recommendations for program acceleration, research needs, educational strategies, and other more innovative solutions that would be tailored to their own problems. We believe these programs can be effective and need to be encouraged.

CURRENT ON-LINE PROGRAMS

A number of initiatives have been developed to specifically address the critical erosion and nutrient management needs through various federal, state and local programs. The latest policy of USDA to target manpower and financial resources to critical erosion areas identified during the Resources Conservation Act (RCA) program has enabled the initiation of a major project in Pennsylvania and Maryland to abate critical erosion. The Mason-Dixon project will provide additional technical and financial resources to accelerate the installation of BMPs throughout the 22 county area.

The Rural Clean Water Program administered by the Agriculture Stabilization Conservation Service, although experimental in nature, has provided an important program effort in Pennsylvania on the Consetoga Headwaters Watershed. Many federal, state and local agencies are working hand in hand to accelerate conservation practice installation on an area that has critical nitrate problems in groundwater. An additional element of comprehensive monitoring will attempt to show the most effective practices and track the accomplishments to demonstrate the change in water quality over time.

An effort is underway to coordinate activities among federal, state and local agencies anticipating new funding for implementation of strategies from the Chesapeake Bay Program. There is an expressed need for involvement by researchers, technicians and policy makers alike to determine the most effective strategy for use of any available funding.

There are several initiatives underway by Conservation District organizations to increases state and local funding for conservation related programs. During this past budget year in Pennsylvania, a dramatic increase from $250,000 to $750,000 was accomplished through the efforts of the 66 conservation districts in Pennsylvania. These new monies will allow conservation districts to supplement the technical assistance available from federal and state sources so programs for direct assistance to farmers and other landowners can be accelerated. We are aware that other states throughout the country and expecially in the Northeast have recently expanded their programs providing assistance to their conservation districts for increased program support as well.

Mr. ROE. Our next witness this morning is Mr. Jim Humphrey, from the Humphrey Chemical Co., representing the Synthetic Organic Chemical Manufacturers Association.

We want to welcome you, Mr. Humphrey, to our committee.

The full text of your prepared statement will appear in the record at this point.

[Statement referred to follows:]

STATEMENT OF THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION

The Synthetic Organic Chemcial Manufacturers Association ("SOCMA") is a nonprofit association of producers or organic chemcials. A membership list is attached. Many of SOCMA's 100 members are small chemical companies.

The regulatory approach to pretreatment of industrial wastewater by users of publicity owned treatment works ("POTW's") is an issue of great importance to SOCMA's members. A large number of its members operate one or more plants

which are tied to a POTW. In many cases, these plants are located in areas in which there is no reasonable alternative to the use of a POTW's services.

SOMCA'S CONCERNS WITH THE PRESENT PRETREATMENT STRATEGY

1. The president national pretreatment program is unworkable and has not measurably advanced statutory goals

SOCMA believes that the present pretreatment strategy, founded as it is on national categorical pretreatment standards, has not led toward measurable advancement of the goals of the Clean Water Act. While EPA has made progress in developing national categorical pretreatment standards, many standards, including those for the organic chemical and plastic and synthetic materials industry, have not been completed. And substantial issues remain due to the diverse and complex nature of industrial users of POTWs, to the difficult technical questions relating to the treatability of particular wastewaters by POTWs and by alternative pretreatment technologies, to the difficulty resolving important questions of POTW sludge use and disposal, and to the economic impact of those regulations, particularly on smaller companies. Further, the present provisions of the general pretreatment regulations for application of the categorical standards to particular POTWs and industrial users are excessively complicated to the point that they are, in SOCMA's view, unlikely to be a workable tool for providing needed flexibility in the national standards.

2. Many POTW's have developed effective local pretreatment programs

Perhaps the most important point, in SOCMA's view, is that many municipalities already have developed effective local pretreatment programs. SOCMA believes that such programs have substantially implemented the objectives of the Clean Water Act in that they protect POTW operations, ensure compliance with POTW NPDES permit limitations, ensure safe sludge disposal, and allow cost-effective treatment of both industrial and municipal waste.

As succintly stated by the Oversight Review Subcommittee of this Committee in its 1980 report on implementation of the Act:

"In contrast to the problems that EPA has encountered in its efforts to move forward with a National pretreatment program, many communities have moved forware with their own, experiencing far less difficulty in meeting the essential thrust of the 1972 pretreatment language." Subcommittee on Oversight and Review of the Committee on Public Works and Transportation, House of Representative, 96th Cong., 2d Sess., Implementation of the Federal Water Pollution Control Act, at 40, 44 (Comm. Print 1980).

3. The Wilmington, Delaware POTW offers a good example of an effective local pretreatment program

SOCMA hosted a tour of the Wilmington, Delaware, POTW on November 18, 1982, which was attended by four staff members of this Committee, Messrs. Errol Tyler, Willen Van den Broek, John Doyle and Craig De Remer. The Wilmington is POTW is a large urgan system discharging 700 gallons a day and having over 300 industrial dischasrgers. Wilmkington is a prime example of localities where, in the absence of Federal pretreatment standards, an environmentally sound POTW program has been developed.

ALTERNATIVE LOCAL PRETREATMENT SYSTEMS AS AN OPTION TO NATIONAL STANDARDS

1. The Clean Water Act should be amended to allow alternative local pretreatment systems in lieu of national categorical standards

SOCMA believes that the Clean Water Act should be amended to provide an option to the application of the national standards to industrial users of individual POTWs. SOCMA further believes that constructive legislation can be developed around the concept of "alternative local pretreatment systems" presented by the Association of Metropolitan Sewerage Agencies and others in hearings before the subcommittee in 1982. SOCMA believes that a program for alternative local pretreatment systems would provide needed flexibility with respect to pretreatment controls and should be included in the bill reported by the Committee.

2. Basic principles upon which a revised pretreatment program should be founded

A program for alternative local pretreatment systems should be founded on the following basic principles:

First, alternative local pretreatment systems should be considered the preferred option for implementing the Clean Water Act with respect to industrial users of POTWs. The Congress, in amending the statute, and EPA and the

states, in implementing such new provisions, should encourage POTWs to develop alternative local pretreatment systems. Unnecessary statutory and regulatory impediments to the development and adoption of local systems should avoided.

Second, an alternative local pretreatment system should ensure that industrial wastes do not preclude POTW compliance with NPDES permit effluent limitations implementing secondary treatment requirements pursuant to Section 301(b)(1)(B) or implementing state water quality standards pursuant to Section 301(b)(1)(C).

Third, an alternative local pretreatment system should ensure that industrial wastes do not preclude the sludge use or disposal system option chosen by the POTW consistent with applicable regulatory requirements, including guidelines under Section 405.

Fourth, the POTW and the permitting agency should be accorded flexibility in the type and mix of pretreatment requirements for industrial users of the POTW so long as the two foregoing basic requirements are met.

Fifth, an opportunity for public participation in the development of an alternative local pretreatment system should be accorded and, in particular, industrial users of the POTW should be encouraged to participate.

ELEMENTS OF A PROGRAM FOR ESTABLISHING ALTERNATIVE LOCAL PRETREATMENT SYSTEMS

SOCMA believes that the elements of a workable and acceptable pretreatment program can be derived from the foregoing principles.

1. A program for alternative local pretreatment systems should be implemented through POTW NPDES permit modifications

Modification of POTW NPDES permits is an appropriate procedural approach for implementation of a program for alternative local pretreatment systems since NPDES permits are the prime mechanism implementing the Clean Water Act. While specific provisions would have to be added to the NPDES regulations regarding alternative local pretreatment programs, they should not include unnecessary substantive, procedural, or paperwork requirements which would inhibit POTW applications.

2. Applications for permit modifications to implement alternative local pretreatment systems

The POTW should be required to submit the following as part of its application for modifications of its NPDES permit to authorize an alternative local pretreatment program.

Identification of pollutants which are or are expected to be covered by categorical pretreatment standards and which, on the basis of findings from an adequate monitoring program, are present in POTW effluent or sludge in sufficiently significant concentrations or quantities to merit consideration for regulation in the POTW permit and/or the alternative local pretreatment program.

Identification of and information on industrial users covered by proposed or promulgated national categorical pretreatment standards.

Identification of and information on other industrial and non-industrial sources of significant quantities of pollutants which may be subject to regulation under the alternative local pretreatment system.

A plan for the regulation of industrial users and for the reduction of pollutant loadings from non-industrial sources.

A plan for monitoring and enforcement of requirements for industrial users.

A description of legal authority for implementation and enforcement of the alternative local pretreatment system.

A description of the resources required to implement and enforce such a plan.

3. Approval of permit modifications to establish alternative local pretreatment systems

In acting upon a POTW application for a permit modification to adopt an alternative local pretreatment system, the permitting agency should update the POTW's permit by revising the effluent limitations in the permit to reflect the current requirements for secondary treatment and state water quality standards. The basis for the permit (and for the pretreatment system) should be the water quality standards in effect at the time the permit is issued. Compliance schedules, as necessary and appropriate, should be included to achieve such requirements.

The NPDES permitting authority should be required to approve the POTW's application unless it finds that—

(1) The plan for regulation of industrial users and non-industrial sources is inadequate to—

(a) ensure that industrial wastes do not preclude POTW compliance with NPDES permit effluent limitations implementing current secondary treatment requirements or implementing existing state water quality standards or

(b) ensure that industrial wastes do not preclude the sludge use or disposal system option chosen by the POTW consistent with applicable regulatory; requirements; or

(2) The plan for monitoring and enforcement of requirements for industrial users is inadequate to ensure compliance with such requirements; or

(3) The POTW lacks the legal authority or resources to implement and enforce the alternative local pretreatment system.

4. Pretreatment compliance deadlines

Reasonable deadlines should be established for compliance with requirements of alternative local pretreatment systems or with categorical pretreatment standards for industrial users of POTWs which have not adopted alternative pretreatment systems. Consistent with the requirements of existing law, industrial users should be allowed up to three years to comply with either local requirements or national standards after the time at which it is determined that such requirements are applicable. In addition, a mechanism should be provided for the application of pretreatment standards to plants subject to different regulations promulgated at different times.

5. Pretreatment program review and revision

The alternative local pretreatment system should be reviewed and revised as necessary—

(1) in connection with renewal of the POTW's NPDES permit or

(2) if it is determined that a POTW is not in compliance with its NPDES permit or sludge use or disposal requirements and industrial wastes may be a significant cause of such non-compliance.

In addition to implementing the foregoing elements of a new program, EPA should review and revise its NPDES and general pretreatment regulations to ensure that unnecessary detail, procedures, and paperwork do not discourage POTWs from developing alternative local pretreatment systems. Further, EPA should assist POTWs in developing alternative systems by evaluating and publishing information on existing POTW pretreatment programs.

CONCERNS THAT ALTERNATIVE LOCAL PRETREATMENT SYSTEMS WOULD IMPOSE AN EXCESSIVE RESOURCE BURDEN ON EPA ARE GROUNDLESS

SOCMA understands that concern has been expressed that review of alternative local pretreatment systems would impose an excessive administrative burden upon EPA. SOCMA does not believe that the potential administrative burden is sufficient to justify a Congressional decision not to authorize cost-and environmentally-effective alternative local pretreatment systems. Essentially the same demonstrations with respect to effluent and sludge quality as would be necessary for such alternative local pretreatment systems are required in conjunction with the existing removal credits program. Reviewing alternative local pretreatment systems would not impose much, if any, additional administrative burden on EPA than the Agency would experience in any event under its existing regulations. Indeed, such reviews might prove less burdensome than EPA's responsibilities under the current pretreatment regime, which include review of local POTW programs which must incorporate and apply numerous categorical standards rather than simply limitations for those pollutants that threaten to cause interference, water quality or sludge-contamination problems.

CONCLUSION

SOCMA respectfully urges that legislation being developed by the subcommittee include provisions authorizing alternative local pretreatment programs. SOCMA would be pleased to work with the Committee in developing legislation authorizing alternative local pretreatment programs.

SOCMA MEMBERSHIP

Aceto Industrial Chemical Corp.; Albany International Corp.; American Cyanamid Co., American Hoechst Corp.; Amoco Chemical Corp.; Basf Wyandotte Corp.; Berncolors-Poughkeepsie, Inc.; Biddle Sawyer Corp.; Bofors Noble Inc.; Borden Inc.; Buffalo Color Corp.; Carey Industries, Inc.; Carroll Products, Inc.; Celanese Corp.; Chattem, Inc.; Chemical Exchange Industries, Inc.; Chemtan Co., Inc.; Crown Metro, Inc.; Day-Glo Color Corp.; Dow Chemical U.S.A.; Drew Chemical Corp.; E. I. Du Pont de Nemours & Co.; Dye Specialties, Inc.; ESCO—East Shore Chemical Co., Inc.; EM Industries, Inc.; Essex Chemical Corp.; Evans Chemetics; Fairmount Chemical Co., Inc.; Fike Chemicals, Inc.; First State Chemical Co., Inc.; FMC Corp.; GAF Corp.

Hexcel Chemical Products; Hilton-Davis Chemical Co., the (Group of Sterling Drug, Inc.); H&S Chemical, Inc.; Humphrey Chemical Co., the; ICI Americas Inc.; Jarchem Industries, Inc.; Kohnstamm, H., & Co., Inc.; Loctite Corp.; Lonza, Inc.; Mallinckrodt, Inc.; Merichem Co.; Milliken Chemical (Division of Milliken & Co.); Mobay Chemical Corp.; Monsanto Co.; Mooney Chemicals, Inc.; Morton Chemical Co.; Muskegon Chemical Co.; Napp Chemicals, Inc.; National Starch & Chemical Corp.; Occidental Chemical Corp.; Olin Corp.

C. H. Patrick & Co., Inc.; Pennwalt Corp.; Pfister Chemical, Inc.; Phillips Chemical Co. (a Subsidiary of Phillips Petroleum Co.); Polaroid Corp.; PPG Industries; Products Research & Chemical Corp.; RSA Corp.; Reilly Tar & Chemical Corp.; Rhone-Poulenç, Inc.; Salsbury Laboratories; Sandoz Colors & Chemicals; Saytech, Inc.; Soluol Chemical Co., Inc.; Standard Chlorine Chemical Co., Inc.; Stauffer Chemical Co.; Sterling Organics (a Division of Sterling Chemical Group); Sun Chemical Corp.; Synalloy Corp.; Blackman Uhler Chemical Division; Thiokol/Specialty Chemicals Division; Union Carbide Corp.; UpJohn Co., The; White Chemical Corp.; Witco Chemical Corp.; Wyckoff Chemical Co.

ASSOCIATE MEMBERS

Atlanta Chemical Co., Inc.; Biesterfeld U.S., Inc.; Brown & Caldwell; Chemical Control & Management Services, Inc.; Chemisphere Corp.; CP Chemicals, Inc.; Dainchiseika Color & Technology, Inc.; Engelhard Industries; Environmental Research & Technology, Inc.; Fanwood Chemical, Inc.; R. W. Greeff & Co., Inc.; Kennedy & Klim, Inc.; Howard L. Minckler & Associates; Mercantile Development, Inc.; Mitsui & Co., (U.S.A.), Inc.; Montedison USA, Inc.; Nachem Inc.; Orlex Chemical Corp.; Pylam Products Co., Inc.; R-Chem, Inc.; Springborn Regulatory Services, Inc.; Wilson Dye & Chemcial Distributors, Inc.

Mr. ROE. Please proceed.

TESTIMONY OF JAMES R. HUMPHREY, VICE PRESIDENT, HUMPHREY CHEMICAL CO., NORTH HAVEN, CONN., ON BEHALF OF SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, ACCOMPANIED BY THOMAS GOLDBERG, MANAGER OF ENVIRONMENTAL AFFAIRS, SOCMA, AND DOUGLAS KLIEVER, COUNSEL, SOCMA

Mr. HUMPHREY. Good morning, Mr. Chairman, and other members of the Water Resources Subcommittee. I am James R. Humphrey, vice president of the Humphrey Chemical Co.

Thank you for the opportunity to share with you the views of our company and also of the Synthetic Organic Chemical Manufacturers Association, otherwise known as SOCMA, a trade association representing about 100 chemical companies, many of which, like us, are quite small.

With me today are Thomas Goldberg, SOCMA's manager of environmental affairs, and Doug Kliever, SOCMA's counsel. Incidentally, I want to note that SOCMA has submitted a written statement for the record.

Mr. ROE. Yes; the statement will appear in full in the record, if you want to summarize, and I think you should strike at the key points that you want to make.

Mr. HUMPHREY. I wanted to briefly outline for you some of the characteristics of our company, because I think it bears well on the issues of pretreatment.

Mr. ROE. Before you do that, could you do me a favor and give us just a little bit of background on what we mean by "synthetic organic chemicals"? I think we ought to get that into the record at this point.

Mr. HUMPHREY. OK. Synthetic organic chemicals as such are chemicals that are manufactured from other materials and find their way—they are used as intermediates, perhaps, in the manufacture of other chemicals. We are an organic chemical manufacturer.

Mr. ROE. What kind of chemicals are you speaking to?

Mr. HUMPHREY. Well, why don't I go on with my statement. I think I answer that question in there.

Mr. KLIEVER. Mr. Chairman, the term "synthetic organic chemicals" really covers the universe of manufactured organic chemicals.

Mr. ROE. OK. Do you want to pull your microphones closer so we can hear.

I want to get into the record, so that we are identifying the scope and the area that you are speaking to.

Mr. HUMPHREY. I understand.

Humphrey Chemical is located in North Haven, Conn., about one-half mile from the Quinnipiac River. We manufacture and sell fine organic chemicals worldwide. These are intermediates for other chemical companies usually larger than us.

Our products can be divided roughly into four groups. This gets a little technical, but for a good purpose.

Mr. ROE. That is all right. I think it is helpful.

Mr. HUMPHREY. One, alkenyl succinic anhydrides. These materials are useful as intermediates for the production of rust inhibitors, epoxy hardeners, modified food starch, synthetic paper size, detergents, and leather treatment chemicals; two, alkanes of very high purity, used as standards by the oil industry; Three, alkyl bromides, and four, alkyl mercaptans used in photographic chemicals and silver polish formulations.

We produce about 100 different compounds, have $5 million gross sales annually, and employ 38 people. So we are small.

At present, we are a direct discharger to the river. This activity is regulated under the NPDES program. As part of the requirements of our newly issued permit, last year, we are being directed by the Connecticut water compliance to hook up to the local POTW in North Haven. We are proceeding with this, and the necessary pretreatment steps, at a cost of about $300,000, a substantial sum to us that represents a sizable proportion of our annual profits. This will be accomplished in approximately 10 months, at which time we will become an indirect discharger, and pretreatment legislation and regulations will become very important to us.

The volume of our plant discharge is about 5,000—not million, but 5,000—gallons per day at a maximum. The costs mentioned earlier are for the neutralization system for our acid stream, and an equalization system for our wastewater flow. I might also add that it includes the complete sewer lines around the entire facility, with laterals, et cetera.

We have also recently done a complete analysis of our effluent for priority pollutants and came out very well, generally, on all of these as measured against the proposed categorical standards. One compound came up slightly above the proposed 50 parts per billion standard. This gives us a little background and allows me to raise a number of issues I would like to comment on with respect to the proposed organic chemical pretreatment regulations and the need for legislation to provide for local alternatives.

One, we question whether reliable test results can be achieved at levels as low as 20 to 50 parts per billion in attempting to set and enforce a standard. Detectability, coupled with the high cost of monitoring and compliance, is of concern to us, especially when the pollutant is not a local problem.

Two, as I stated, we are a small company and cannot afford to employ a large staff to evaluate technologies, to solve what is not a problem in our local POTW. What I am saying is that it would concern us greatly if we had to spend, perhaps, an additional $500,000, searching for, installing, and operating technologies to reduce the concentration of a pollutant to a limit the necessity of which has not been demonstrated. This scenario might be played out if categorical standards become a reality, without needed legislative flexibility.

Three, we are willing to spend our money on the installation of a system designed to solve problems we know we have, that is, a system to neutralize our acidic effluent and equalize our flow prior to entering the POTW. Local and State authorities are confident that this system will meet the needs of the POTW and the requirements of the Clean Water Act.

In conclusion, we agree with SOCMA and others that a more economical and environmentally sound approach for Humphrey Chemical and others like us would be through compliance with locally developed standards. Since many of these local pretreatment programs are now in place or nearing completion, we do not believe that authorizing alternative local pretreatment systems will be as resource intensive, or introduce significant delays in implementation, as was suggested 2 days ago before this Subcommittee by the EPA Administrator William Ruckelshaus.

We think this approach will do the job of achieving the goals of the Clean Water Act in a more efficient manner.

Finally, SOCMA would like to make one brief point based upon Administrator Ruckelshaus' testimony. We agree with Mr. Ruckelshaus that Congress should insure that FDF variance provisions be part of pretreatment regulations to insure that a mechanism is available to refine national technology-derived regulations as applied to individual plants. However, that mechanism is not a substitute for authorizing local pretreatment programs. We would like to submit a supplemental statement addressing the role of FDF variances.

Again, I would like to thank you for the opportunity to express our views.

Mr. ROE. We thank you for your testimony. I think it is important that you do roundout some observations on an industrywide basis of the FDF issue. I think that is a terribly important one, and that is going to be a key issue here.

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Let me ask you this question, because we ran into this once before. Let us take your company. When your company was directed, if you like or you discussed with the local people and you said, "You have got to do certain things as far as your permits are concerned," and now you express that you are going to expend some $300,000 or whatever in that direction, to put in and refine your pretreatment equipment, basically, right?

Mr. HUMPHREY. Right.

Mr. ROE. And you spoke to the issue of a 5,000 gallon per day effluent, which is really your waste at that point—is that point—is that a fair commentary to make?

Mr. HUMPHREY. Yes.

Mr. ROE. You dispose of that in some other manner.

Mr. HUMPHREY. Yes.

Mr. ROE. Now, having said that, your concern is, at least as I understood it, that you have to go out to your folks in your operation, in your company, and you have to find out what kind of technical equipment should we install, because none of it is the same, in the main, in any plant. There may be some stereotype or some proprietary equipment in certain areas, but there is nothing that would necessarily handle a whole system if you had a large divergence of products that you are manufacturing, or producing. In other words, they are not something you can just take off the shelf, necessarily, to solve that problem.

Mr. HUMPHREY. That is right.

Mr. ROE. Because you have multiple wastes involved and multiple product categories involved.

Mr. HUMPHREY. Right.

Mr. ROE. I am leading to a point. Now, therefore, the agency, through the permit process, says to you, "This is what we observe in your category of waste. Now, we want you to correct that and achieve these particular goals"—so many parts per million, reduce it, and soforth. And therefore, then, you have to go on the marketplace and see if you can find either a consulting engineer or a manufacturing engineer who is going to say to you, "Well, we think this will do the job."

Now, the question I am leading to. EPA does not say to you what type of equipment. They are simply interested in the results, regardless of the cost, or whatever the case may be—and I am not saying that unkindly to EPA——

Mr. HUMPHREY. Right.

Mr. ROE. Isn't that the process that is followed, basically?

Mr. HUMPHREY. Yes; we have seen very little, as far as published information about various types of systems, that will solve some of these problems.

Mr. ROE. So that, for smaller concerns, which are the heart of the manufacturing process in this Nation, we are coming back and saying there is not any resource, for want of a better word, where you can go to and see the latest technology available in this whole field.

Mr. HUMPHREY. That is correct.

Mr. ROE. The reason I ask that is we had a case in one of my big cities where one of our smaller firms—which is a fine firm, it had 120 employees, and they were excellent—they had an air pollution

problem. And they went out and they checked with the State, and they checked with the Federal people and the whole bit, went through the drill, took 9 months of intensives, sincerity of purpose and action, and designed a system out that cost them $900,000 to correct it. And they were willing to go ahead and spend the $900,000. And then they took the bundle of plans down to the State and said, "OK, here is what we are going to do. This is what the manufacturer's observations are as far as removal of colloidal suspensions. This is what the equipment is going to cost. Give us a permit for the equipment."

And the agency came back and said, "Hey, we are not approving the equipment. We want to know what your ambient results are going to be so you can put any equipment that is going to achieve that goal in."

The company had no guarantee. There was no timeframe in putting the equipment in, to remove the material, so they literally stopped, they concluded the operation. It was not worth that kind of an investment to them.

So basically, what I am trying to get into this record, what you are fundamentally saying is that where small manufacturers are involved, you are given a set of criteria to meet, and you are on your own, then, to be able to provide the methodology and the equipment and whatever the expenditure may be to do that; is that a correct assumption?

Mr. HUMPHREY. That is correct, and add to that that, given the opportunity to participate in a local alternate approach other than having to achieve XYZ categorical standards, would help small chemical companies, particularly small chemical companies.

Mr. ROE. Well, if the gentleman would yield on that, part of the concern, obviously, of the committee in the overall process is that the sincerity of purpose in the efforts from the Humphrey Company may be fine, but is it a point of trust, perhaps?

Suppose, for example, some of the local communities do not really establish anything that is of substance.

Mr. HUMPHREY. I think we in SOCMA would take the position with respect to that kind of thing that if the governing authority, whoever it might be, did not feel that the POTW could handle adequately the problem of its users, then there probably would be a situation where they would have to go to categorical standards. But at least the option, we believe, should be there.

Mr. ROE. And I would think that if you met the requirements of the permit, and you submitted the—or, should EPA have the responsibility, either at regional level or Federal level, to approve that equipment, and with some kind of guarantee that when it is approved and you have made the investment, that you are not going to have to come back 6 months later and do something else. That is your concern, isn't it, basically?

Mr. HUMPHREY. Yes, sir.

Mr. ROE. I just wanted to get that on the record.

I have no further questions—Mr. Goldberg.

Mr. GOLDBERG. Mr. Chairman, I would just like to add for the record that, with respect to the Synthetic Organic Chemical Manufacturers Assoc., one easy way of understanding our members is they synthetically produce what Mother Nature produces across-

the-board, and we can have approximately 5,000 products represented throughout our membership.

Mr. ROE. Let me ask you this. In your formal membership, is it nationwide?

Mr. GOLDBERG. It is predominantly in the Northeastern United States, but we have members with plants throughout the country.

Mr. ROE. What would you say for the record, if you know, or could you provide for the record, not only what your membership would be, but I think it would be helpful to us to know what would the membership be in your organization—how many companies, I am speaking of—what the average or total employment would be, and what would that be throughout the Nation.

You see, there is an economic base you are speaking to, which is a very important base, and you are providing intermediate chemical processes to other manufacturers, is what it amounts to; am I correct in interpreting that?

Mr. GOLDBERG. Yes.

[The following was received for the record:]

SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, INC.,
Washington, D.C., December 27, 1983.

HON. ROBERT A. ROE,
Chairman, Subcommittee on Water Resources, Committee on Public Works and Transportation, U.S. House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: Enclosed, in accordance with the request made during SOCMA's November 17, appearance is a supplemental statement on EPA's proposal to amend the Clean Water Act to allow the issuance of "fundamentally different factors" (FDF) VARIANCES NOTWITHSTANDING THE DECISION IN *National Association of Metal Finishers* v. *EPA*

As emphasized in SOCMA's supplemental statement, FDF variances and the alternative local pretreatment programs as proposed by SOCMA and others address two distinctly different types of problems and both are needed. We note with interest that Administrator Ruckelshaus, in supporting the FDF variance amendment, emphasized that the availability of the FDF variance procedure resulted in cost savings to EPA in developing national regulations because consideration of the unique circumstances of individual industrial facilities could be considered in the variance process. SOCMA believes that, for similar reasons, there might be administrative economies from the adoption of a statutory program for alternative pretreatment programs.

Also included herein is a characterization of SOCMA's membership as it relates to the national economy and, in particular, innovation in the chemical industry.

SOCMA is a non-profit trade association representing over 100 organic chemical companies with annual organic chemical sales under $30,000,000. The members of SOCMA produce more than 5,000 distinct synthetic organic products which are primarily intermediates and finished chemicals for industrial use. A list of the member companies was attached to SOCMA's testimony of November 17.

Many of the products produced by SOCMA's members are speciality intermediate organic chemicals that have application as dyes, pigments, medicinals, flavors and perfume materials, plastics and resin materials, rubber-processing chemicals, surface-active agents, pesticides and related products, and as miscellaneous end use chemicals. These materials find diverse applications in such commonly known products as soap, denim jeans, aspirin, cosmetics, perfumes, and motoroil, as well as, lessor known products for use by the petroleum industry as standards to ensure the consistency of oil products, and solvents used in the electronics industry to quaranty the cleanliness of computer chips. These products play a vital role in the nation's economy and have been found as far afield as main street and outer space.

Many of the more exotic materials, that find applications in America's emerging high technology industries, are the product of innovations developed by small chemical manufacturers which specialize in low volume production. Studies conducted for EPA of the Premanufacture Notifications (PMNs) submitted by firms with less than $100 million in sales (the smallest sales category studied) indicate that sixty-two percent of small business PMNs are for production volumes less than 10,000 kg per year. Thirty-one percent of small business PMNs are for production

volumes of less than 1,000 kg per year. The costs of submitting a PMN are very high in relation to the expected revenues of a low-volume chemical in the initial stages of commercialization. Similarly, it must be assumed that the impacts of other regulatory programs, such as Pretreatment, have the same or greater inhibiting effect on the introduction of new low volume speciality chemicals. Additionally, as the table below illustrates, the value of chemical products produced in the synthetic organic chemicals industry tend to be low in relation to the volume of production thus limiting the degree to which there is flexibility in assuming additional costs.[1]

Organic chemicals	1981 production (pounds)	1981 sales value
Grand total	217,339,092 lbs.	$52,000,000
Cyclic intermediates	45,323,048 lbs.	7,436,562
Dyes	229,670 lbs.	772,737
Organic pigments	75,795 lbs.	415,320
Medicinal chemicals:		
Cyclic	180,260 lbs.	1,144,400
Acyclic	64,442 lbs.	54,292
Flavor and perfume materials:		
Cyclic	93,136 lbs.	157,708
Acyclic	71,427 lbs.	93,887
Plastics and resin materials:		
Cyclic	11,729,680 lbs.	6,836,908
Acyclic	28,871,340 lbs.	10,225,361
Rubber-processing chemicals:		
Cyclic	246,268 lbs.	270,934
Acyclic	33,360 lbs.	27,419
Elastomers (synthetic rubber):		
Cyclic	2,487,145 lbs.	848,554
Acyclic	2,362,312 lbs.	1,656,542
Plasticizers:		
Cyclic	1,458,323 lbs.	662,474
Acyclic	407,216 lbs.	271,159
Surface-active agents:		
Cyclic	1,229,201 lbs.	366,860
Acyclic	3,849,007 lbs.	1,109,659
Pesticides and related products:		
Cyclic	1,012,429 lbs.	3,503,886
Acyclic	417,646 lbs.	1,148,496
Miscellaneous End-Use Chemicals and Chemicals Products:		
Cyclic	3,887,814 lbs.	701,512
Acyclic	18,270,464 lbs.	3,273,682
Miscellaneous cyclic and acyclic Chemicals:		
Cyclic	2,380,733 lbs.	989,586
Acyclic	92,658,296 lbs.	10,754,816

The synthetic organic chemical manufacturing industry has a far greater impact on the national economy than its size would indicate. This is due to the fact that the low volume speciality chemicals produced by this industry find specialized applications throughout American industry for which there are often no substitutes. As the proceeding two examples illustrate the industry is extremely vulnerable to production cost increases. SOCMA's comments to the Environmental Protection Agency on its proposed standards for the organic chemicals, plastics and synthetic fibers category (copy attached), focus on this point as well, and illustrate the regulatory problems confronting the industry under the Clean Water Act. SOCMA believes that Congress must re-assert its intent to mitigate small business economic impacts resulting from the regulation of the discharge of industrial effluents into surface waters or publically owned treatment works. SOCMA believes that by providing a statutory option to local authorities to develop and implement local pretreatment programs it will substantially reduce the cost of compliance for small businesses while providing equivalent protection of the environment and public health.

[1] Synthetic Organic Chemicals/United States Production and Sales, 1981, pp. 4-6 (United States International Trade Commission, Publication 1292).

SOCMA is hopeful these additional comments concerning FDF variances and a characterization of the Synthetic Organic Chemical Manufacturing Industry will be helpful to you in your deliberations on this important matter.

Sincerely,

RONALD A. LANG,
Executive Director.

SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, INC.,
Washington D.C., January 6, 1984.

Hon. ROBERT A. ROE,
Chairman, Subcommittee on Water Resources, Committee on Public Works and Transportation, U.S. House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: On December 27, 1983 SOCMA sent to you a letter containing responses to questions you raised at the November 17, 1983 hearings on the Clean Water Act. I wish to bring to your attention an unfortunate error in that letter contained in the fourth paragraph of the first page. The first sentence of that paragraph reads:

SOCMA is a non-profit trade association representing over 100 organic chemical companies with annual organic chemical sales under $30,000,000.

This sentence should be amended to read as follows:

SOCMA is a non-profit trade association representing over 100 small, medium and large organic chemical companies. *Sixty percent of SOCMA's members have annual organic chemical sales below $50,000,000; fifty percent of SOCMA's members have annual organic chemical sales below $30,000,000.*

SOCMA apologized for any inconvenience created by this error and is hopeful that this clarification will be helpful to you in your deliberations on this important issue.

Sincerely,

RONALD A. LANG,
Executive Director.

Mr. ROE. And therefore, you are an integral part of each—they may be small companies, but by the same token, you are a vital part. It is like part of the organs of the body; you are a vital part to the functioning of the entire chemical industry. Is that a fair comment?

Mr. GOLDBERG. I would even go to emphasize that. Mr. Humphrey produces several products for which he is the sole producer internationally.

Mr. ROE. OK. Therefore, what I think we have to get across, and what I am trying to get in this record, is because we have 1 or 2 or 10 or 50 or 1,000 small companies, and when we talk about their economic ability to achieve the goals that Federal is attempting to say, that you cannot just use their size to judge their import to the whole economic complex of the Nation, is what I am trying to get at.

Mr. GOLDBERG. We would emphasize that point.

Mr. ROE. Because some people come back and say—and this is cruel, I suppose, and nonresponsive—but some people have come back and said, "Well, if 10 percent of the people in that industry lose out because they cannot meet the goals, then the goals are higher than the needs of those 10 companies, and therefore, they will just have to fall by the wayside."

But I think it is important to come back and say in the category of your industry that it is a vital catalyst if you like to the whole chemical industry of the Nation. Is that a reasonable point to make?

Mr. HUMPHREY. It certainly is, and I would add to that that the niche for the small chemical company is the manufacture of some

needed chemical or chemicals that the larger fellow simply does not want to—because of economic reasons or whatever—does not want to do himself. And the larger chemical companies very much depend on the little guys to produce these needed substances, even though the volume might be quite small.

Mr. ROE. Sure. That is the point I wanted to make. OK. I have no further questions. I think your testimony is succinct and to the point, and we certainly will give every attention to it.

We thank you for being with us this morning.

Mr. HUMPHREY. Thank you, Mr. Chairman.

[Subsequent to the hearing, the following supplemental statement from SOCMA was received for the record:]

SUPPLEMENTAL STATEMENT OF THE SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION

EPA Administrator William Ruckelshaus, in testimony before the Water Resources Subcommittee on November 15, 1983, proposed that Section 301(1) of the Clean Water Act be amended to confirm EPA's authority to grant "fundamentally different factor" ("FDF") variances from effluent limitations guidelines and national categorical pretreatment standards for priority pollutants. EPA's proposal was necessitated by the decision in *National Ass'n of Metal Finishers* v. *EPA*, 19 E.R.C. 1785 (2d Cir. 1983), invalidating EPA's regulation providing for FDF variances from pretreatment standards for priority pollutants.

SOCMA believes that the Court's decision was in error and supports EPA's recommendation that the Congress ensure that FDF variances are avialable.

FDF VARIANCES ARE NOT A SUBSTITUTE FOR ALTERNATIVE LOCAL PRETREATMENT PROGRAMS

SOCMA believes it very important that it be clearly understood that FDF variances are not a substitute for the alternative programs advocated by SOCMA and others in testimony before the subcommittee. The function of the FDF variance mechanism is entirely different from the function of alternative local pretreatment systems. As discussed further below, the FDF variance process allows a technology-derived national categorical pretreatment standard to be determined in light of the special circumstances of a particular industrial user of a POTW which affect the cost or non-water quality environmental impact of that industrial user's compliance with the national standard. In contrast, Congressional authorization of alternative local pretreatment programs would allow local POTWs to develop pretreatment requirements tailored to the operational and environmental needs of that POTW. Those requirements would then be applied in lieu of the national pretreatment standards as promulgated by EPA or as they might be modified through the FDF variance process.

Both types of provisions are necessary to ensure that pretreatment requirements adopted under the Clean Water Act are environmentally and cost effective.

FDF VARIANCE PROVIDE ESSENTIAL FLEXIBILITY IN THE DETERMINATION OF TECHNOLOGY-DERIVED STANDARDS AND LIMITATIONS

FDF variances are not expressly provided for in the Clean Water Act. Rather FDF variances were determined by the Supreme Court in *E.I. DuPont De Nemours & Co.* v. *Train*, 430 U.S. 112 (1977), to be a necessary adjunct to the nationally uniform effluent limitations guidelines promulgated by EPA for broad categories of industry. As stated by the Court, the Act authorizes EPA to promulgate national regulations "so long as some allowance is made for variations in individual plants. . . ." 430 U.S. at 128.

While the Supreme Court was dealing with national effluent limitations guidelines implementing the 1977 BPT requirement, its view that the national regulations must be tempered with a "safety valve" is equally applicable to effluent limitations guidelines implementing BAT and pretreatment standards. Administrator Ruckelshaus in his testimony succinctly stated why the "FDF varinance procedure is an essential adjunct to the national rulemaking process":

In going through the extraordinarily complex process of a national rulemaking, the FDF determination procedure permitted EPA to focus its data gathering and

analysis on the more typical facilities and defer to subsequent proceedings those plants with unique features. . . .

The FDF determination procedure is not a waiver procedure. . . . Rather it is a procedure through which a facility receives an individualized determination of its technology-based effluent requirements. . . .

The need for administrative flexibility in applying national regulations to individual facilities is well illustrated by EPA's March 1983 proposed regulations for the Organic Chemicals and Plastic and Synthetic Fibers Category. 48 *Fed. Reg.* 11827 (March 21, 1983). By EPA's estimates, the proposed pretreatment standards and BAT effluent limitations guidelines would cover up to 2,100 individual industrial facilities in an industry in which 25,000 commercial products are made by a wide variety of processes. Even if EPA were to narrow the scope of the regulations upon promulgation, there would be a need to refine the requirements as applied to plants with unique features which EPA could not adequately consider in a practical rulemaking process.

The decision of the Court of Appeals for the Third Circuit, however, would eliminate that flexibility. The court viewed the 1977 Amendments to the Act as precluding any variance provision for priority pollutants. 10 E.R.C. at 1799–1801. SOCMA believes that the court misconstrued the Congress' intent and that the Congress should confirm the necessity, as determined by the Supreme Court in *DuPont*, for the inclusion of a variance provision as part of nationally applicable regulations.

At the same time, the Congress should endorse Administrator Ruckelshaus' policy statement that, while the FDF variance provision does not constitute a "loophole" in the application of national regulations, it is an essential mechanism for "consideration of individual petitions claiming unique factors." In the past, EPA has been most reluctant to consider petitions for FDF variances. Indeed, EPA has approved only four variance requests.

One of the reasons for EPA's general resistance to variance requests has been the possible administrative burden of considering such requests. However, as Administrator Ruckelshaus made clear in his testimony, the existance of a FDF variance procdure allows "major cost savings and reductions in time necessary for guideline development." It would be most unfortunate if EPA, having concluded the variance procedure reduces the administrative and cost burden of regulation development, were then to cite the administrative and cost burden of processing variances as a reason for a restrictive variance policy.

SOCMA believes that Administrator Ruckelshaus' statement to the subcommittee reflects a balanced view of the role of FDF variances and a change in EPA's prior restrictive policy. The Congress should endorse that policy change.

socma SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, INC.
1075 CENTRAL PARK AVENUE, SCARSDALE, N. Y. 10583 • (914) 725-1492

August 17, 1983

Mr. E. H. Forsht
Effluent Guidelines Division (WH-552)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

Attention: EGD Docket Clerk, Organic Chemicals, Plastics and Synthetic Fibers Industry (WH-552)

Dear Mr. Forsht:

Enclosed are an unbound original and two bound copies of the comments of the Synthetic Organic Chemical Manufacturers Association, Inc. ("SOCMA") on EPA's proposed regulations establishing effluent limitations guidelines and pretreatment standards for the organic chemicals, plastics and synthetic fibers industry (48 Fed. Reg. 11827 (March 21, 1983)).

SOCMA has a long-standing concern with the pretreatment program, and its comments focus primarily on those proposed standards. Many of SOCMA's members are small firms; more than half of its member companies have annual sales of less than $50 million. In addition, most of SOCMA's members, whether large or small companies, operate small plants. SOCMA is particularly concerned about these regulations as applied to small firms and small plants in the organic chemicals and plastics and synthetic fibers industries.

After careful examination and analysis of EPA's technical and economic support documents, SOCMA has concluded, for reasons which are set forth in detail in the enclosed comments, that the Agency's basis for the proposed pretreatment standards, and for the proposed effluent limitations guidelines, is totally inadequate. This is especially true insofar as the proposals apply to small plants. The proposed regulations must therefore be reconsidered, reevaluated and revised.

In reconsidering its proposal, EPA should thoroughly examine the following matters and possible alternatives which are of special concern to small plants:

- A more precise and realistic identification of industry segments and pollutants which pose a significant national pretreatment problem and exclusion of those which do not.

- Consideration of flow, land availability, and other pertinent factors as a basis for alternative standards or exclusions.

- Alternative standards based upon consideration of the cost-effectiveness of different pretreatment technologies.

- Alternative standards or exclusions based upon a sound assessment of the economic impact of different levels of pretreatment.

- Application of the pretreatment standards only to plants which produce priority pollutants regulated by the pretreatment standards as a product or commercial by-product or which use such regulated priority pollutants as raw materials.

- Deferral of regulations for industry segments for which a sound technical and economic record, with adequate opportunity to comment, cannot be established within EPA's schedule for these regulations.

The scope and content of final pretreatment regulations and standards must reflect a thorough analysis, founded on adequate and meaningful data, of their achievability and economic impact with respect to small plants. It is SOCMA's belief, as more fully set forth in the enclosed comments, that EPA's proposed regulations fall far short of fulfilling this requirement.

SOCMA appreciates the opportunity to participate in this rulemaking proceeding. Please do not hesitate to contact me or Tom Goldberg, Manager, Environmental Affairs, in our Washington Office if you have any questions regarding SOCMA's comments on the proposed regulations.

Sincerely,

Ronald A. Lang

Ronald A. Lang
Executive Director

Enclosures

COMMENTS OF THE

SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION

ON PROPOSED REGULATIONS:

EFFLUENT LIMITATIONS GUIDELINES,

PRETREATMENT STANDARDS, AND NEW SOURCE PERFORMANCE STANDARDS

FOR THE ORGANIC CHEMICALS AND

PLASTICS AND SYNTHETIC FIBERS CATEGORY

(48 FED. REG. 11827 (MARCH 21, 1983))

August 17, 1983

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EFFLUENT LIMITATIONS GUIDELINES,
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FOR THE ORGANIC CHEMICALS AND
PLASTICS AND SYNTHETIC FIBERS CATEGORY
(48 FED. REG. 11827 (MARCH 21, 1983))

INTRODUCTION

The Synthetic Organic Chemical Manufacturers Association (SOCMA) is a nonprofit trade association of 100 manufacturers of organic chemicals and allied products. A current list of SOCMA's members is Attachment A.

SOCMA has had a long interest and involvement in implementation of the Clean Water Act. A primary focus of SOCMA has been on the requirements of the Act for pretreatment of industrial waste discharged to publicly owned treatment works (POTWs). In testimony before the House Public Works Committee on the then pending Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500), SOCMA urged the Congress to ensure that the pretreatment provisions would provide effective protection for POTWs and the nation's waters while avoiding redundant treatment requirements for industrial users of POTWs. Those objectives were adopted by the Congress and should be a primary reference point for evaluation of administrative proposals relating to pretreatment of industrial waste. A Legislative History of the Federal Water Pollution Control Act Amendments, at 800 (1974) (cited as "Leg. Hist. FWPCA").

EPA's development and implementation of a pretreatment strategy under the Act has been fraught with difficulty. In recognition of the difficulties encountered by the Agency, SOCMA submitted to the Agency on November 20, 1981, a proposal for a comprehensive administrative and legislative reevaluation of the pretreatment program. SOCMA's presentation is Attachment B.

These comments are in furtherance of SOCMA's policy of providing constructive input to the Agency to help achieve the goal of an environmentally and economically sound pretreatment program. The report of Peat, Marwick, Mitchell & Co. entitled "Comments on the Small Establishment and Small Business Aspects of EPA's Cost and Economic Impact Analysis and Regulatory Flexibility Analysis Decision" (cited as "PMM Report") is submitted as part of SOCMA's comments.

SOCMA'S INTEREST

SOCMA's members are affected by the full range of regulations proposed by the Agency. However, as noted above, SOCMA has a long-standing concern with the pretreatment program, and its comments focus primarily on those proposed standards.

SOCMA is particularly concerned about the regulations as applied to small organic chemical and plastic and synthetic fiber plants. Most of SOCMA's members, whether large or small companies, operate small plants. Many of SOCMA's members are

small companies; approximately 55 member companies have annual sales of less than $50 million.

Small plants in the organic chemicals, plastics and synthetic fibers industries[1/] tend for a number of reasons to be indirect rather than direct dischargers. They are typically located in urban areas where land for onsite wastewater treatment systems designed for direct discharge is generally either not available or very expensive. In addition, such areas as a rule have POTWs which will accept and treat industrial wastewater. Joint treatment of domestic and industrial wastes is cost-effective. The user charges and other direct and indirect costs associated with discharging wastewater to a POTW are generally less than the cost (amortized capital plus operation and maintenance) of an onsite treatment system designed for direct discharge, particularly for small plants which cannot take advantage of economies of scale in treatment technologies.

As a result of the foregoing factors, a high proportion of small plants in the organic chemicals, plastics and synthetic fibers industries are indirect dischargers. Small

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1/ In its economic analysis, EPA uses the term "establishment" to mean manufacturing operations at a particular location and "plant" to mean a portion of an "establishment" which employs a single process. PMM Report, at 6. The industry refers to a "plant" as meaning manufacturing operations at a particular location. In these comments, SOCMA uses "plant" in its usual industrial meaning. The Peat Marwick Report uses EPA's term "establishment."

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plants, as a discrete subclass of production facilities within the industry, are thus more likely to be subject to the proposed pretreatment standards than large plants.

Such plants more often than not conduct batch operations rather than continuous production processes. EPA has aptly described the type of facility to which SOCMA's primary concern runs:

> Most of the small plants are batch process plants that make only low-volume chemicals. Such a plant may produce a total of 1,000 different products with 70 to 100 of these being produced on any given operating day. Manufacturing plants that produce large quantities of specific chemicals often incorporate fewer unit processes than smaller plants that generate a large number of products. A representative high-volume plant may produce a total of 45 high-volume products with an additional 300 lower-volume products.2/

It is imperative that EPA give specific and careful consideration to application of the proposed regulations to small plants. The special characteristics of a small plant must be considered regardless of whether the plant is owned by a small, medium or large company. Each such small plant is a technically and economically distinct unit and must be considered by EPA as such.

2/ Development Document for Proposed Effluent Limitations Guidelines and New Source Performance Standards for the Organic Chemicals and Plastics and Synthetic Fibers Industry: Volume II (BAT), at III-12 (hereinafter "BAT Dev. Doc.").

SUMMARY OF SOCMA'S POSITION

Pretreatment Issues

SOCMA believes that EPA must reconsider the proposed pretreatment standards for the organic chemicals, plastics and synthetic fibers industries and revise its proposed regulations to ensure that they are supported by adequate data and are consistent with the Congress' intent:

1. EPA's review of these proposed regulations should be part of a comprehensive evaluation of its pretreatment programs.

* EPA must recognize that categorical pretreatment standards are only one of two elements of the pretreatment strategy authorized by the Clean Water Act. The second element of that strategy is the development of local POTW pretreatment programs. The Congress clearly intended that the categorical pretreatment standards be used only to remedy identified significant national pretreatment problems. EPA has not limited the proposed regulations to identified, significant national problems -- for example, EPA has included 9 pollutants in the pretreatment standards on the basis of the absence of data from POTWs.

* EPA must revise its general pretreatment standards, particularly the removal credits regulation and the combined waste stream formula, to ensure that the categorical standards are equitable, effective and

enforceable. However, the removal credit regulations must not be viewed as a justification for promulgating categorical pretreatment standards which do not address a significant national problem or for which there is an inadequate technical or economic basis.

2. EPA radically expanded the scope of its regulatory program from a limited number of identified major product/process segments of the industries to hundreds of unidentified plants, most of them small, manufacturing a wide range of small-volume chemicals.

* For more than a decade, EPA's data gathering and regulatory programs focused on a limited number of product/processes used in the organic chemicals, plastics and synthetic fibers industries. By EPA's estimates, approximately 550 plants were included within the scope of that program.

* In 1982 EPA decided to abandon the product/process approach to development of regulations for subcategories within the industries, but retained its focus on the product/processes which it had studied. Then, at some unidentified time in the several weeks before the March 21 proposal, EPA decided to extend the regulations to any plant engaged in chemical synthesis. By EPA's estimates, up to 1,500 additional plants were included in the proposed regulations as a result of this change in direction. EPA is unable to identify many of these additional plants.

- Many of these additional plants are small plants and users of POTWs. EPA's data base, by its own decisions in establishing priorities, is limited almost entirely to large plants, mostly direct dischargers, manufacturing high-volume products.3/

- SOCMA agrees with EPA that the product/process approach was unworkable. However, abandonment of that approach did not justify the subsequent decision to expand the regulations far beyond a scope that can be supported by EPA's data base.

3. By radically expanding the scope of the regulations to encompass hundreds of small plants not previously included in the regulatory program, EPA has placed an unreasonable burden on operators of small plants desiring, in good faith, to evaluate and comment on the proposal.

- EPA has an obligation to compile and evaluate data for proposed regulations which reasonably supports the proposal and to provide that information to the potentially regulated community in a manner that will allow informed response to the proposal. In this instance, EPA provided to operators of small plants virtually no information which is useful to them in commenting on the proposed pretreatment standards.

3/ EPA's one effort to develop, for subsequent regulations, information on small plants producing low-volume chemicals was terminated after a limited priority pollutant screening study.

• As a result, operators of small plants desiring to comment would have to develop, within a period of a few months, information which EPA has not sought in the course of a decade long, multi-million dollar regulatory program. Such information includes quantitative information on the 81 priority pollutants for the "not-plastics only" subcategory and the 102 priority pollutants for the "plastics only" subcategory which EPA considers candidates for pretreatment standards, identification and evaluation of technologies to reduce discharges of such substances, and evaluation of the cost and business impact of the proposed regulations.

• For many, if not most, small plant operators, EPA's "eleventh hour" change in direction effectively precludes any meaningful opportunity to comment on the proposed regulations.

4. <u>EPA's data do not support EPA's estimate of priority pollutant discharges from organic chemical, plastic, or synthetic fiber plants using POTWs.</u>

• EPA's estimate of the quantity of toxic pollutants (174 million pounds per year) discharged by users of POTWs was extrapolated from a data base which does not include the plants which would be subject to the pretreatment standards.

- Available information indicates that EPA's estimates are exaggerated.

- EPA's estimates of the pollutant reduction benefits of the pretreatment regulations must be totally reworked.

5. <u>EPA should revise its pollutant selection process to include only pollutants which represent a significant national pretreatment problem</u>.

- The data base (screening studies, verification study, and five-plant study) from which EPA identified 108 priority pollutants as candidates for regulation is biased in that the screening studies may have identified pollutants as present when in fact they were not and the verification and five-plant studies intentionally were directed at plants where significant levels of priority pollutants were expected to be present.

- EPA has not substantiated that effluents from organic chemical or plastic or synthetic fiber plants contribute to a national problem of sludge use or of interference with POTW operations.

- EPA's use of a "BAT comparison" to define the "pass through" of priority pollutants is not an appropriate approach to a determination of whether a priority pollutant is compatible with POTW treatment. Such a test is particularly unacceptable when, as for these regulations, the BAT technology is biological treatment and the

resulting regulations have no reasonable relationship to environmental protection.

* SOCMA urges EPA to consider the alternative approach proposed by CMA to determine whether priority pollutants occur significantly in industrial wastewater and in POTW influents and whether these pollutants are adequately treated. In making this evaluation, SOCMA recommends that EPA separately analyze available data for small plants and for indirect dischargers. Further, EPA should use all available information in making its determinations, including data generated by POTWs in developing local POTW programs.

6. EPA must identify and evaluate available pretreatment technologies.

* EPA admits that it has not evaluated any pretreatment technologies and instead has used the BAT data base to establish the pretreatment standards. Nineteen of the 21 plants in EPA's data base employ biological treatment.

* Biological treatment redundant with POTW treatment is a wholly unacceptable pretreatment technology model and basis for the pretreatment standards.

* In evaluating pretreatment technologies, EPA must consider the circumstances of small plants, including the fact that many small users of POTWs are located in urban areas with limited land for treatment facilities.

7. <u>EPA's analysis of the economic impacts of the proposed pretreatment standards upon small plants lacks any credible basis and must be reworked.</u>

- EPA's estimates of compliance costs are founded on tenuous and speculative extrapolations from very limited data using unverified models.
- The Agency's closure analysis uses an inappropriate across-the-board closure criterion and employs an ill-conceived methodology which predetermines the result of few predicted closures of small plants.
- The compliance cost and closure analyses are founded on data which are derived almost solely from large plants and do not reflect variations in small plant operations.
- Each of these analyses also employs averaging techniques which mask disproportionate impacts on small plants.
- Contrary to EPA's extrapolation-based conclusions, what small plant data the Agency does have shows that both compliance costs and closure impacts are likely to be disproportionately higher for small plants.
- In addition, compliance cost estimates submitted to SOCMA and CMA by member companies confirm that small plants are likely to experience substantially higher economic impacts than large plants.

* The Agency must conduct a new economic analysis which evaluates and meaningfully considers the probable disproportionate impacts the proposed pretreatment standards will have upon small plants within the organic chemicals, plastics and synthetic fibers industries.

8. EPA has failed to comply with the clear requirements of the Regulatory Flexibility Act. The Agency's determination that it was not obligated to prepare a regulatory flexibility analysis of the proposed effluent limitations guidelines and pretreatment standards was patently erroneous.

* EPA arbitrarily rejected the Small Business Administration size guidelines for small entities in violation of the Act and its own regulatory flexibility guidelines.

* The Agency failed to provide any reasonable explanation for its choice of an alternative small entity definition of fewer than 50 employees.

* EPA's determination that the proposed regulations would not impose significant or differential impacts on small entities was based on erroneous cost estimates and a seriously flawed closure analysis with respect to small plants.

* Contrary to EPA's conclusion, the Agency's own data demonstrate that small plants may bear substantial and disproportionate economic impacts as a result of the proposed pretreatment standards.

- Compliance cost estimates submitted to SOCMA and CMA by member companies confirm that small plants are likely to be disproportionately affected by the proposed standards.

- EPA must therefore prepare a regulatory flexibility analysis which considers significant alternatives to the proposed regulations which would minimize the economic impact on small entities. To fulfill this statutory obligation, EPA must acquire new data regarding small plants and analyze the relative impacts of significant alternative approaches to the proposed pretreatment regulations with respect to such facilities.

9. <u>EPA's regulatory impact analysis of the proposed pretreatment standards does not meet the requirements of Executive Order 12291</u>.

- The RIA fails to describe or analyze <u>any</u> alternative regulatory approaches.

- The RIA analyses of net benefits and cost effectiveness fail to support issuance of the proposed pretreatment standards.

- EPA cannot take final action on the proposed regulations until it has analyzed alternatives which would reduce small plant impacts and explained why such alternatives could not be adopted. In addition, EPA must carry out a completely new assessment, based upon actual data

relating to small plants, of the relative benefits and cost-effectiveness of the proposed pretreatment standards as applied to such facilities.

SOCMA's Recommendations for Reconsideration and Revision of the Proposed Pretreatment Standards

The persistent flaw in the proposed pretreatment regulations, particularly as applied to small plants, is that pretreatment was a secondary, at best, consideration to the BAT effluent limitations guidelines in EPA's regulatory development process, and large numbers of small plants were brought within the scope of the regulations at the last minute with virtually no consideration. The result is that EPA's data base is wholly inadequate to support the proposed pretreatment regulations, and the proposed regulations are simply arbitrary, particularly as applied to small plants.

SOCMA understands that EPA plans to augment its data base prior to promulgation of final regulations. No doubt there is need for improvement in the data base, most especially for small plants. SOCMA, however, strongly urges EPA to consider two important questions as it compiles and reviews that augmented data base:

- In view of the fact that EPA has spent a decade and many millions of dollars in developing a data base intentionally focused on large plants, is it now practical in a short period of time to identify, evaluate, and

resolve the many issues presented by the expansion of its regulatory program to hundreds of small plants for which EPA presently has little or no data?

* If EPA does decide to include small plants within the scope of the regulations, how will it collect and present its augmented data base in such a manner that operators of small plants, for the first time, have an adequate opportunity to comment on the proposals?

As it proceeds, EPA must recognize that it has special obligations and responsibilities to ensure that it has an adequate basis for regulations affecting small plants. All possible alternatives must be explored. Among those which clearly should be explored are:

* A more precise and realistic identification of industry segments and pollutants which pose a significant national pretreatment problem and exclusion of those which do not.

* Consideration of flow, land availability, and other pertinent factors as a basis for alternative standards or exclusions.

* Alternative standards based upon consideration of the cost-effectiveness of different pretreatment technologies.

* Alternative standards or exclusions based upon a sound assessment of the economic impact of different levels of pretreatment.

* Application of the pretreatment standards only to plants which produce priority pollutants regulated by the pretreatment standards as a product or commercial by-product or which use such regulated priority pollutants as raw materials.

* Deferral of regulations for industry segments for which a sound technical and economic record, with adequate opportunity to comment, cannot be established within EPA's schedule for these regulations.

General, BPT, and BAT Issues

For reasons indicated above, SOCMA's comments are focused on the pretreatment standards. However, SOCMA believes that there are serious problems which apply to the proposed regulations generally and to the proposed BPT and BAT regulations more specifically. SOCMA fully concurs with the comments of the Chemical Manufacturers Association (CMA) on these matters. SOCMA considers the following points to be particularly important:

1. Generally Applicable Points

* EPA's failure to clearly and consistently define "process wastewater" has resulted in major uncertanties as to EPA's development of the proposal and its application to particular plants.

• While SOCMA concurs in EPA's use of concentration-based limitations, provisions should be made to allow adjustments in the limitations as applied to plants with higher pollutant concentrations due to implementation of water conservation measures.

2. Analytical and Monitoring

• EPA has yet to promulgate analytical methods as required by Section 304(h) for many of the priority pollutants included in the proposal.

• Pollutant concentration measurements in the parts per billion ranges of the proposed BAT and pretreatment regulations are subject to substantial analytical uncertainty.[4/] EPA has failed to give adequate consideration to this problem of analytical variability in two contexts:

- Notwithstanding analytical variability, EPA has taken measurements in its data base at face value and developed the proposed regulations on the assumption that these measurements accurately reflect pollutant levels in plant influents and effluents. EPA should revise upward

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4/ For example, available round robin testing studies have shown that measurements of a priority pollutant sample with a true concentration value of 50 ppb are subject to a variability factor of 1.48 at a confidence limit of 99 percent. That is, 99 of 100 measurements of the sample would fall within the range of 34 ppb to 74 ppb.

its proposed regulations for each pollutant by an appropriate variability factor (as determined from available data) in order to correct for the range of analytical uncertainty inherent in the underlying data base.

- Because of the inherent uncertainty of measurements at such low concentrations, the measured value of monitoring samples will in many instances indicate noncompliance with a pretreatment standard or NPDES permit effluent limitation when in reality the true value of the pollutant concentration is at or below the level of the standard or limitation. The inevitable occurrence of such "apparent" noncompliances due solely to inherent analytical variability will erroneously expose direct and indirect dischargers to enforcement actions and sanctions under federal or state law and, for indirect dischargers, to potential liability for violations of municipal codes or POTW contracts. In addition, dischargers may incur large costs in continually testing samples in order to demonstrate that "apparent" violations of the standards were in fact due solely to analytical variability. And POTWs will incur unnecessary administrative costs in investigating and evaluating such "apparent" violations. EPA should formally recognize a range of presumed compliance above the level of the proposed standards to take account of the inherent analytical uncertainty of

compliance measurements at such low concentrations. Only measured values above the upper limit of this range should be considered to represent noncompliance with the relevant standards.

- EPA's proposed pretreatment standards and BAT effluent limitations guidelines provide for a four-day average. If EPA intends that to mean a running average of any four consecutive samples, the probability of violations is increased significantly.

- The criterion (no measurement exceeding 10 ppb over a 12-month period) for exclusions from routine monitoring is unnecessarily stringent given analytical variability.

3. BPT

A primary concern of SOCMA with respect to BPT parallels that with respect to the pretreatment standards: EPA's decision to expand the coverage of the regulations was made without a concurrent augmentation of the BPT data base to ensure that it included data representative of small plants. In the absence of data on small plants, EPA assumed, without analysis, that the proposed BPT effluent limitations guidelines were equally achievable regardless of plant size. EPA then extrapolated presumed costs for small plants from a data base which did not include a representative selection of small plants. PMM Report, at 11, 13. Indeed, the formula used by

EPA to extrapolate costs inherently masks the variability or range of costs which could be incurred at small plants. PMM Report, at 14.

SOCMA agrees with CMA that approaches exist for the establishment of BPT effluent limitations guidelines which are more reasonable than the method used by EPA and that broad subcategories are a practical necessity. At the same time, SOCMA emphasizes that EPA's correct decision to abandon its historic product/process approach does not justify expansion of the regulations to cover segments of the industry for which EPA has a nonexistent or inadequate data base.

Other important points regarding the BPT proposal include:

* EPA should not have arbitrarily limited the BPT data base to plants achieving at least a 95 percent BOD_5 removal or a 50 mg/l BOD_5 treated effluent.

* EPA should ensure that the BPT data base does not include plants with NPDES permits and treatment facilities based upon site-specific water quality considerations.

* EPA should review and revise its variability analysis.

* EPA has not given sufficient consideration to the effect of temperature on biological treatment processes.

* The regulations as applied to individual plants must result in NPDES effluent limitations which directly relate to the raw waste load at that plant.

* Even apart from the absence of a representative data base on small plants, EPA's cost-estimation and economic-analysis methodologies are marred by basic factual and theoretical errors.

* EPA has not considered whether the costs in relation to effluent reductions which would result from the proposed BPT regulations can be justified when compared to the costs in relation to effluent reductions from compliance with BPT requirements in existing NPDES permits.

4. BAT

As in the case of the pretreatment and BPT regulations, EPA's decision to expand the scope of the BAT regulations subsequent to its abandonment of the product/process approach has resulted in regulations which overreach EPA's BAT data base. In addition, SOCMA has identified the following issues which EPA should address:

* The data base from which EPA identified 108 priority pollutants as candidates for regulation is biased toward large plants and plants expected to discharge significant levels of priority pollutants. It is not representative of small plants or indirect dischargers.

* Use of the nominal detection level of 10 ppb is an inappropriate indicator of "significance".

* Only metals used in chemical processes should be candidates for national regulation, and the BAT levels for

such metals should be based upon treatment facilities at plants which do use that metal and not upon treatment facilities at plants where the presence of the metal is incidental.

- The only data quantitatively useful in deriving BAT effluent limitations guidelines are GC/MS data from the verification study and the Five-Plant Study. The result is that the data base for the guidelines consists of only 21 plants and that data base is inadequate for nationally applicable regulations.

- The data base is particularly inadequate for small plants since, by design, the 21 plants include only large plants mainly manufacturing high-volume products.

- There are major shortcomings in EPA's variability analysis.

- The use of "generalized plant configurations" is beset with methodological and data deficiencies. As discussed in connection with the pretreatment standards, EPA's approach results in particularly biased and unreliable cost estimates for small plants.

- The BAT closure analysis, which is the same as the pretreatment standard analysis, is seriously flawed and biased against small plants for the reasons discussed in connection with the pretreatment standards.

- EPA has not considered the cumulative impact of the revised BPT effluent limitations guidelines plus the BAT effluent limitations guidelines.

- The cost-effectiveness analysis is not based on either sound cost data or meaningful benefit information.
- EPA has not met its responsibility for identifying and evaluating technologies capable of achieving the proposed BAT levels. And these proposed levels are markedly lower than the BAT levels established by EPA for other industries.

I.

THE CATEGORICAL PRETREATMENT STANDARDS ARE ONLY ONE ELEMENT OF AN EFFECTIVE NATIONAL PRETREATMENT STRATEGY

In its November 1981 recommendations to EPA, SOCMA urged a comprehensive reevaluation of EPA's pretreatment approach which included both legislative and administrative initiatives. However, SOCMA emphasized that, while amendments to the pretreatment provisions of the Clean Water Act were highly desirable, EPA had sufficient discretion under the Act to make significant improvements in its pretreatment program.

SOCMA continues to believe that the Agency should thoroughly assess the improvements in the pretreatment program which it can make administratively. Further, the present proposal for pretreatment standards for the organic chemicals and plastics and synthetic fibers industries should be viewed in the context of such an evaluation.

The two basic elements of the pretreatment program contemplated by the Clean Water Act are national categorical pretreatment standards under Section 307(b) and local pretreatment programs developed pursuant to POTW permits under Section 402(b)(8). Each has its role in the legislative scheme.

The Congress' intent was that the "pretreatment standards established under this section [307(b)] would be national in scope and addressed to the most significant pretreatment problems." Pretreatment problems which are not national in scope were to be addressed by standards adopted by POTWs, and Congress "expected that each manager of a treatment works would provide for such standards." Establishment of categorical pretreatment standards to address POTW problems which are not significant or national in scope would be contrary to the Congressional statement that "[i]t is not intended that private pre-treatment facilities be required as a substitute for adequate municipal waste treatment works." Leg. Hist. FWPCA, at 800.

EPA's evaluation of its pretreatment program and of these regulations should explicitly recognize Congress' intent. More specifically, EPA's pretreatment program should be based on the following:

- Development of national categorical pretreatment standards only for pollutants and for industry segments which represent a significant national pretreatment problem.

- Reconsideration of the provisions of the general pretreatment regulations designed to implement the national categorical pretreatment standards (particularly the combined waste stream formula and the removal credit provisions, with recognition that removal credits were intended by the Congress to be an independent mechanism for the adaptation of national categorical pretreatment standards to the special capabilities of particular POTWs and not an excuse for promulgating categorical pretreatment standards which are not technically and economically sound responses to an identified and significant national problem).

- Recognition of the appropriate and necessary role of local POTWs in addressing problems which are not of national significance by support and implementation of legislation providing for alternative local pretreatment programs or, in the absence of such legislation, use of the NPDES permit pretreatment program requirements to encourage POTWs to address and resolve pretreatment issues of local significance.

SOCMA does not believe that the regulations as proposed adequately reflect these principles. Instead, the proposed pretreatment standards reflect an apparent continuing adherence to a philosophy that national categorical pretreatment standards are the dominant, if not the only, mechanism for

regulating industrial users of POTWs, SOCMA firmly believes that EPA's undue reliance on this one element of the pretreatment program envisioned by the Congress is a major cause of an Agency proposal which --

- Would regulate pollutants on the basis of data and a screening test (the "BAT removal comparison" test) which are inadequate to demonstrate that those pollutants represent a significant national problem.
- Would impose pretreatment standards in the absence of POTW treatment data.
- Would impose pretreatment standards on the industry as a whole without a sufficient data base to identify industry segments which may pose a problem of national significance.
- Would impose pretreatment standards without identification and evaluation of a technology to meet these standards other than biological treatment which would duplicate POTW treatment.
- Would impose pretreatment standards without an adequate data base to evaluate their environmental benefit or economic impact.
- Would rely on the removal credits provision of the general pretreatment regulations to justify and ameliorate the impact of arbitrary categorical pretreatment regulations.

- Fails to recognize the ability and responsibility of EPA, the states, and local POTWs to identify and remedy through local pretreatment programs environmental problems resulting from industrial users of POTWs which are not of national significance or capable of being remedied by categorical pretreatment standards.

II.

EPA HAS RADICALLY EXPANDED
THE SCOPE OF THE REGULATIONS
FAR BEYOND ITS DATA BASE

A. History of Regulations for the Organic Chemicals and Plastics/Synthetic Fibers Industries

Initial efforts to develop regulations for the organic chemicals industry and the plastics and synthetic fibers industry began in 1971. Under a two-phase program, conventional (BOD_5 and TSS) and a limited number of nonconventional pollutant parameters of the organic chemicals manufacturing industry were regulated separately from those of the plastics and synthetic fibers industry.

Phase I regulations for the organic chemicals manufacturing industry were promulgated on April 25, 1974. 39 Fed. Reg. 14676. These regulations applied to 40 specific product/process segments of the industry. Phase II regulations, promulgated on January 5, 1976 (41 Fed. Reg. 902), covered an additional 27 specific product/process segments.

Phase I regulations for the plastics and synthetic fibers industry were promulgated on April 5, 1974. 39 Fed. Reg. 12502. They established regulations for 13 identified plastic/synthetic fibers subcategories. The Phase II regulations, promulgated on January 23, 1975 (40 Fed. Reg. 3730), applied to 8 additional product/processes.

When the Phase II regulations for the organic chemicals manufacturing industry were published, litigation challenging the Phase I regulations was pending. On February 10, 1976 (a month after publication of the Phase II regulations), the court ordered EPA to withdraw, reconsider, and repromulgate both the Phase I and Phase II regulations. Union Carbide Corp. v. Train, 541 F.2d 1171 (4th Cir. 1976). In accordance with this ruling, on April 1, 1976, EPA published a notice revoking all of the Phase I and II regulations except those relating to the manufacture of butadiene. 41 Fed. Reg. 13936.

During the same time period, existing regulations (except those concerning pH limitations) for the plastics and synthetic fibers industry were also being challenged in court. On March 10, 1976, the Phase I plastics and synthetics fibers regulations were remanded to EPA for reconsideration. FMC Corp. v. Train, 539 F.2d 973 (4th Cir. 1976). On August 4, 1976, EPA published a notice revoking all Phase I regulations. 41 Fed. Reg. 32587. Since the Phase II standards were based on similar data, the Agency also revoked those regulations.

In 1976, EPA entered into a Settlement Agreement with environmental groups which was approved in a Consent Decree issued by the U.S. District Court for the District of Columbia. Natural Resources Defense Council v. Train, 8 E.R.C. 2120 (D.D.C. 1976). The Agreement embodied a new regulatory strategy for "toxic" pollutants. By December 31, 1979, EPA was to develop and issue BAT effluent limitation guidelines, pretreatment standards, and new source performance standards for 21 major industries (including the organic chemicals and plastics/synthetic fibers industries) covering 65 priority pollutants or groups of pollutants.[5/]

The Clean Water Act of 1977 (P.L. 95-217) required BAT levels of control for all priority pollutants referred to in Table 1 of Committee Print No. 95-30 of the House Committee on Public Works and Transportation (identical to the list of 65 classes of toxic pollutants listed in the Consent Decree).[6/]

5/ EPA did not meet its original deadlines, and the NRDC filed a motion with the District Court on September 26, 1978, requesting that EPA show cause why it should not be held in contempt of court for failing to comply with the timetable of the Consent Decree. This action led to a modification of the Consent Decree which was approved by the court on March 9, 1979. NRDC v. Costle, 12 E.R.C. 1833 (D.D.C. 1979). In 1981, EPA requested a revised set of deadlines. On May 7, 1982, the court ordered EPA to propose all regulations within six additional months. 17 E.R.C. 2013. EPA then asked that the deadlines for the regulations for the organic chemicals and plastics and synthetic fibers industries be extended. The court filed an order on October 26, 1982, requiring EPA to propose the regulations on these industries by February 1983 and promulgate the final regulation by March 1984.

6/ Recognizing that some of the listed substances represented classes of compounds, EPA refined the list by specifically

(Footnote continued on next page)

The pretreatment provisions of the 1972 legislation were not altered, but the Congress did add a provision to require a credit against the categorical pretreatment standards applicable to an industrial user for removal of priority pollutants by a particular POTW.

B. EPA's Data Gathering Program

After the entry of the Consent Decree, EPA began to collect the technical and economic information necessary to establish effluent regulations for priority pollutants. EPA largely relied on its authority under Section 308 of the Clean Water Act to gather information directly from manufacturing facilities.

By its own choice in establishing priorities, EPA's data gathering efforts since 1976 for the organic chemicals and plastics and synthetic fibers industries have focused on specific product/process segments of the industries. In 1976 EPA requested responses to BPT questionnaires from plants utilizing one or more of the product/processes in the organic chemicals or plastics and synthetic fibers industries covered by the earlier Phase I and II regulations. In 1977, EPA sent a BAT

(Footnote continued)

listing some members of the classes and excluding others, producing a list of 129 priority pollutants. EPA has since eliminated three pollutants from the original list: bis(chloromethyl) ether, dichlorodifluoromethane, and trichlorofluoromethane.

questionnaire to plants covered by the Phase I or Phase II regulations or which indicated in the BPT questionnaire that they produced a chemical on the priority pollutant list. Responses from 566 plants were used by EPA. BAT Dev. Doc., at II-17 to II-19 and App. B.

EPA then initiated a "screening" program and a "verification" program to obtain information on priority pollutants. Again EPA established priorities and focused its verification study efforts on the manufacture of chemicals on the priority pollutant list or directly derived from such chemicals, or approximately 1.4 percent of the estimated 25,000 commercial chemicals. BAT Dev. Doc. at II-21 to II-22. To conserve resources, EPA sampled large plants with as many priority product/processes as possible. A total of 37 plants were included in the verification study (the data for 6 of which were discarded as of questionable quality). BAT Dev. Doc., at II-23.

Finally, EPA participated in the selection of five large multi-product plants for a long-term sampling study by CMA's contractor.[7/] The plants were selected on the basis of specific priority pollutants expected to be found and because they had well-designed and well-operated biological treatment systems. BAT Dev. Doc. at II-23 to II-24, V-34.

7/ Engineering-Science, Inc., CMA/EPA Five-Plant Study (April 1982) (cited as "Five-Plant Study").

The foregoing, or first phase, of EPA's plan clearly was to focus the initial regulatory effort on major product/process segments of the industries. A second phase was to have developed information for other, lower-volume product/process segments. EPA did conduct a screening program in 1979 at 40 plants producing a number of speciality chemicals. However, the second phase was abandoned by EPA, and a verification study was never performed. BAT Dev. Doc., at II-23, V-58 to V-60.

C. The March 21 Regulations

The foregoing history of EPA's implementation of the Clean Water Act as applied to the organic chemicals and plastics and synthetic fibers industries is important. It demonstrates that for more than a decade EPA, by its own decisions establishing priorities, focused its regulatory efforts on a limited number of high-volume products generally manufactured at large plants. EPA's plans for a second phase study of small-volume products were aborted after the screening study.

Until the March 21 proposal, EPA had recognized that it is not reasonable to promulgate regulations for small and batch plants manufacturing thousands of different products without having a sound data base for that varied segment of the industry. Indeed, in the initial 1973 Phase I effluent regulations for the organic chemicals industry, EPA rejected the idea

of proposing a "basket category" regulating en masse the production of chemicals not otherwise included in its product/process subcategories. That proposal did include a "basket subcategory" for the many batch processes used in the manufacture of organic pigments and dyes. 38 Fed. Reg. 34705. However, EPA, recognizing the diversity of the many small producers of dyes and pigments, deleted batch organic dyes and pigments from the 1974 final regulations "due to the limited data base." 39 Fed. Reg. 14677.

The March 21 proposal represents a radical departure from and expansion of the scope of EPA's decade-long regulatory program:

- EPA's regulatory development program focused on specific product/process segments of the industry. The March 21 proposal applies to any facility which synthesizes organic chemicals or plastics or synthetics fibers (and perhaps even some that do not).

- By EPA's estimates, approximately 550 plants used the product/processes studied by EPA. Again by EPA's estimate, the scope of the regulations was expanded on March 21 to include up to 1,500 additional industrial plants.

- EPA's prior program included mostly high-volume chemicals produced at large plants. A large proportion of the plants which would be encompassed by the March 21 proposal are small plants.

• EPA's prior program clearly contemplated regulations identifying the product/process segments to be covered. With the March 21 expansion, EPA is unable to identify many of the regulated plants or the products which they produce. Based upon information from SOCMA's members, EPA has misidentified many plants.

In short, this major expansion of the scope of the regulations from a limited number of product/processes to an entire industry was not accompanied by a corresponding expansion in the data base for the regulations or notice to the potentially regulated community. Rather it seems to have its roots in EPA's decision in 1982 to abandon the product/process subcategory approach to the regulations. For reasons not disclosed, EPA then arbitrarily decided in the several weeks before publication of the March 21 proposal to extend the regulations to the entire organic chemicals, plastics and synthetic materials industries. SOCMA agrees with EPA that the product/process approach was unworkable. However, EPA's decision to abandon that approach does not justify in any way expansion of the regulations to hundreds of small plants and low-volume products for which EPA has virtually no data.

III.

EPA, AS A RESULT OF ITS DECISION TO RADICALLY EXPAND THE SCOPE OF THE REGULATIONS, HAS PLACED AN UNREASONABLE BURDEN ON SMALL PLANTS DESIRING TO EVALUATE THE IMPACT OF THE PROPOSED REGULATIONS AND TO COMMENT TO THE AGENCY THEREON

Recognizing the major importance of the proposed regulations, SOCMA has made every effort to assist those companies, both within and without its membership, who operate small plants in their efforts to evaluate and respond to the proposal. SOCMA sent information on the proposal to a list of 2400 plants. On May 16, 1983, SOCMA held an extensive workshop on the proposed regulations as they apply to small plants. SOCMA has distributed additional materials designed to help and guide small plants in commenting on the proposal.

SOCMA has received many inquiries from small plants in response to its efforts. It has become increasingly apparent that EPA, because of its chosen approach to the proposed regulations, has placed a wholly unreasonable burden on operators of small plants who, in complete good faith, desire to understand the impact of the proposal on their facilities and to provide the Agency with thoughtful, well-documented comments.

The major cause of many companies' inability to develop comments is EPA's decision sometime in the few weeks preceding publication of the proposed regulations to radically expand the scope of its regulatory program from the manufacture

of a discrete number of identified product/process segments of the organic chemicals and plastics and synthetic fibers industries to the manufacture of all organic chemicals and plastics and synthetic fibers. A most unfortunate consequence of EPA's eleventh-hour change in the scope of the regulations is that EPA has provided little meaningful information which the operator of a small plant can use in assessing and commenting on the proposed regulations. EPA has an obligation to make such information available in connection with proposed regulations and in the following more specific instances has completely failed to do so:

- The scope of the regulations should have been clearly defined. In fact, while EPA refers to particular Standard Industrial Classifications (SIC) as providing guidance for the applicability of the regulations, EPA representatives have stated at various times that facilities falling outside those SIC codes may nonetheless be covered by the proposed regulations. EPA's lack of specific definition of the scope of the regulations probably accounts in part for the fact that EPA itself is unsure of either the number or the identity of the plants encompassed by the proposal.

- To assist small plant operators in focusing their assessment, EPA should have identified with precision the pollutants of national significance for which categorical

pretreatment standards are justified and presented a meaningful data base for that conclusion. EPA has proposed regulations for 17 priority pollutants for the "not-plastics only" subcategory and 4 for the "plastics only" subcategory. But 64 additional pollutants for the "not-plastics only" subcategory and 98 for the "plastics only" subcategory have been listed for possible regulation based upon information which EPA may obtain during the rulemaking. And 9 of the 17 pollutants proposed for regulation in the "not-plastics only" subcategory are pollutants for which EPA had no POTW data indicating whether they are or are not compatible with POTW treatment.

* EPA should have had data for representative segments of the entire industry to be regulated indicating which priority pollutants are likely to be present at significant levels. In fact, EPA has little data on small plants, particularly those discharging to POTWs, and its "pollutant pathways model" is of no assistance to a small plant operator seeking to focus its analytic and monitoring work. The limited information which EPA did seek on specialty chemical producers (the second screening study) was not separately evaluated by EPA.

* Since EPA views the pretreatment standards as technology-related, EPA should have identified and provided a sound engineering evaluation of the available

technologies to reduce specific pollutants. As acknowledged by EPA in the Development Document (BAT Dev. Doc., at XI-3 to XI-4), the Agency did not in any way identify and evaluate pretreatment technology. Rather, EPA based its pretreatment standards on direct discharge BAT technology which includes biological treatment which is redundant with POTW treatment.

• EPA has an obligation to evaluate the economic impact of the regulations. The economic analyses as presented by EPA are based upon such complex models with so little actual data and so many hidden assumptions that they are simply inscrutable to the operator of a small plant. Indeed, even the expert consultant retained by SOCMA to assess the economic analysis as applied to small plants has found it most difficult to follow the Agency's reasoning, data sources and conclusions. Further, the record for the economic analyses is virtually devoid of meaningful information on small plants.

EPA's failure to provide an adequate base of reliable and usable information to assist the operator of a small plant has placed major burdens, in SOCMA's view unacceptable burdens, on an operator of a small plant seeking, first, to assess the impact of the proposed regulations on his business and, second, to comment to the Agency:

- EPA has imposed upon the operator of a small plant the time-consuming, expensive, and difficult task (particularly for batch plants) of obtaining representative information on the 81 pollutants for the "not-plastics only" subcategory and the 102 pollutants for the "plastics only" subcategory which EPA proposes to regulate or which it says it may regulate.

- EPA has imposed upon the operator of a small plant the task of identifying and evaluating the effectiveness of pretreatment technologies for the pollutants for which EPA has proposed standards and the several dozen other pollutants which EPA may regulate.

- EPA has imposed upon the operator of a small plant the burden of developing technology concepts and obtaining the information necessary in order to make at least a preliminary estimate of the cost of installing the technology required to achieve the standards or possible standards.

- EPA has imposed upon the operator of a small plant the burden of making an evaluation of economic impact in a manner that is somehow consistent with the complex computer models employed by the Agency.

There are no rational bases for concluding that small plants using POTWs have such information already available. The data-gathering efforts of POTWs and their industrial users in developing local pretreatment programs have been directed to

resolving identified problems. Given EPA's approach to identification of pollutants for regulation and establishment of proposed pretreatment standards, any concordance between studies conducted by POTWs or their users of actual pretreatment problems with EPA's proposal would be pure happenstance.

EPA has spent nearly a decade and several millions of dollars to develop information, albeit still incomplete, for the major product/processes which were included in its regulatory program prior to the radical expansion of that program in the March 21 proposal. Yet EPA, having provided the small plant operator with virtually no information which is useful in assessing the regulations, expects the small plant operator to duplicate that process within the confines of a few months. SOCMA submits that the burden which EPA, by virtue of <u>its decision</u> to dramatically enlarge the scope of these regulations, has placed upon the operator of a small plant is totally unreasonable and has the effect of excluding the small plant operator from the public participation process which the statute mandates.

IV.

EPA'S DATA DO NOT SUPPORT EPA'S ESTIMATE OF PRIORITY POLLUTANT DISCHARGES FROM ORGANIC CHEMICALS, PLASTICS, AND SYNTHETIC FIBERS PLANTS USING POTWS

PA's major enlargement of the scope of the regulations was not accompanied by any analysis establishing that the effluents from several hundreds of small plants now encompassed by the proposed regulations represent a significant national pretreatment problem. EPA's only effort to identify a pretreatment problem is its estimate that indirect dischargers account for discharges of 174 million pounds of priority pollutants and that the proposed regulations would result in a 90 percent reduction of such discharges to 9 million pounds. 48 Fed. Reg. at 11841, 11843.

In SOCMA's view, these figures must be discounted as arbitrary, unsupported and exaggerated. While the methods by which EPA compiled its estimates are shrouded in mystery, one point is clear: EPA's estimates were not based on data from the plants which would be regulated by the proposed pretreatment standards.

A draft EPA report[8/] concedes that the estimates were not derived from current discharge levels of plants covered by the proposed pretreatment standards. Rather the estimates were

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8/ James J. Spatarella, Project Officer, EPA Office of Water Regulations and Standards, "Summary of Priority Pollutant Loadings for the Organic Chemicals, Plastics and Synthetics Industry" (February 18, 1983).

modeled from data on a limited number of product/processes and arbitrarily extrapolated to the entire industry.[9/]

Consequently, it is clear that EPA attempted to use data from a limited number of large, high-volume direct discharging plants to characterize hundreds of small indirect dischargers. EPA made no effort to assess discharges of the plants which would actually be covered by the regulations.

That information which is available suggests that EPA's arbitrary estimates also are exaggerated. As best SOCMA can determine, EPA's estimates were based upon an assumed priority pollutant concentration in wastewater of 75 mg/l.

The only information presented by EPA separately on indirect discharges is data on three "not plastics only" plants. BAT Dev. Doc., Table V-22, at V-66. Of the 17 priority pollutants included in the proposed pretreatment standards for the "not plastics only" subcategory, only three (2-nitrophenol, chromium, and mercury) were detected in the wastewater of these indirect dischargers:

9/ EPA's data base, modeling effort, and extrapolations are discussed more extensively in CMA's comments.

Priority Pollutant	Number of Plants	Median Concentration
2-Nitrophenol	1	42 ppb
Chromium	3	240 ppb
Mercury	1	80 ppb

Such data are simply inconsistent with the apparent basis for EPA's gross estimate of priority pollutant discharges.

Similarly, a member company[10/] evaluated total priority pollutant concentrations in the effluents of its 14 indirect discharge plants. The average raw wastewater concentrations were approximately 4 to 5 mg/l (or less by 15 times that arbitrarily assumed by EPA).

It is incumbent upon EPA to accurately depict the effect of its regulations. Thus, EPA should --

- Use all available reliable information, including the substantial data base compiled by individual POTWs in developing local pretreatment programs.
- Identify the benefits of the regulations in terms of reductions in discharges of the specific priority pollutants which would be regulated by the pretreatment standards.
- Ensure that the base from which the reduction benefits are computed does not include those quantities of priority pollutants removed by industrial pretreatment and POTW treatment.

10/ E. I. Du Pont de Nemours & Co.

* Clearly define and explain the methodology by which the benefits are calculated.

V.

EPA SHOULD REVISE ITS POLLUTANT SELECTION PROCESS TO INCLUDE ONLY POLLUTANTS WHICH PRESENT A NATIONALLY SIGNIFICANT PRETREATMENT PROBLEM

Utilizing data from the screening phase, the verification phase, and the Five-Plant Study, EPA engaged in a 7-step process to select the priority pollutants to be subject to pretreatment regulations (BAT Dev. Doc., Section VI):

(1) EPA excluded 18 pesticides.

(2) EPA included the remaining 108 priority pollutants as candidates for regulation on the ground that each was detected in influents to treatment systems of at least 42 percent of the plants sampled for that pollutant during the screening, verification, and Five-Plant Study.

(3) For the "not-plastics only" subcategory, a decision on whether to regulate 64 pollutants was deferred because of inadequate data to establish BAT levels. For the "plastics only" subcategory, a decision was deferred on 98 pollutants.

(4) BAT effluent limitations guidelines were proposed for the remaining 44 pollutants in the "not-plastics only" subcategory and 10 pollutants in the "plastics only" category.

(5) EPA conducted a "pass through" analysis in which it compared the removal at industrial plants deemed to have BAT to average removals derived from the 50-plant POTW study.[11/] For the "not-plastics only" subcategory, EPA concluded from this "BAT removal comparison" that 27 pollutants should be excluded on the ground that POTW removal was equal to or greater than BAT removal. A total of 6 pollutants were excluded on this basis for the "plastics only" subcategory.

(6) EPA proposed pretreatment standards for 8 pollutants in the "not-plastics only" subcategory and 4 pollutants in the "plastics only" category on the ground that BAT removals exceed POTW removals by at least 5 percent.

(7) The remaining 9 pollutants in the "not-plastics only" subcategory were included in the proposed pretreatment standards because POTW sampling data were not available from the 50-plant POTW study.

The objective of EPA's pollutant selection procedure for pretreatment standards should be to identify pollutants which pose a significant national pretreatment problem. See Part I above. EPA's procedure wholly misses that mark.

SOCMA agrees with EPA that presence in industrial wastewater should be a factor in identifying pollutants for

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11/ Burns and Roe Industrial Service Corp., "Fate of Priority Pollutants in Publicly Owned Treatment Works" (September 1982).

regulation. However, EPA's conclusion that 108 priority pollutants occur in industrial effluent with sufficient frequency to constitute a "national" problem is bottomed on a flawed and biased data base:

* There is a serious question as to whether the screening study data are sufficiently reliable to be used as the basis for identifying pollutants for regulation, particularly since EPA's contractors were instructed to identify a pollutant as present if there was any doubt as to its absence. BAT Dev. Doc., App. E, at E-14.

* By design, the verification study and the Five-Plant Study focused on plants expected to have significant levels of priority pollutants. The plants included in those studies are not representative of the industries as a whole.

* The data are mainly from large direct dischargers and are not representative of small plants or indirect dischargers.

* EPA appears not to have separately assessed data from the second screening phase or on indirect dischargers. The information presented on indirect dischargers indicates that there are far fewer "significant" pollutants than the candidates identified by EPA. BAT Dev. Doc., Tables V-22 and V-23.

EPA's implicit definition of "pass through" is not consistent with its own practice or with Congress' intent to focus the categorical pretreatment standards on incompatible pollutants presenting a significant national problem. In its 1978 pretreatment strategy issued following the 1977 amendments to the Act, EPA correctly stated that a determination of "compatibility" should focus on POTWs: adverse impact upon the operation of the POTW, the ability of the POTW to remove a pollutant, and effect on POTW use or disposal of treatment system sludges. 43 Fed. Reg. 27761 (June 28, 1978).[12/]

In evaluating the degree to which effluents from the organic chemicals and plastics and synthetic fibers industries are compatible with POTW treatment, it is important to note --

- EPA has concluded that discharges from these industries do not cause a national problem of sludge use or disposal and that any "local problem should be addressed through the local pretreatment program." 48 Fed. Reg. 11842.

- EPA's assertions as to interference with POTW treatment processes (48 Fed. Reg. 11842) are generalized, undocumented, and not related to any specific pollutants.

Thus, there is no genuine issue of interference or sludge use, and the focus of EPA's analysis should be on

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12/ SOCMA notes that it does not agree with a number of other positions taken by EPA in the 1978 strategy statement.

"compatibility" in the sense of capability of the POTW system to reduce levels of a pollutant and limit "pass through." The BAT removal comparison is neither the only nor the appropriate approach to determining such capability. The BAT removal comparison is a wholly inappropriate test when the technology upon which BAT is based is biological treatment.

The arbitrariness of EPA's use of the BAT comparison in defining "pass through" can be demonstrated. Congress' objective in requiring that EPA consider the "pass through" of pollutants clearly was environmental protection. Comparison of the pretreatment standards resulting from EPA's approach with EPA's water quality criteria for protection of fresh water aquatic life firmly establishes that EPA's concept of "pass through" bears no reasonable relationship to Congress' intent. As shown in the table on the following page, EPA's methodology results in standards for industrial wastewater prior to POTW treatment which are significantly lower than EPA's criteria for the receiving waters. This serves as an important indication that the proposed standards should be reevaluated.

EPA'S PROPOSED PRETREATMENT STANDARDS COMPARED TO EPA'S WATER QUALITY CRITERIA

"Not-Plastics Only" Subcategory

Pollutants	Pretreatment Standard Daily Maximum (ppb)	Water Quality Criteria Freshwater Aquatic Life Toxicity (ppb)
2,4,6-Trichlorophenol	175	970**
2-Chlorophenol	75	4,380*
2,4-Dichlorophenol	200	365**
2,4-Dimethylphenol	50	2,120*
2-Nitrophenol	100	230*
4-Nitrophenol	500	230*
2,4-Dinitrophenol	150	230*
Isophorone	50	117,000*
Dimethyl phthalate	375	3**
Acenaphthylene	50	1,700*
Fluorene	50	No criterion
Phenanthrene	50	No criterion
1,2-Dichloroethane	150	20,000**
Chloroethane	50	118,000*
Methyl bromide	50	11,000*
Chromium	190	44**
Mercury	90	0.0017***

"Plastics Only" Subcategory

Pollutants	Pretreatment Standard Daily Maximum (ppb)	Water Quality Criteria Freshwater Aquatic Life Toxicity (ppb)
Vinyl Chloride	50	No criterion
Acrolein	50	21**
Cyanide	50	52***
Lead	40	74***

Source: 45 Fed. Reg. 79317 (Nov. 28, 1980)

* Criterion based on acute toxicity.
** Criterion based on chronic toxicity.
*** Concentration not to be exceeded at any time.

SOCMA strongly urges EPA to abandon the BAT removal comparison as used in developing its proposed pretreatment standards and to consider alternative approaches such as that proposed by CMA. Under CMA's alternative, pollutants would be included in the pretreatment program only if they occur significantly in industrial raw wastewater, occur significantly in POTW influents, and are not adequately treated by POTWs.

In addition, SOCMA recommends in connection with reconsideration of the proposed regulations that:

- The data base for indirect dischargers should be separately analyzed, and, if available, data after any pretreatment step should be used.
- The Agency should separately analyze data available for small plants as defined by sales, flow, or other available information.
- EPA should use all available information in determining whether a pollutant causes a significant national pretreatment problem. For example, EPA has, but has not made use of, an extensive data base generated by individual POTWs in developing their local programs.

Above all, the determination to establish pretreatment regulations for a particular pollutant should be made on the basis of reliable data indicating a problem of national significance. EPA should not flaunt the Congress' intent, as it has done for 9 pollutants for the "not-plastics only"

subcategory, by proposing regulations on the basis of an absence of information on POTW treatment. Nor should EPA utilize any approach in which the inevitably low concentrations in POTW influent (e.g., 20 ppb) are matched with an effluent at the nominal detection level (10 ppb for many pollutants) to demonstrate "inefficient" treatment (50 percent) or any other mechanistic approach which does not reliably evaluate POTW performance.

EPA has recognized that the statutory phrase "incompatibility" does not require a comparison to industrial BAT. In implementing the program required by Paragraph 4(c) of the Consent Decree (page 29 above) to identify incompatible pollutants, other than priority pollutants, as candidates for pretreatment regulations, EPA has not used any form of a BAT comparison. Rather EPA made a qualitative judgment as to whether a particular pollutant would be reasonably amenable to treatment in a POTW.

While SOCMA does not endorse the specific approach used in the Paragraph 4(c) program, the Paragraph 4(c) program does indicate EPA's recognition that there are alternative approaches to determining compatibility and that such screening approaches meet the statutory requirements for pretreatment standards focused on pollutants which cause POTW problems of national significance.

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The BAT removal comparison does not accomplish that result. The comparison indicates only that an industrial biological treatment system conforming to EPA's criteria for BAT technology may be more effective in treating some pollutants than the average of selected POTWs meeting secondary treatment requirements. That is not a "pretreatment problem" of national significance for which the Congress contemplated a remedy of categorical pretreatment standards.

VI.

EPA HAS NOT ESTABLISHED A TECHNICAL BASIS FOR THE PROPOSED PRETREATMENT STANDARDS, PARTICULARLY AS APPLIED TO SMALL PLANTS

A. Inadequacies of the BAT Data Base

The proposed pretreatment standards are derived directly from the proposed BAT effluent limitations guidelines. As discussed in more detail by CMA and its engineering consultant, EPA's data base is inadequate to support the BAT effluent limitations guidelines. That data base is particularly inadequate as applied to small plants which discharge to POTWS:

- The BAT data base consists of only 21 plants out of, by EPA's estimates, up to 2,100 plants covered by the proposal.

- The plants included in the data base were selected on the basis that they produce priority pollutants or produce large volume chemicals. "[T]housands of industrial

product/processes are left unaddressed" by the BAT data base. 48 Fed. Reg. 11835.

* While EPA initiated a second phase of its regulatory program for these industries directed at specialty chemicals with a screening study of 40 plants, that second phase was terminated before even a verification study was conducted.

* The proposed pretreatment regulations for organic priority pollutants are based on data from a limited number of plants. As shown by the table on the following page, the proposed pretreatment standards for 10 of 17 pollutants covered in the "not plastics only" subcategory are based on data from one plant. Each of the pretreatment standards for the "plastics only" subcategory is based on data from just one plant.

BAT DATA BASE AS APPLIED TO PRETREATMENT STANDARDS

"Not-Plastics Only" Subcategory

Pollutants	Number of Plants
2,4,6-Trichlorophenol	1
2-Chlorophenol	1
2,4-Dichlorophenol	1
2,4-Dimethylphenol	4
2-Nitrophenol	1
4-Nitrophenol	1
2,4-Nitrophenol	1
Isophorone	1
Dimethyl phthalate	1
Acenaphthylene	4
Fluorene	6
Phenanthrene	6
1,2-Dichloroethane	4
Chloroethane	2
Methyl bromide	1
Chromium	14
Mercury	1

Source: BAT Dev. Doc., Table IX-1, at IX-30 to IX-33.

"Plastics Only" Subcategory

Pollutants	Number of Plants
Vinyl Chloride	1
Acrolein	1
Cyanide	1
Lead	1

Source: BAT Dev. Doc., Table IX-2, at IX-34.

* There are serious errors in EPA's variability analysis (which would be particularly important when applied to batch plants with constantly varying product mixes and without the large volume of mixed wastes occurring at larger plants).

* Inadequate allowance is made for analytical variability.

B. The Absence of a Pretreatment Data Base

The most serious flaw in the proposed pretreatment standards is the total lack of an assessment by EPA of the technological basis for those proposed standards. As stated by EPA, "[t]he Agency's performance data for in-plant controls (such as steam stripping, solvent extraction and chemical (sic) (precipitation) that remove specific toxic pollutants prior to end-of-pipe treatment is not sufficient for development of pretreatment standards." BAT Dev. Doc. at XI-3. Therefore, not having adequate information to establish pretreatment standards based upon technologies appropriate for plants discharging to POTWs, EPA based the pretreatment standards on the BAT data base.

Nineteen of the 21 plants included in the BAT data base utilize biological treatment. Thus, the pretreatment standards are based upon biological treatment. Biological treatment is a wholly inappropriate technology for pretreatment. Redundancy with POTW treatment is inherent and, for that

reason, use of biological treatment as a basis for pretreatment standards is contrary to the Congress' intent to avoid duplication of POTWs.

It is not a sufficient answer for EPA to state that industrial users of POTWs will install a technology other than the biological treatment upon which it based the standards. 48 Fed. Reg. at 11842. EPA's obligation is to identify and assess an appropriate technology for pretreatment and to relate its standards to that technology. This EPA simply has not done.

C. Absence of a Small Plant Data Base

Nor has EPA considered in any meaningful way the circumstances of a small plant since its data base consists almost entirely of large plants. Evaluation of the application of pretreatment technology to a small plant is extremely important. For example, many such plants are batch chemical plants with a variability in effluent characteristics over time which may significantly impact the effectiveness of alternative technologies. Further, many small plants are located in urban areas where land constraints are severe. There is no doubt that many such plants simply would not have the space available to install the biological treatment upon which EPA based its pretreatment standards. It is also highly likely that many urban plants would not have the room to install alternative technologies which might approach the effluent levels proposed by EPA. For such plants, the choices would be a drastic change in the products produced or relocation.

EPA gave only the most tentative and incomplete consideration to size in its technical analysis. As a threshold matter, EPA decided that "size is best defined as the sum of process line production rates present at industrial plants[.] [P]roduction rates are those reported in the 308 questionnaire." EPA then concluded that "this definition fails to embody fundamental characteristics such as continuous or batch manufacturing processes" and gave up size as a technical basis for subcategorization because "there is no adequate method to define facility size." Dev. Doc., at IV-17 to IV-18 (emphasis added).

EPA's direction -- identification of fundamental characteristics of small plants -- was correct. However, the failure to identify such characteristics was inevitable since EPA used information from the 1976 and/or 1977 questionnaires, and those questionnaires were limited almost entirely to large plants with high-volume processes. See Part II above. Further, as discussed below, had EPA made an appropriate analysis of its economic data base, it would have concluded that size clearly is a relevant factor.

VII.

EPA'S COMPLIANCE COST ESTIMATES AND ECONOMIC IMPACT ANALYSES OF THE PROPOSED PRETREATMENT STANDARDS AS APPLIED TO SMALL PLANTS LACK ANY CREDIBLE BASIS

An examination of EPA's economic analysis of the proposed regulations leads irresistibly to the conclusion that the Agency's analysis of the economic impacts of the proposed pretreatment standards on small plants is simply not credible. EPA has failed to consider in any meaningful way the probable disproportionate economic impact of the proposed pretreatment standards upon small plants.

A. Lack of Economic Impact Information Regarding Small Plants

The data base underlying EPA's economic impact analysis of the proposed regulations, including the proposed pretreatment standards, consists almost exclusively of information relating to large plants that are direct dischargers and have high volume product processes. PMM Report, at 7-8. As discussed in Part II above, the limited nature of this data base is simply a reflection of the fact that, up until a few weeks before issuance of its proposal, the scope of the regulatory program was limited to large, high-volume product/process segments of the industries. As a result of the Agency's last minute determination to dramatically expand the scope of its proposal, the underlying data base is not coextensive with the universe of facilities covered by the proposed pretreatment standards. See Part II above.

SOCMA's economic consultant, Peat Marwick, has examined EPA's economic data base with respect to small plants.[13/] Peat Marwick found, as a result of cross checking EPA's data against information furnished by individual companies, that even the sparse information obtained by the Agency is riddled with errors and inaccuracies. In addition to these general deficiencies, EPA's data base lacks crucial information, such as actual wastewater flow, for small plants. PMM Report, at 8,

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13/ For purposes of analyzing the available data, Peat Marwick considered small plants ("establishments" in EPA's analysis and Peat Marwick's Report) as being those that met any one of the following criteria:

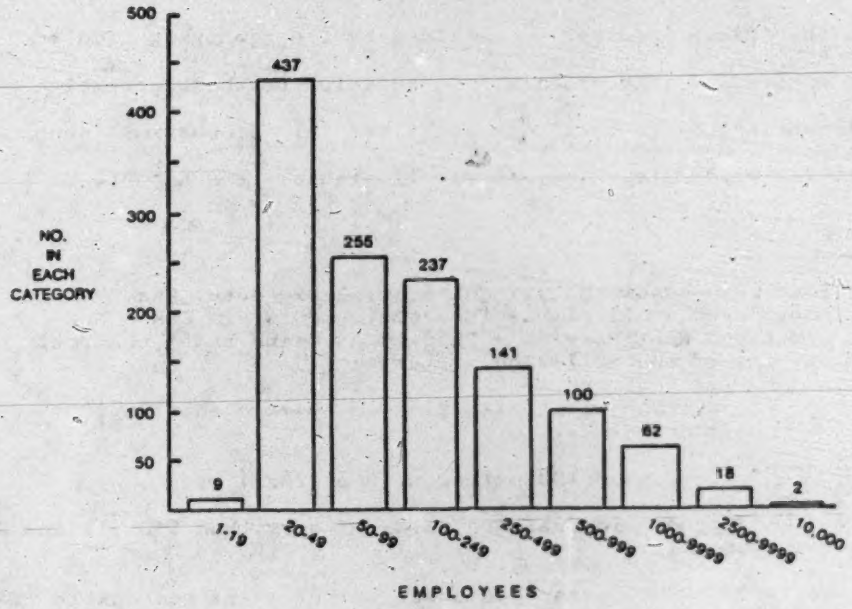
- average wastewater flow of no more than 25,000 gallons per day; or
- less than 100 permanent employees; or
- production-related sales of less than $30 million per year.

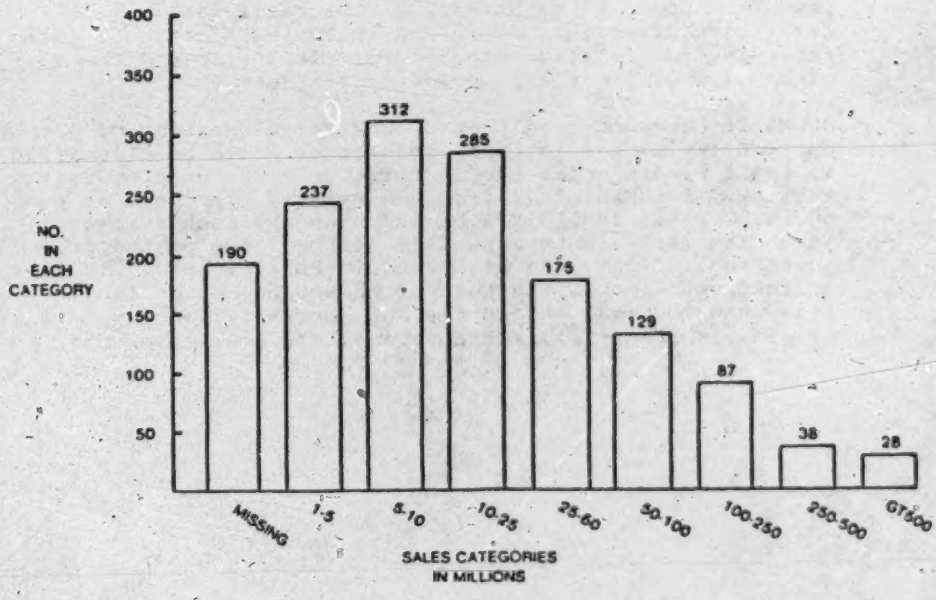
While SOCMA believes that these criteria are reasonable reference points for data analysis, it is not suggesting that they should be used to define a small plant. It is incumbent upon EPA to develop a reasonable small plant definition after collecting and analyzing additional data regarding the relationship between plant size and the cost of complying with the proposed regulations.

SOCMA is not concerned that a substantial portion of production facilities in these industries would be classified as small plants under the analytic criteria used by Peat Marwick. See Exhibit 2 from PMM Report, reprinted at p. 60 below. Nor should EPA be surprised by such a result, given its last-minute expansion of the scope of the proposed regulations. As discussed in Part II above, it is quite probable that the bulk of these production facilities now covered, beyond the 566 generally large plants originally identified for coverage, are smaller plants.

EXHIBIT 2

PROFILE OF ESTABLISHMENTS BY EMPLOYMENT AND BY SALES





10. Without such information, EPA has no basis upon which to conduct a credible analysis of the economic impacts of the proposed pretreatment standards upon small plants.

B. Deficient Pretreatment Compliance Cost Estimates for Small Plants

The essential first step in EPA's economic impact analysis of the proposed pretreatment standards is an estimation of the compliance costs. Unfortunately, the Agency's compliance cost estimates for small plants were derived using an inappropriate methodology and do not adequately reflect probable variations for small versus large plants.

EPA's methodology for estimating compliance costs associated with the pretreatment portions of the proposed regulations is essentially the same as that used for determining BAT compliance costs. The Agency developed treatment cost curves for 55 "generalized plant configurations" (GPCs) based upon the BAT data base which, as discussed in Part VI above, consists mainly of information relating to large plants. To estimate costs for plants which were not covered by a GPC, EPA employed equations based on rough assumed relationships between sales, cost and flow.

Less than 10 percent of the indirect dischargers (a large proportion of which are small plants) identified by EPA could be matched with a GPC. For those indirect dischargers

that could be matched, the accuracy of the resulting compliance cost estimates is nonetheless suspect because the GPCs themselves were developed from large plant data.

Compliance cost estimates for the more than 90 percent of indirect dischargers who were not covered by the GPCs, were based on the cost-flow-sales equations. EPA did not specify how these equations were derived. Peat Marwick, therefore, was unable to review these equations and comment upon their general validity as a cost estimation methodology. However, because these relationships were apparently also developed from EPA's predominantly large plant data base, they, like the GPCs, do not appear to constitute an appropriate method for determining small plant compliance costs.

Furthermore, Peat Marwick has determined that the equations mask significant variations in flow-to-sales ratios at small plants through the use of averaging techniques. These averaging techniques dampen the variations that would be expected in compliance costs for such facilities. PMM Report, at 19.

Peat Marwick has concluded that "it appears that <u>EPA does not have sufficient data to document the pretreatment practices of the industry and has prepared a cost and impact analysis which does not accurately represent the impact of the regulation.</u>" PMM Report, at 19 (emphasis added).

C. Inappropriate Closure Analysis For Small Plants

The second component of EPA's economic impact analysis is determining the number of plants which are potential closure candidates as a result of the proposed regulations. EPA's closure analysis for small plants is beset by two fundamental deficiencies. First, the Agency's choice of a single across-the-board cost-to-sales ratio as the central closure criterion was wholly inappropriate. Second, EPA's methodology for determining closure candidates predetermines the outcome of the closure analysis for plants whose compliance cost estimates were originally extrapolated from sales.

EPA considers a plant a candidate for closure as a result of the proposed pretreatment standards only if its estimated compliance costs with respect to those standards exceed 4 percent of its annual sales. This across-the-board closure criterion of a 4 percent cost-to-sales ratio fails to acknowledge the variation in profit-to-revenue ratios between large and small plants. PMM Report, at 22. Peat Marwick has determined that the closure criterion should be adjusted to encompass more closely the range of cost-to-sales ratios reflecting the current range of profit-to-revenue ratios in the various segments of the organic chemicals, plastics and synthetic fibers industries and at small plants within those industry segments. PMM Report, at 22.

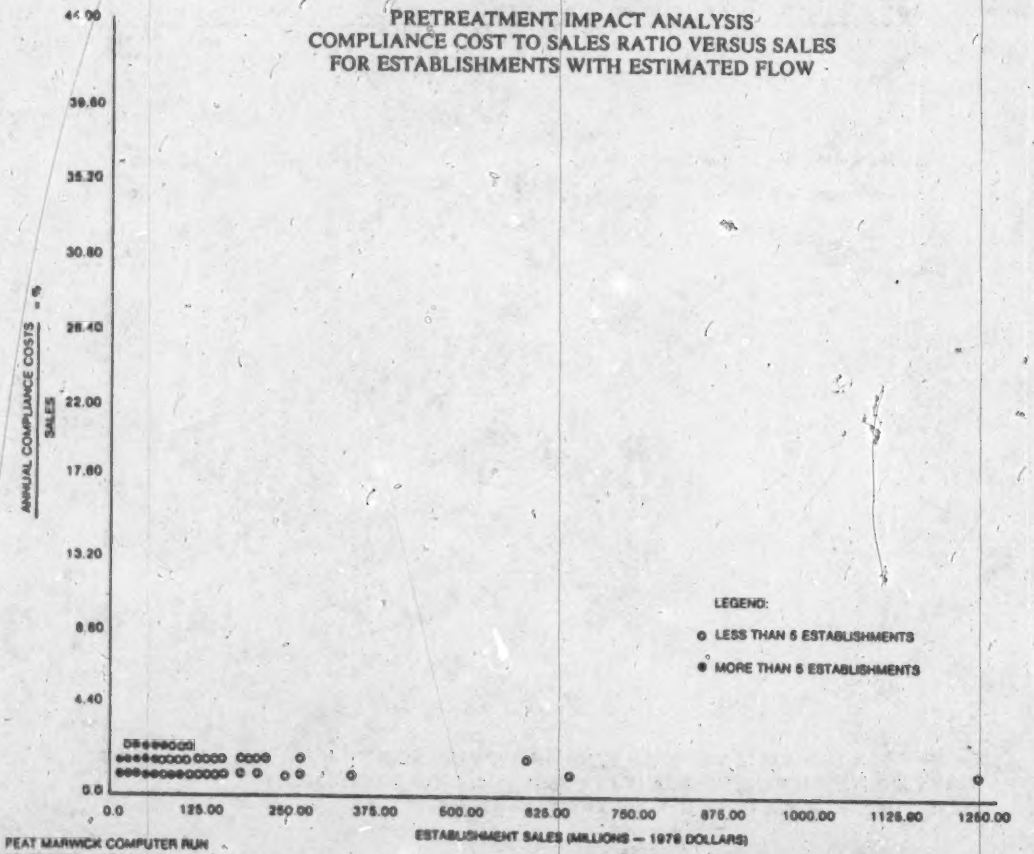
An equally serious deficiency is that the Agency's analytic methodology, which focuses on the cost-to-sales ratio for each plant, predetermines the outcome of the closure analysis for the great majority of indirect dischargers. This is the case for those plants whose compliance cost estimates were originally derived from their sales because EPA did not obtain flow data. Peat Marwick has determined that this circular relationship within the methodology results in the closure analysis for these facilities being artifically limited to a cost-to-sales ratio of approximately 2 percent. PMM Report, at 22. See Exhibit 9 from PMM Report, reprinted at p. 65 below. Since flow data were not obtained by EPA for 90 percent of the indirect dischargers, EPA's closure analysis for the pretreatment standards is essentially meaningless.

D. Actual Data Suggest Contrary Conclusion

Peat Marwick has determined from an analysis of the flow data which EPA did obtain that a significantly greater number of small plants would experience cost-to-sales ratios of over 4 percent (and thus would become closure candidates under EPA's closure criterion) than estimated by EPA. PMM Report, at 22. See Exhibit 8 from PMM Report, reprinted at p. 66 below. In addition, Peat Marwick concluded that a more realistic analysis of plants for which flow data were not obtained would have shown additional facilities to be closure candidates under EPA's criterion. PMM Report, at 22.

EXHIBIT 9

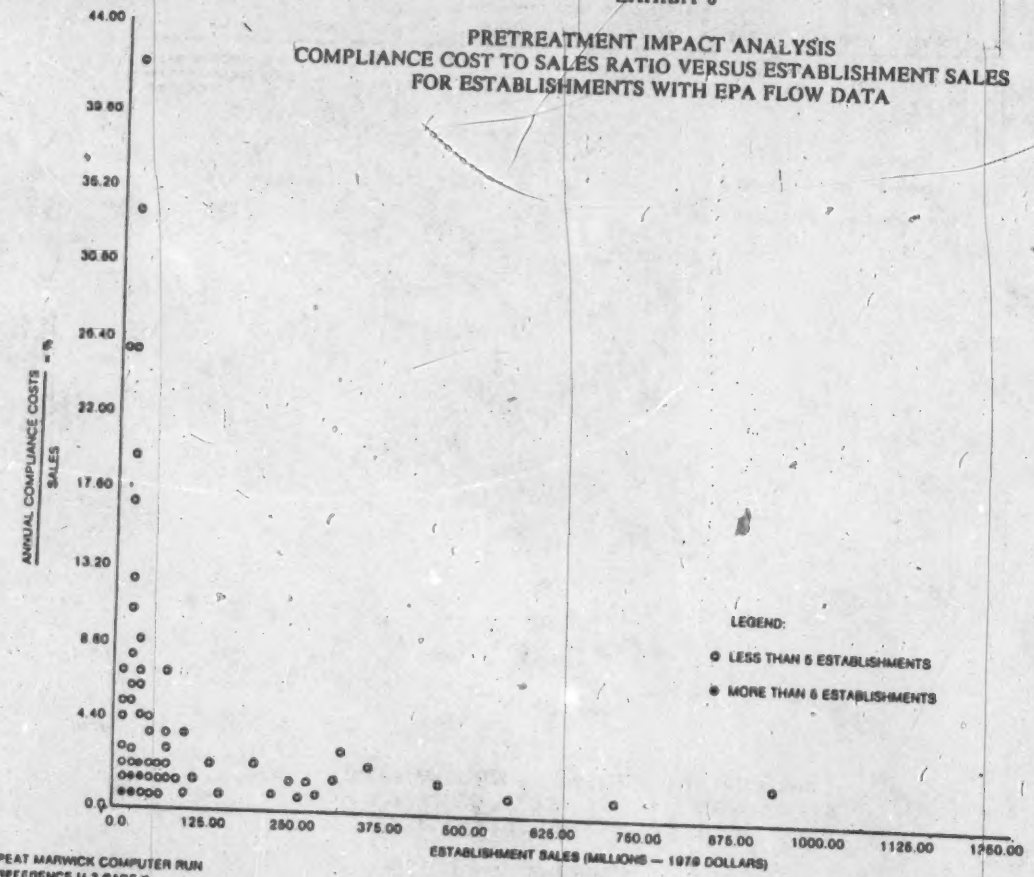
PRETREATMENT IMPACT ANALYSIS
COMPLIANCE COST TO SALES RATIO VERSUS SALES
FOR ESTABLISHMENTS WITH ESTIMATED FLOW



PEAT MARWICK COMPUTER RUN
REFERENCE H-3 PAGE 16

EXHIBIT 8

PRETREATMENT IMPACT ANALYSIS
COMPLIANCE COST TO SALES RATIO VERSUS ESTABLISHMENT SALES
FOR ESTABLISHMENTS WITH EPA FLOW DATA



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Furthermore, Peat Marwick has analyzed current capital cost estimates for compliance with the proposed standards as furnished by a number of SOCMA member companies and by member companies in CMA. Peat Marwick's analysis of these current company estimates of compliance costs strongly indicates that plants with less than $30-50 million in annual sales "will incur significantly higher and significantly different impacts" from the proposed pretreatment standards than larger plants. PMM Report at 25. See Exhibit 10 from PMM Report, reprinted at p. 68 below.

Peat Marwick stated flatly that EPA's conclusion that the regulations would not impose differential impacts on small plants "is not correct from our analysis of actual company cost estimates and our analysis of EPA's 'better' data." PMM Report at 25. Peat Marwick noted that on the contrary, "[i]t appears from our analysis that significantly different impacts within the industry begin to occur below $50 million in sales." Id. Peat Marwick stressed that the actual breaking point, in terms of plant size, with respect to the onset of differential impacts could not be determined without more data and further analysis.

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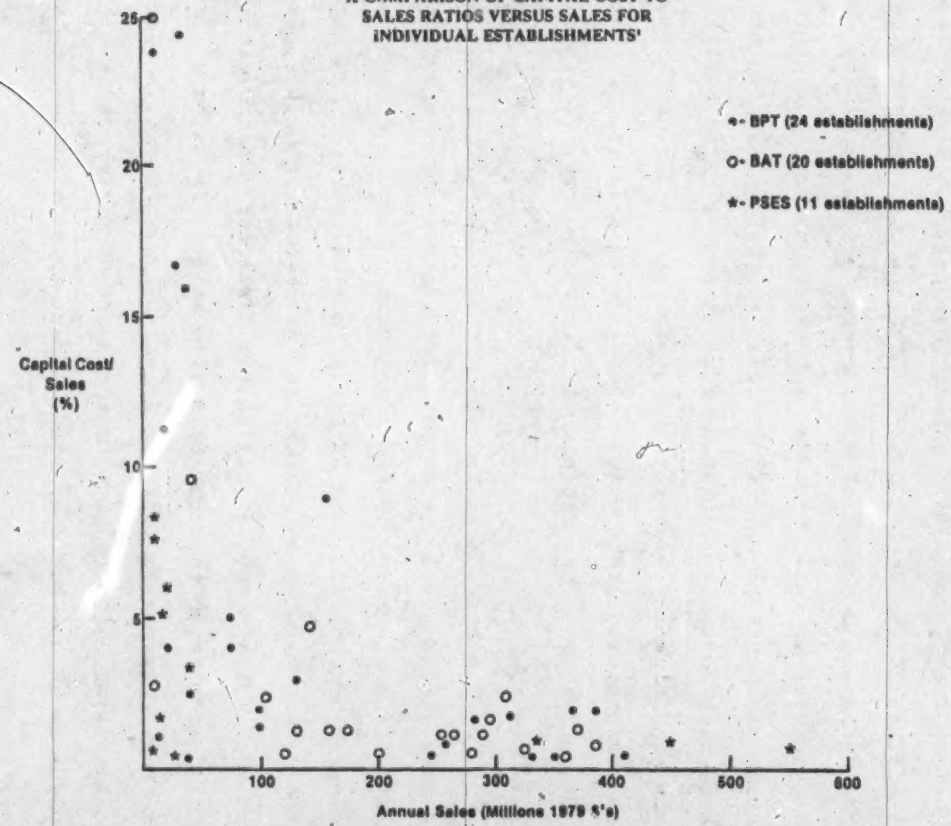
EXHIBIT 10

A COMPARISON OF CAPITAL COST TO SALES RATIOS VERSUS SALES FOR INDIVIDUAL ESTABLISHMENTS[1]



[1] Capital costs for each regulation estimated by affected companies for individual establishments (1979 $'s). Sales estimates are from EPA's economic data base (1979 $'s).

In sum, Peat Marwick's analysis documents that EPA has failed to give meaningful consideration to the probable disproportionate economic impacts imposed upon small establishments indicated by its own data and method of analysis. EPA should reanalyze the pretreatment cost estimating methodology in light of actual data from small plants. The Agency must also adjust its closure criteria to reflect the actual experience of small plants within the industry, as well as revise its methodology to eliminate predetermination of the result of the closure analysis for such facilities.

Until EPA conducts a new economic analysis in accordance with these recommendations, it cannot determine, much less meaningfully evaluate or consider, the impact its proposed pretreatment standards will have upon the many small plants within the industry now encompassed by EPA's regulatory program.

VIII.

EPA HAS FAILED TO COMPLY WITH THE REQUIREMENTS OF THE REGULATORY FLEXIBILITY ACT

The Regulatory Flexibility Act requires all federal agencies to prepare and make available for public comment an "initial regulatory flexibility analysis" when publishing a proposed regulation that will have a significant economic impact on a substantial number of "small entities." 5 U.S.C. §§ 603(a), 605(b). The Act mandates that the initial regulatory flexibility analysis, among other things, examine how

the proposal will affect small entities and describe significant alternatives that would minimize its economic impact on such entities. Id. § 603(b) and (c). The Act specifies that the analysis "shall discuss significant alternatives such as --

> (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
>
> . . . .
>
> (4) an exemption from coverage of the rule, or any part thereof, for such small entities."

5 U.S.C. § 603(c).

The Act defines the term "small entity" to have the same meaning as the term "small business concern" under section 3 of the Small Business Act, 15 U.S.C. § 632, unless an agency establishes an alternative definition of the term "after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment" and publishes the definition in the Federal Register. 5 U.S.C. § 601(3). The Small Business Administration's ("SBA") regulations implementing this statutory definition provide a size limit for small business concerns of 750 employees for some of the SIC code segments of the industries covered by the proposed regulations and 1000 employees for others. 13 C.F.R. Part 121 Schedule A.

EPA's internal guidelines for implementing the Regulatory Flexibility Act reiterate the statutory requirements for consultation with SBA's Office of Advocacy and the provision of an opportunity for public comment if EPA wishes to adopt an alternative definition of small entity in a particular circumstance. "EPA Guidelines for Implementing the Regulatory Flexibility Act," at 5-6 (February 9, 1982) ("EPA Guidelines"). The EPA Guidelines also specify that in selecting an alternative quantitative cutoff point for small entities, EPA may use the following criteria:

- the point at which the adverse economic impacts appear to rise or fall substantially, for example, in the form of higher costs or closures; and
- the point at which the regulation effectively includes a large number of regulated entities without covering a large portion of the pollution problem (e.g. 50 percent of regulated entities but only 10 percent of total discharge of the pollutant).

The EPA Guidelines require that EPA "explain why it made the cutoff where it did and why this cutoff is preferable to the definition in the Act." Id. at 5. Both this explanation and a description of the criteria used in selecting the alternative size cutoff point must be set forth in the preamble of the proposed regulation. Id. at 6.

The EPA Guidelines also provide criteria for determining whether a regulation will have a "significant economic impact" on a "substantial number" of small entities. In general, a substantial number of small entities is more than 20 percent of such entities. According to the EPA Guidelines, there is a significant impact on small entities whenever one of the following criteria is satisfied:

- annual compliance costs will increase the total costs of production for small entities for the relevant process or product by more than 5 percent;
- compliance costs as a percent of sales for small entities are at least 10 percent higher than compliance costs as a percent of sales for large entities; or
- the requirements of the regulation are likely to result in closures of small entities.

Id. at 7.

EPA asserted in the preamble to the proposed regulations that it had conducted a "small business analysis" which showed that there will not be a significant impact on any segment of the industry, large or small. 48 Fed. Reg. at 11846. The Agency asserted further that "[n]o significant differential impacts were estimated for small businesses," which EPA defines, in the context of this rulemaking, as companies with less than 50 employees. Id. On the basis of these determinations, EPA concluded that it was not required to prepare a regulatory flexibility analysis of the proposed regulations.14/

14/ The preamble inadvertently stated that a "Regulatory Impact Analysis" rather than a regulatory flexibility analysis was not required for these reasons.

EPA's determination that it was not required to prepare an initial regulatory flexibility analysis was patently erroneous. The Agency must rectify this failure to carry out its duties under the Regulatory Flexibility Act by preparing such an analysis and considering its findings in revising the proposed effluent limitations guidelines and pretreatment standards with respect to small plants.

A. Incorrect and Arbitrary Small Business Definition

As noted above, the SBA regulations implementing the statutory definition of "small business concern" provide a 750 or 1,000-employee size limit for such concerns in the SIC code categories covered by the proposed rules in this proceeding. 13 C.F.R. Part 121 Schedule A. EPA nonetheless adopted a small business definition of firms having less than 50 employees in the context of this rulemaking. On the basis of this definition, the Agency then determined that there would be no significant impact on small entities and that a regulatory flexibility analysis was therefore unnecessary.

EPA was required by its own regulatory flexibility guidelines and by the Act itself to justify the cutoff point in its alternative definition of small entities. In its Economic Impact Analysis, EPA stated that, under the SBA definitions, approximately half the firms in its data base would be classified as small businesses. Economic Impact Analysis at 2-14, 2C-11. EPA went on to assert, without any basis or foundation,

that a small business cutoff which results in 20 percent of the firms in the industry falling into that class is "more appropriate." Id. at 2C-11. The Agency then simply set the size limit at fewer than 50 employees to achieve that result. Id.

The Agency attempted to suggest that the choice of this size limit was based upon consideration of potentially "significant barriers to entry due to factors such as limited capital access." Id. at 2-14. However, the Economic Impact Analysis provides no indication that capital availability was assessed on other than an industry-wide basis. See id. at 2-13, 2-14, 2C-8.

In addition, EPA failed to consult with SBA's Office of Advocacy with respect to its adoption of this alternative definition of small businesses. This failure further illustrates the Agency's total disregard for the requirements of the Regulatory Flexibility Act and its own guidelines.

In short, EPA presented no meaningful explanation for its rejection of the SBA small business size guidelines for small entities within the organic chemicals, plastics and synthetic fibers industries. The Agency's adoption of a size cutoff of 50 employees was wholly arbitrary. EPA, therefore, must reconsider the impacts of the proposed regulations on small entities using the SBA definition or an alternative size cutoff which has been thoroughly explained and justified in accordance with the requirements of the Act and the EPA Guidelines.

B. Erroneous Cost Estimates and Flawed Closure Analysis

EPA's determination that small entities would not experience significant or differential impacts as a result of the proposed pretreatment standards was based on the conclusion in its economic analysis that small plants (i.e., those at firms with fewer than 50 employees) would not constitute a significant or disproportionate number of the closure candidates. Economic Impact Analysis, at 5-13 to 5-14. As described more fully in Part VII above, Peat Marwick has determined that the Agency's closure analysis uses a seriously flawed methodology and data base. The closure analysis for more than 90 percent of the plants which EPA estimates to be covered by the proposed pretreatment standards is based upon compliance cost estimates extrapolated from sales information. Peat Marwick has concluded that these extrapolated cost estimates are the product of unexplained and unverified equations which employ averaging techniques that dampen cost variations likely experienced by small plants. Peat Marwick also determined that actual company estimates of compliance costs strongly indicate that small plants will suffer disproportionate closure impacts. See Part VII.D. above.

In sum, EPA's conclusion that preparation of a regulatory flexibility analysis of the proposed pretreatment standards was unnecessary because the standards would not impose significant or differential impacts on small entities lacks any

reasonable basis in the record materials. Indeed, Peat Marwick stated flatly that EPA's conclusion as to the absence of differential impacts on small plants "is not correct." PMM Report, at 25. EPA, therefore, must reconsider the need for a regulatory flexibility analysis of the proposed pretreatment standards in light of revised compliance cost estimates and closure assessments for small plants.

C. Available Data Indicate Disproportionate Small Plant Impacts

After careful examination and analysis of EPA's own "better" data, Peat Marwick has determined that, contrary to EPA's conclusion, there appears to be a direct relationship between the ratio of pretreatment compliance costs to sales and plant size as shown by sales. PMM Report, at 22 and Exhibit 8 (reprinted at p. 66 above). In other words, EPA's own data regarding small plants belies the Agency's finding of no significant or differential impact and instead demonstrates that such facilities may bear substantial and disproportionate economic impacts resulting from the proposed pretreatment standards. In addition, an analysis of actual company estimates of compliance costs led Peat Marwick to conclude that small plants with less than $30-50 million in annual sales "will incur signficantly higher and significantly different impacts than larger establishments." PMM Report, at 25. See also Exhibit 10 to the PMM Report (reprinted at p. 68 above). It thus seems clear

that EPA's reconsideration of the need for a regulatory flexibility analysis should lead to the determination that preparation of such an analyis is required in conjunction with the proposed pretreatment standards.

D. Lack of Analysis of Significant Regulatory Alternatives for Small Entities

The Regulatory Flexibility Act requires EPA to consider as part of its initial regulatory flexibility analysis, significant alternatives to the proposed rules that would accomplish the same end while minimizing the economic impact on small entities. 5 U.S.C. § 603(c). Particular alternatives specified in the Act are (1) the establishment of different compliance requirements that take into account the resources available to small entities and (2) an exemption from coverage of all or parts of the proposed rules. EPA's own regulatory flexibility guidelines reiterate this requirement. EPA Guidelines, at 11.

In order to consider such alternatives, as it is required to do under the Act, EPA must undertake an analysis of alternative regulatory approaches with respect to small firms and small plants in the organic chemical industry as discrete classes. See Small Refiner Lead Phase-Down Task Force v. Environmental Protection Agency, 705 F.2d 506, 537-539 (D.C. Cir. 1983). As noted in Part II above, EPA's data base is largely limited to large plants and firms and cannot now

support such an analysis. Therefore, EPA is statutorily obligated to acquire new data regarding small entities within the industry in order to analyze the impacts of the proposed pretreatment regulations and significant alternative regulatory approaches, such as exemptions or differential compliance requirements, with respect to small firms, and to small plants of large firms. Failure to fulfill this obligation would render any final regulation applying pretreatment standards to such firms and facilities vulnerable to legal challenge. See Small Refiner Lead Phase-Down Task Force, supra, at 539.

As noted above, Peat Marwick's analysis of actual company estimates of compliance costs indicates that small plants with less than $30-50 million in annual sales will suffer substantial and disproportionate impacts under the proposed pretreatment regulations. In fulfilling its statutory obligation to analyze alternative regulatory approaches to the proposed standards, EPA should therefore give specific consideration to possible exemptions or differential compliance requirements for firms and plants with annual sales of less than $30-50 million.

IX.

EPA's REGULATORY IMPACT ANALYSIS FAILS TO FULFILL THE REQUIREMENTS OF EXECUTIVE ORDER NO. 12291 WITH RESPECT TO THE PROPOSED PRETREATMENT STANDARDS

Executive Order No. 12291 requires EPA to prepare a preliminary "regulatory impact analysis" of proposed major regulations such as the proposed rules in this proceeding. 46 Fed. Reg. 13193 (Feb. 17, 1981). The Executive Order specifies that a preliminary regulatory impact analysis is to contain, among other things, a description of "alternative approaches that could substantially achieve the same regulatory goal at lower cost" together with an explanation of why such alternatives could not be adopted. The regulatory impact analysis must also include descriptions of the potential costs, benefits and net benefits of the proposed regulations, as well as an identification of those likely to bear the costs and those likely to receive the benefits.

The preliminary regulatory impact analysis prepared by EPA falls far short of meeting these requirements. The Agency, therefore, should prepare a revised preliminary regulatory impact analysis which meets the specifications of Executive Order 12291, especially with respect to small plant impacts, and revise the proposed regulations accordingly.

A. Failure to Describe Alternative Regulatory Approaches Which Reduce Small Plant Impacts

Notwithstanding the clear requirements of Executive Order 12291, EPA's Regulatory Impact Analysis[15/] ("RIA") of the proposed regulations does not include a description or analysis of alternative approaches to the proposed pretreatment standards. In particular, neither the Regulatory Impact Analysis itself nor any of its associated supporting documents[16/] even

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15/ Regulatory Impact Analysis of the Effluent Guidelines Regulation for the Organic Chemicals, Plastics and Synthetic Fibers Industry (February 10, 1983).

16/ The documents supporting the RIA are the following:

- Cost Effectiveness Analysis of Effluent Standards and Limitations for the Organic Chemical Industry (January 1983);
- Assessment of Projected Water Quality Benefits from the Implementation of Regulations Defining the Best Available Technology Economically Achievable for the Organic Chemicals, Plastics, and Synthetics Industry (February 10, 1983);
- Economic Benefits of the Proposed Effluent Limitations Guidelines for the Organic Chemicals, Plastics, and Synthetic Fibers Industry as contained in the Executive Summary (January 24, 1983);
- Economic Assessment of the Benefits of the Proposed Effluent Limitation Guidelines for Organics and Plastics Manufacturers (January 1983); and
- Estimated Human Health Benefits from Chemical Plant Effluent Control in Two Regions (January 25, 1983).

consider possible exclusions from the standards, based on flow, sales levels, or other criteria, which would significantly reduce impacts on small plants and small firms. Nor is there any examination of alternative levels for pretreatment standards or of standards for a lesser number of priority pollutants as determined by a refined pollutant selection process. See Part V above.

SOCMA strongly recommends that EPA revise and expand the RIA to include an analysis of these and perhaps other regulatory alternatives for small plants. This analysis should present a comparison of the impact on small plants of such alternatives versus those of the proposed pretreatment standards. Such an analysis is clearly required by Executive Order 12291 in conjunction with the promulgation of regulations establishing pretreatment standards for this industry. The current RIA completely overlooks this basic obligation. EPA simply cannot take final action on the proposed regulations until an analysis of alternatives which would reduce small plant impacts has been completed.

B. Inadequacy of Costs and Benefits, Cost-Effectiveness and Net Benefits Analysis

The RIA and its supporting documents purport to examine the costs and benefits, cost-effectiveness and net benefits of the proposed regulations, including the proposed pretreatment standards.[17/] In reality, these materials clearly

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17/ RIA at 7.

indicate that, with respect to its pretreatment proposal, the Agency's benefits analysis consists solely of model projections based upon hypothetical factors relating to flow rates and receiving water dilution ratios.[18/] What actual data the Agency does have contradicts the RIA's conclusion that the proposed pretreatment standards would result in the elimination of a significant number of water quality violations.[19/] Nor does the RIA examine the cost-effectiveness of the proposed standards with respect to small plants.

In addition, Peat Marwick has concluded that by determining a single average removal cost per pound of toxic pollutants for the entire industry, EPA's cost-effectiveness analysis masks potentially wide variations in removal costs between small and large plants. PMM Report, at 27. Peat Marwick found that EPA's own "better" data regarding small plants and company cost estimates submitted by SOCMA and CMA members both indicate that compliance costs will be significantly higher at small plants. PMM Report, at 25; see also

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18/ Id.; Assessment of Projected Water Quality Benefits From Implementation of the Regulations Defining Best Available Technology Economically Achievable For the Organic Chemicals, Plastics, and Synthetics Industry at 4-1 to 4-8; (February 10, 1983); Cost Effectiveness Analysis of Effluent Standards and Limitations for the Organic Chemicals Industry Chap. 3 (January 1983).

19/ See JRB Associates, Assessment of the Impacts of Industrial Discharges on Publicly Owned Treatment Works at 3-6 (November 20, 1981) (concluding that categorical pretreatment standards will not significantly alleviate water quality criteria exceedances).

Part VII above. Noting that the average cost-effectiveness ratio for the organic chemicals and plastics and synthetic fibers industries is one of the highest for any industrial category, Peat Marwick recommended that EPA complete a more detailed analysis to determine removal costs at small plants. PMM Report, at 27. Peat Marwick also concluded that EPA should identify alternative pollutant reduction strategies for such facilities which might be more cost-effective. PMM Report, at 27.

SOCMA believes that these deficiencies in the RIA necessitate a completely new assessment of benefits and cost-effectiveness based upon actual data rather than hypothetical information generated by unverified models. In conducting such an assessment, EPA should separately analyze the relative benefits and cost-effectiveness of the proposed standards as applied to small plants. The completion and consideration of such an analysis is a clear prerequisite under Executive Order 12291 to any final action on the proposed regulations.

CONCLUSION

For the foregoing reasons, SOCMA believes that EPA's basis for the proposed pretreatment standards, and for the proposed effluent limitations guidelines, is totally inadequate, especially as applied to small plants within the organic chemicals, plastics and synthetic fibers industries. The proposed

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regulations must therefore be reconsidered, reevaluated and revised. The scope and content of final pretreatment regulations and standards must reflect a thorough analysis, founded on adequate and meaningful data, of their achievability and economic impact with respect to small plants.

Respectfully submitted,

SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, INC.

Ronald A. Lang

Ronald A. Lang
Executive Director

Attachments

August 17, 1983

ATTACHMENT A

SOCMA MEMBERSHIP

ACETO INDUSTRIAL CHEMICAL CORP.
ALBANY INTERNATIONAL CORP.
AMERICAN CYANAMID CO.
AMERICAN HOECHST CORP.
AMOCO CHEMICAL CORP.
BASF WYANDOTTE CORP.
BERNCOLORS-POUGHKEEPSIE, INC.
BIDDLE SAWYER CORP.
BOFORS NOBEL INC.
BORDEN INC.
BUFFALO COLOR CORP.
CAREY INDUSTRIES, INC.
CARROLL PRODUCTS, INC.
CELANESE CORP.
CHATTEM, INC.
CHEMICAL EXCHANGE INDUSTRIES, INC.
CHEMTAN CO., INC.
CROWN METRO, INC.
DAY-GLO COLOR CORP.
DOW CHEMICAL U.S.A.
DREW CHEMICAL CORP.
E. I. DU PONT DE NEMOURS & CO.
DYE SPECIALTIES, INC.
ESCO - EAST SHORE CHEMICAL CO., INC.
EM INDUSTRIES, INC.
ESSEX CHEMICAL CORP.
EVANS CHEMETICS
FAIRMOUNT CHEMICAL CO., INC.
FIKE CHEMICALS, INC.
FIRST STATE CHEMICAL CO., INC.
FMC CORP.
GAF CORP.
HEXCEL CHEMICAL PRODUCTS
HILTON-DAVIS CHEMICAL CO., THE (GROUP OF STERLING DRUG, INC.)
H & S CHEMICAL, INC.
HUMPHREY CHEMICAL CO., THE
ICI AMERICAS INC.
JARCHEM INDUSTRIES, INC.
JOHNSON MATTHEY INC.
KOHNSTAMM, H., & CO., INC.
LOCTITE CORP.
LONZA, INC.
MALLINCKRODT, INC.
MERICHEM CO.
MILLIKEN CHEMICAL (DIV. OF MILLIKEN & CO.)
MOBAY CHEMICAL CORP.
MONSANTO COMPANY
MOONEY CHEMICALS, INC.
MORTON CHEMICAL CO.
MUSKEGON CHEMICAL CO.

NAPP CHEMICALS, INC.
NATIONAL STARCH & CHEMICAL CORP.
OCCIDENTAL CHEMICAL CORP.
OLIN CORP.
C.H. PATRICK & CO., INC.
PENNWALT CORP.
PFISTER CHEMICAL, INC.
PHILLIPS CHEMICAL CO. (A SUB. OF PHILLIPS PETROLEUM CO.)
POLAROID CORP.
PPG INDUSTRIES
PRODUCTS RESEARCH & CHEMICAL CORP.
RSA CORP.
REILLY TAR & CHEMICAL CORP.
RHONE-POULENC, INC.
SALSBURY LABORATORIES
SANDOZ COLORS & CHEMICALS
SAYTECH, INC.
SOLUOL CHEMICAL CO., INC.
STANDARD CHLORINE CHEMICAL CO., INC.
STAUFFER CHEMICAL CO.
STERLING ORGANICS (A DIVISION OF STERLING CHEMICAL GROUP)
SUN CHEMICAL CORP.
SYNALLOY CORP., BLACKMAN UHLER CHEMICAL DIV.
THIOKOL/SPECIALTY CHEMICALS DIV.
UNION CARBIDE CORP.
UPJOHN CO., THE
WHITE CHEMICAL CORP.
WITCO CHEMICAL CORP.
WYCKOFF CHEMICAL CO.

ASSOCIATE MEMBERS

ATLANTA CHEMICAL CO., INC.
BIESTERFELD U.S., INC.
BROWN & CALDWELL
CHEMICAL CONTROL & MANAGEMENT SERVICES, INC.
CHEMISPHERE CORP.
CP CHEMICALS, INC.
DAINICHISEIKA COLOR & CHEMICALS, INC.
ENGELHARD INDUSTRIES
ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
FANWOOD CHEMICAL, INC.
R.W. GREEFF & CO., INC.
KENNEDY & KLIM, INC.
HOWARD L. MINCKLER & ASSOCIATES,
MERCANTILE DEVELOPMENT, INC.
MITSUI & CO., (U.S.A.), INC.
MONTEDISON USA, INC.
NACHEM INCORPORATED
ORLEX CHEMICAL CORP.
PYLAM PRODUCTS CO., INC.
R-CHEM, INC.
SPRINGBORN REGULATORY SERVICES, INC.
WILSON DYE & CHEMICAL DISTRIBUTORS, INC.

ATTACHMENT B

;ocma SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, INC
1612 K STREET, N.W., SUITE 308, WASHINGTON, DC 20006 • (202) 659 0060

November 20, 1981

Bruce R. Barrett
ing Administrator for Water
ted States Environmental
rotection Agency
556
hington, D.C. 20460

r Mr. Barrett:

The Synthetic Organic Chemical Manufacturers :ociation (SOCMA) is a nonprofit trade association currently isisting of 100 members producing a wide variety of organic :micals. Many of its members are small companies, often :ated in urban areas, which discharge their effluents into blicly owned treatment works (POTWs). SOCMA, therefore, is ncerned with the direction of EPA's national pretreatment rategy. Based upon the extensive experience which SOCMA's mbers have had with local pretreatment program development in ny areas of the country, SOCMA believes that it can contrite toward the development of an effective pretreatment proam which achieves the goals of the Clean Water Act and which based on an appropriate balance of Federal, state and local sponsibility.

Failure of EPA'S Pretreatment Strategy

For the past nine years, EPA has pursued a pretreatent strategy keyed to national categorical pretreatment standrds. The Agency has accomplished little. The national prereatment program is in a state of confusion both with respect o the categorical pretreatment standards themselves and those ortions of the general pretreatment standards intended to mplement the categorical standards. The general pretreatment egulations are excessively complicated to the point that they ire unworkable. The Agency has been unable to develop more :han a handful of categorical standards due to the diverse and :omplex nature of industrial users of POTWs, to the variations in the type, design and capability of POTWs, to the difficult technical issues relating to the treatability of particular wastewaters by POTWs and by alternative pretreatment technologies, and to the difficulty in resolving important questions of POTW sludge use and disposal.

In SOCMA's view, the Agency's present pretreatment strategy has been a failure. It has not led toward measureable advancement of the goals of the Clean Water Act. Its continuing confusion has created uncertainty for the states, for POTWs, and for industrial users of POTWs.

Need for Review of Basic Assumptions
Underlying the Pretreatment Strategy

SOCMA strongly urges that EPA consider, against the backdrop of nearly a decade of experience, whether its national pretreatment strategy is workable, whether it is needed, and what the alternatives are for achieving the goals of the Clean Water Act. SOCMA believes that such a review will lead to the conclusion that the present national pretreatment strategy is not workable and that it is not needed. Equally important, the experience of SOCMA's members in dealing with state and POTW authorities in the vacuum created by the failure of EPA's national pretreatment strategy suggests that alternatives are available to achieve the goals of the Clean Water Act.

Development of Local Pretreatment Programs

Notwithstanding the confusion and lack of progress at the Federal level, many municipalities have developed effective local pretreatment programs. SOCMA believes that many of these local programs have substantially implemented the objectives of the Clean Water Act (CWA) in that they protect POTW operations, ensure compliance with POTW NPDES permit limitations, ensure safe sludge disposal, and allow cost effective treatment of both industrial and municipal waste.

Examples of model programs exist in Buffalo, Chattanooga, St. Louis, Grand Rapids, Chicago and Los Angeles. In large measure, these pretreatment programs have been established by local officials with the oversight of state officials. But it is also important to note that most of these programs have been developed in cooperation with industry through local advisory committees (including industrial users, commercial users, and public participation).

Many other POTWs are in the process of upgrading their pretreatment programs. For these local programs in the developmental stage, the uncertainty as to pretreatment issues at the federal level has been a hindrance, and sometimes even a

detriment to, program development. POTWs are reluctant to complete their own program for fear of having to repeat the process to incorporate substantially different Federal requirements.

Lessons of Past Experience

As succinctly stated by the Oversight and Review Subcommittee of the House Public Works and Transportation Committee, a decade of experience with pretreatment under the Clean Water Act strongly suggests the need for a fundamental change in direction:

> "After eight years of trying, EPA has been almost totally unsuccessful in implementing this requirement [to establish pretreatment standards] of the law."
>
> "In contrast to the problems that EPA has encountered in its efforts to move forward with a National pretreatment program, many communities have moved forward with their own, experiencing far less difficulty in meeting the essential thrust of the 1972 pretreatment language." Subcommittee on Oversight and Review of the Committee on Public Works and Transportation, House of Representatives, 96th Cong., 2d Sess., Implementation of the Federal Water Pollution Control Act, at 40, 44 (Comm. Print 1980).

SOCMA's Recommendation

The most practical solution to the present chaos in pretreatment policies is to allow local pretreatment program development with limited federal involvement. Ultimately, both administrative and legislative changes will be required.

Administrative Steps

SOCMA believes that EPA can now begin to implement the following steps which will hasten progress toward an effective and sensible pretreatment program:

- Specific acknowledgment of the Clean Water Act's policy of encouraging cost-effective joint treatment of domestic and industrial waste.

- Careful and thorough evaluation of pretreatment programs which have been developed by POTWs largely independently from the national pretreatment program.

- Complete reconsideration of all provisions of the general pretreatment regulations designed to implement the national categorical standards (under a timetable which allows reproposal and promulgation in sufficient time to implement categorical pretreatment standards should EPA or the Congress determine that such standards should be one element of a national pretreatment policy).

- Review and revision of the remaining provisions of the general pretreatment standards (such as recordkeeping and reporting requirements) to ensure that unnecessary detail, procedures, and paperwork do not discourage POTWs from developing pretreatment programs.

- Revision of the Agency's present policy on sludge use or disposal to conform to Section 405(e) of the Act by leaving to local POTWs the choice among the alternatives available as long as implementation of the option chosen is consistent with the Agency's Section 405(d) guidelines, RCRA, and other applicable standards.

- Use of the NPDES permit program to encourage POTWs to address and resolve pretreatment issues including implementation of the basic participation of the general pretreatment standards (40 C.F.R. § 403.5(a) and (b)).

- Adoption of a policy applicable to EPA-issued NPDES permits and recommended to NPDES states for early and substantial involvement of user and other public groups in the development of local pretreatment programs.

- Adoption of an enforcement policy under Section 309, Section 309(f), which places upon the POTW initial and substantial responsibility for initiating appropriate measures to remedy violations of its permit which may be related to the receipt of industrial wastewaters.

The foregoing steps can be taken without commitment of major Agency resources and, indeed, may reduce resource needs as compared to the Agency's present pretreatment policy. In addition to the steps outlined above, SCCMA believes that the goals of the Clean Water Act could be furthered by the development, within the limits of the Agency's resource constraints, of the following:

- A compilation of information on the elements of an effective and practical local pretreatment program.

- Development of information, prepared after notice and public comment, regarding alternative pretreatment technologies as related to POTW treatment and sludge disposal considerations.

Legislative Action

SCCMA firmly believes that the foregoing steps can be taken within the confines of the Agency's present obligations

and will ensure significant progress toward shared environmental goals while the larger statutory issues are being resolved. In the longer term, SOCMA believes that the following steps are necessary to achievement of a rational and effective pretreatment policy:

- Total elimination, by amendment to the Clean Water Act, of the categorical pretreatment program. The bases for pretreatment requirements would be prevention of POTW interferences causing the POTW to violate its permit, limiting pass through to the extent necessary to prevent violation of water quality standards as reflected in the POTW's permit, and ensuring a quality of sludge consistent with the use or disposal option chosen by the POTW.

- Adoption of revised requirements for the development, implementation, and enforcement of pretreatment programs which place primary authority with and responsibility in POTWs with the NPDES agency (whether EPA or state) having authority to correct POTW failures to meet that responsibility but not to second-guess reasonable efforts by the POTW.

SOCMA believes that these recommended changes in approach are supported by historical lack of progress in achieving environmental goals under the existing national pretreatment strategy. Our recommendations will lead to practical and workable pretreatment programs which further the goal of environmental protection without enormous waste of valuable national resources (money, energy, time, and paper).

Because of its importance, SOCMA recommends that the resolution of pretreatment strategy issues be expedited within EPA. We believe that it is in the best interests of all involved in pretreatment to have a direction adequately defined as soon as possible. To that end, SOCMA would like to assist the Agency in revising and making more effective its pretreatment policy.

We thank you for the opportunity to comment on this important topic.

Sincerely,

Bruce C. Grefrath

Bruce Grefrath
SOCMA

cc: Mr. John E. Daniel,
Chief of Staff

Ms. Martha G. Prothro,
Acting Director Office of Water
Enforcement and Permits

socma SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION, INC.
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August 17, 1983

Mr. E. H. Forsht
Effluent Guidelines Division (WH-552)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, DC 20460

Attention: EGD Docket Clerk, Organic Chemicals, Plastics and Synthetic Fibers Industry (WH-552)

Dear Mr. Forsht:

Enclosed are an unbound original and two bound copies of the comments of the Synthetic Organic Chemical Manufacturers Association, Inc. ("SOCMA") on EPA's proposed regulations establishing effluent limitations guidelines and pretreatment standards for the organic chemicals, plastics and synthetic fibers industry (48 Fed. Reg. 11827 (March 21, 1983)).

SOCMA has a long-standing concern with the pretreatment program, and its comments focus primarily on those proposed standards. Many of SOCMA's members are small firms; more than half of its member companies have annual sales of less than $50 million. In addition, most of SOCMA's members, whether large or small companies, operate small plants. SOCMA is particularly concerned about these regulations as applied to small firms and small plants in the organic chemicals and plastics and synthetic fibers industries.

After careful examination and analysis of EPA's technical and economic support documents, SOCMA has concluded, for reasons which are set forth in detail in the enclosed comments, that the Agency's basis for the proposed pretreatment standards, and for the proposed effluent limitations guidelines, is totally inadequate. This is especially true insofar as the proposals apply to small plants. The proposed regulations must therefore be reconsidered, reevaluated and revised.

In reconsidering its proposal, EPA should thoroughly examine the following matters and possible alternatives which are of special concern to small plants:

- A more precise and realistic identification of industry segments and pollutants which pose a significant national pretreatment problem and exclusion of those which do not.

- Consideration of flow, land availability, and other pertinent factors as a basis for alternative standards or exclusions.

- Alternative standards based upon consideration of the cost-effectiveness of different pretreatment technologies.

- Alternative standards or exclusions based upon a sound assessment of the economic impact of different levels of pretreatment.

- Application of the pretreatment standards only to plants which produce priority pollutants regulated by the pretreatment standards as a product or commercial by-product or which use such regulated priority pollutants as raw materials.

- Deferral of regulations for industry segments for which a sound technical and economic record, with adequate opportunity to comment, cannot be established within EPA's schedule for these regulations.

The scope and content of final pretreatment regulations and standards must reflect a thorough analysis, founded on adequate and meaningful data, of their achievability and economic impact with respect to small plants. It is SOCMA's belief, as more fully set forth in the enclosed comments, that EPA's proposed regulations fall far short of fulfilling this requirement.

SOCMA appreciates the opportunity to participate in this rulemaking proceeding. Please do not hesitate to contact me or Tom Goldberg, Manager, Environmental Affairs, in our Washington Office if you have any questions regarding SOCMA's comments on the proposed regulations.

Sincerely,

Ronald A. Lang

Ronald A. Lang
Executive Director

Enclosures

Mr. ROE. Our next witnesses are the representatives of the National Society of Professional Engineers. We have with us Mr. Kermit L. Prime, chairman, NSPE's Legislative and Government Affairs Committee; Mr. Louis L. Guy, chairman of NSPE's Legislative Education Fund; Mr. Robert J. Haefeli, past president, New Jersey Society of Professional Engineers and Land Surveyors, and Mr. David McDowell, of Buchart-Horn, Incorporated, Lewisburg, Pa.

We want to welcome this distinguished group of professional engineers to our committee. We have had the privilege of commiserating with you and your organization before on many occasions, and we consider your testimony to be extremely valuable to this committee.

The full text of your prepared statements will appear in the record at this point.

[Statements referred to follows]

TESTIMONY OF THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS ON THE FEDERAL WATER POLLUTION CONTROL ACT BEFORE THE SUBCOMMITTEE ON WATER RESOURCES, COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, U.S. HOUSE OF REPRESENTATIVES, NOVEMBER 17, 1983

Mr. Chairman, we appreciate having this opportunity to appear today to provide additional testimony on the Federal Water Pollution Control Act. We are pleased to respond to your request to bring in a panel of specialists to elaborate on some of the points we raised in our October 19 statement before this subcommittee. My name is Kermit L. Prime, P.E., and I am chairman of the Legislative and Government Affairs Committee of the National Society of Professional Engineers and a principal engineer with the Boyle Engineering Corporation in Orlando, Florida. I am accompanied by Louis L. Guy, P.E., chairman of the NSPE Legislative Education Fund and a partner in the firm of Guy and Davis in Burke, Virginia; Robert J. Haefeli, P.E., with the firm of Havens and Emerson, Inc., in Saddle Brook, New Jersey and immediate past president of the New Jersey Society of Professional Engineers and Land Surveyors, Inc., and David McDowell, P.E., with the firm of Buckhart-Horn, Inc., in Lewisburg, Pennsylvania. The National Society of Professional Engineers represents 80,000 individuals in private practice, government, industry, construction, and education, with state societies in every state of the Union.

The topics you asked us to address, today, financing sewage treatment facilities, pretreatment, ocean outfall, and nonpoint source pollution, represent some of the more controversial issues surrounding the Federal Water Pollution Control Act. The engineering profession is deeply involved in the nation's efforts to maintain and improve water quality, and we are happy to provide the subcommittee with an engineering perspective on these matters. We will discuss each of these subjects individually. I will address the financing issues, Dave McDowell will discuss his specialty, pretreatment, Bob Haefeli will address ocean discharge, and Louis Guy will discuss nonpoint source pollution.

FINANCING

Mr. Chairman, when we testified on October 19, there was considerable confusion regarding our position on the construction grants program and our suggestions for alternative financing arrangements. Today we will provide a more detailed, point-by-point discussion of the concepts we are suggesting for the subcommittee's consideration.

First, our members recognize that, despite the progress that has been made in cleaning up our nation's waters since 1972, much remains to be done. The construction grants program has played a major role in bringing about that progress. However, we believe the time has come for Congress to give serious consideration to alternative financial arrangements to support state and local governments for the construction of publicly owned treatment works (POTWs). We strongly believe that options are available which will result in a more efficient and effective use of federal and community dollars. Such options, which I will discuss in a moment, will provide for the construction of more facilities more quickly with a smaller drain on the Federal treasury. Further, they will allow the nation to clean up its water at a

faster rate than would continued reliance on the grants program, assuming comparable levels of funding.

Second, we stress the need to find solutions that are affordable on the community level. In particular, we are extremely sensitive to the need to hold down the user charges paid by individual households. Again, if we are to achieve our ultimate goal—cleaner water—Federal programs must result in the construction of overall pollution abatement systems which are affordable for the communities which operate and build them, and the ratepayers who pay for them.

With these points in mind, we now would like to turn to the construction grants program. We do not believe that the program, as currently structured, is the most effective way to get POTWs built. Furthermore, we do not believe that an increase in the grants program funding is the most effective way to get POTWs built. We take this position for two reasons. First, and most importantly, the very existence of the grants program actually discourages many communities from proceeding with construction, even when they could do so by utilizing local financial resources. Discussions with our consulting firms around the nation have revealed that a great many communities, even those whose chances of ever receiving grant assistance are minimal, are reluctant to go forward as long as there is a prospect for receiving grants in the future. Of course, from the perspective of a local official struggling to balance a community's budget, this would be a logical position. It is difficult to justify undertaking these financial burdents, even if the locality does have the resources, when a grant program exists. Proposals to rapidly expand funding levels exacerbate this problem. Doubling the size of the appropriation would still be inadequate to fund a great many eligible projects for years to come. Such an action clearly would encourage local leaders to delay the pursuit or even consideration of other financing alternatives in hopes of obtaining grant assistance. This is true with the Federal grant covering 55 percent of project cost, and will be compounded if the Federal share is increased to its former level of 75 percent.

Second, we have found that the procedural requirements of the grants program have seriously delayed POTW construction. In fact, many of our consulting firms attempt to avoid projects funded through the construction grants program, simply because of the red tape involved.

Therefore, we propose that the grants program be phased out. Only those projects which are already under construction, or are on the fundable portion of the states' fiscal 1984 priority lists, should receive grant assistance. Basically, we are advocating no new starts under the grants program after fiscal 1984. The subsequent years' grant funding should be allocated to completing those "phase segmented" projects which were started in fiscal year 1984 or before. We understand from sources within the EPA that completing these projects alone could easily total $9 billion to $12 billion.

Our basic purpose is to seek an end to the costs of delaying projects by offering false hopes of future grant funding. While we prefer the 1984 cutoff point, we realize that others may argue for a different place to draw the line. Whatever that point may be, we believe it is imperative that communities across the nation know, in no uncertain terms, who will and who will not receive grants. Only then will those localities which have avoided commiting their own resources have an incentive to do so. We recommend that the EPA formally notify recipients, with the understanding that all those communities which are not so notified will not be eligible to receive grants. Of course, a certain period of time should be allowed for individual communities who feel that they were mistakenly left off the fundable list to appeal, but the general rule should be that those localities not notified cannot expect grant assistance.

We believe that this action alone will result in faster progress toward our clean water goals. As we stated earlier, ther are many communities which do have the resources to finance their own POTWs and related systems, and will proceed with the work once they believe that federal grant assistance will not be forthcoming.

But what about the communities which cannot finance construction out of local resources? We believe there are alternatives to the grants program, alternatives which are more cost efficient. We have not come here today with a detailed proposal as to how such alternatives should be structured. Rather, we have focused on concepts which we hope will be helpful to the subcommittee and the EPA in exploring alternatives. Our basic thesis is that a loan program can be utilized to replace the grants program, and that such a loan program can be implemented without placing unreasonable burdens on ratepayers. To demonstrate this, we have conducted a simplified analysis of the relationship of monthly capital charges to certain assumptions regarding interest rates and grant assistance, attached hereto as Exhibit A.

However, before discussing this analysis directly, I would like to raise a few general points regarding the manner in which the current program works.

We contend that a low interest loan program can be just as economical as the current grants program for many communities. This is so because the grant currently covers only 75 percent of eligible project costs, and in fiscal 1985 will cover only 55 percent. In fact, many states already have lowered the EPA-funded share of project costs to 55 percent. The remaining 25 percent or 45 percent of the project costs is commonly referred to as the "local share" and must be financed by the community through loans, bonds, or other sources. Very few, if any, communities have the cash on hand to pay the local share of a significant project. The interest rates paid by the community to finance the local share of project costs are now approximately 10 to 12 percent, and can vary significantly over time. We suggest that it is possible for the Federal Government to structure a low-interest loan program to cover 100 percent of project costs which would not place unreasonable burdens on the community or ratepayers in comparison to the current grants programs. In essence, we are saying that ratepayers in many communities might be better off if the entire project is funded through a federal low-interest loan than if it is funded in part by a grant and in part by financing at market interest rates.

In order to discuss our calculations, I refer you to Exhibit A, which is a graphic comparison of how grant and loans impact on local ratepayers. On the vertical axis is a scale of monthly charges covering capital costs. Two scales are contained on the horizontal axis, one showing the annual interest rates on loans and the other measuring the percentage of project costs covered by grants. As we stated earlier, the calculations are based on a project with a cost of $10 million built for 2,000 customers (6,000 population). The solid lines running from the lower left-hand corner to the upper-right-hand corner were plotted based on the estimated monthly charges for loans covering *total* project costs at interest rates varying from zero to 15 percent. The higher lines assumes financing for 20 years, while the lower line assumes financing over 40 years. The broken line running from the upper-left-hand corner to the lower-right-hand corner depicts the impacts of grants covering various portions of project costs, with the assumption that the local share is financed over 20 years at a 12 percent rate of interest.

Mr. Chairman, our analysis indicates that with an interest rate somewhere between zero and six percent, the loan program can be comparable to the grants program as far as the ratepayer is concerned. Of course, these results could change based on the interest rates charged in the municipal market, and partial lines have been drawn to depict the slopes for the grant lines at seven and 18 percent. However, our basic point stands: from the community's and the ratepayer's perspectives, a loan program may be a viable alternative.

Furthermore, these findings apply for larger projects serving larger communities. The basic relationships depicted in Exhibit A should still apply. Nevertheless, we realize that our biggest cities and our smallest communities probably have unique problems which will require special attention.

Having made these basic points, it is important to note what we are not saying.

First, we are not suggesting what types of construction should and should not be covered by the loans. Current law restricts the grant eligibility of sewer collector systems after fiscal year 1984, for example, but Congress may wish to make collector systems eligible for the loan program. As our West Virginia Society so ably note on October 20 in testimony before this subcommittee, the omission of collectors from grant eligibility raises the local share of total project costs for communities which lack collector lines in the first place. Congress may choose to make collector lines eligible for low-interest loans, but we would suggest such eligibility be limited to small communities with no collector systems and that federal assistance be given to meet only the needs of the current population, not growth.

Second, we are not suggesting which agency should administer the loan program. Currently both the Environmental Protection Agency and the Farmers Home Administration have programs for the construction of POTWs, and the FmHA loan program generally has seemed to work well. However, we are not prepared at this point to suggest where the program should be lodged. We do urge that maximum discretion be given to the states in the actual operation of the program. We endorse the general concept of state "infrastructure banks," and we suggest that consideration be given to providing the states with seed money to set up revolving loan funds specifically for wastewater treatment projects as a viable alternative.

Third, we are not suggesting any set interest rate. Rather, we would note that the rates must be low enough in comparison to market rates to make the utilization of loans attractive to communities which require some kind of federal assistance. Con-

gress may even wish to leave the setting of actal interest rates to the discretion of the states or the administering agency.

Fourth, we would note that direct loans may not even be necessary. Congress could choose to simply revise Section 213 of the current statute, which relates to loan guarantees for POTW construction when conventional municipal financing is not feasible. The Federal Government could achieve comparable results by guaranteeing bonds and loans made by the private sector and subsidizing the interest rates. This concept would have the potential result of "leveraging" the federal funding significantly; thereby financing many times the projects fundable with grants in any given year. We recognize, however, that there also is a risk involved this approach, in that it may result in the Federal Government committing itself to interest subsidy payment over many years and accepting contingent liability if a community defaults.

Finally, we are not recommending that the same approach be utilized for all communities. As we mentioned earlier, very large cities and very small communities have special problems. For example, we are all familiar with cases of one large metropolitan area absorbing almost all of a state's grant allotment under the current program. In these instances, Congress may wish to provide special assistance on a case-by-case or a line item appropriation basis. Likewise, a special program may be needed for the very smallest localities. Again, we are not necessarily advocating these steps; we simply suggest that Congress may wish to explore such options.

In order to avoid the confusion that was evident during our last appearance before the subcommittee, we wish to emphasize that we are talking about phasing out the grants program and replacing it with low-interest loans (or loan guarantees). We have provided some general concepts regarding how such a program might work, and we hope our analysis will be useful to the subcommittee. We are not saying this is the only answer. Rather, we are trying to demonstrate that good alternatives clearly are available. We understand that the EPA is initiating an analysis of options for the future of the construction grants program or alternatives to that program, and we plan to submit our views to the agency. Further, we would be happy to work with this subcommittee to continue developing alternatives.

To recap, we believe false hopes regarding future grant availability have resulted in many communities delaying construction even when they could finance such construction with local funding. A firm decision to phase out the grants program may eliminate this rationale for delay in many communities. For those communities which do not receive grants and need assistance, a loan program is an attractive alternative, provided it is not encumbered with the same governmental controls and red tape that have characterized the grants program.

In addition to affordability, we believe a loan program has other advantages. First, a sum of money given out as loans can finance more projects than the same amount given as grants. particularly if the loan program is set up through a revolving fund, or through many revolving funds administered at the state level, so that the money can be utilized again as loans are repaid. Even if the interest rate charged is not adequate to keep up with inflation, there will still be a source of money available in the future to help finance additional projects. Also, a loan program, especially if administered on the state level, should reduce some of the procedural requirements currently associated with the grants program which introduce delay. Finally, because the communities are paying for these improvements with their own funds, they would more realistically analyze their needs. To further emphasize these points, we note that the State of New Jersey has stopped issuing eight percent state grant participation in the non-federal share and has implemented a "no-interest," 20-year loan for that share effective in October of this year.

PRIVATIZATION

We also would like to comment briefly on another potential alternative for funding wastewater treatment—the use of private capital in public/private partnerships, now commonly referred to as "privatization." Our definition of privatization is simply that—the use of private capital. We do not expand this definition to include the issue of the pros and cons of separate versus combined design/construction and/or separate versus combined construction/operation. The tax code currently provides incentives for private sector companies to finance the construction of new wastewater treatment facilities by using nonpublic funds and to own and operate such facilities while leasing them back to the communities. However, proposed legislation under the jurisdiction of the Ways and Means Committee would close off this option by eliminating the tax benefits to the companies and the public/private partnerships. While we realize that this particular issue falls outside of the Public

Works Committee's jurisdiction, we would like to point out that current tax benefits have been responsible for some communities moving forward with their plans for upgrading wastewater treatment and for resource recovery facilities. We stress that we are talking about new construction, not paper transactions transferring the ownership of existing assets. The provisions in question help achieve the goal of pollution abatement and community improvement, rather than just a better balance sheet. We urge all those members of Congress who are concerned about clean water to defend those provisions of the tax code as they apply to new construction of water and sewage treatment and resource recovery facilities.

PRETREATMENT

While we did not address the pretreatment issue in our October 19 statement, we were asked to discuss it today, especially as it relates to local options for pretreatment programs and ocean discharge. We have no official position on changes in the statute, since EPA has only recently reached the point of having most of the pretreatment standards in place, and it is too early to judge the program's effectiveness. However, many of our members who are engaged in the mangement of large treatment facilities report that it is extremely difficult to police the hundreds of industries that discharge into their POTWs, and it is often more cost effective for the plant to improve its treatment capabilities than to attempt such regulation. Some of them believe that in such cases, the POTW should have the option of choosing the most efficient manner for using its resources, rather than be automatically required to enforce pretreatment for individual categories of pollutants. Because of the infinite variation of biological and chemcial actions in the sewage treatment process, regulations must allow flexibility for adjustment to a specific situation. Appropriate investigative and assessment requirements are already imposed on the POTW due to the necessity to meet the NPDES discharge requirements and the concentrations permitted for the economic disposal of sludge on agricultural lands or other methods of disposal. The effluent limitations or technology-based standards can and should be adequate treatment combined with necessary pretreatment to provide an effluent quality consistent with the use of the receiving stream while simultaneously not causing sludge disposal problems. Many of our members who specialize in this type of work believe that the proper place for this decision is at the local level, with the state and Federal Government monitoring compliance with the POTW permit requirements related to both NPDES and sludge disposal. They support a proposed amendment which would allow a local option for determining the level of pretreatment, as long as the discharge from the POTW meets EPA standards.

OCEAN DISCHARGE WAIVERS

As you will recall, Mr. Chairman, when we last testified, Congressman Packard specifically requested our views on how to address the ocean discharge issue in a manner which would allow greater flixibility regarding waivers. To further develop our statement, we consulted with our members in some of the nation's major POTWs in coastal areas, including the County Sanitation Districts of Los Angeles. The following comments are based on these consultations.

We endorse ocean waivers for those committees that discharge into the deep open ocean and can demonstrate that a less than secondary effluent will not result in any adverse impact on the marine environment or threaten the public health or safety. By and large the language of the 1977 Clean Water Act Amendments provides the opportunity for coastal communities to make such a demonstration.

On the subject of waivers for discharge into estuarine waters, we must frankly admit to a difference of opinion between our members who are involved in the management of coastal POTWs. Some argue that EPA has granted very few waivers into estuarine areas, and that the 1977 language is adequate to guard against abuse of the waivers. Others maintain that the 1977 amendments allowed many communities to apply for waivers even though the waiver concept was not intended for them, which oftentimes delayed the construction of secondary treatment facilities. These latter individuals urge that in regard to waivers, the statute be amended to require a minimum level of primary treatment and to require appropriate dilution (or mixing) in the receiving water. As a Society, we will not take a formal position on this specific question at this time.

Regarding the definition of primary treatment, we wish to point out that the requirement for chlorination (chemcial treatment) to control pathogens is unnecessary, expensive, and potentially damaging to the environment. We are specifically referring to those situations where proper design of deep ocean outfall pipes has insured that good initial mixing, coupled with the natural bio-toxic effect of sea water

on coliforms as well as density stratification has enabled many coastal communities to meet bacteriological standards in the ocean without chemical disinfection.

We further feel that proposed language regarding a pretreatment program for ocean discharges is unduly restrictive. The current 201(h) language coupled with the pretreatment program language contained in other sections of the current statute is adequate to control discharges of toxic pollutants into the marine environment. We recommend against the proposed changes.

Finally, we note that some proposed amendments to this and other provisions of the current statute have been offered to correct what is perceived as poor implementation of the law. However, if the present language of the statute is acceptable, then we would suggest that the statute not be amended and other actions be taken to improve implementation.

NONPOINT SOURCE POLLUTION

There is a growing realization that we connot solve our water problems just by focusing on point source pollution. We could totally eliminate pollution from point sources, and still have major problems resulting from urban and rural runoff. In fact, many states have documented that fact that for them, nonpoint source pollution is the greater problem.

The sources and solutions for nonpoint source pollution vary widely. For example, the rural runoff problem is often a nutrient problem, and is quite different from the urban problem, where the focus is often on toxics. Furthermore, the topography, soil type, land use, amount of rainfall, and other factors vary widely throughout the nation. These also are factors which affect the solutions to the nonpoint source pollution problem. So, the best solutions to the problem also will vary widely throughout the nation.

The technology for correcting these runoff problems exists, by and large. Implementing the corrective measures is an institutional problem which has not been adequately addressed. The issue is broader than the EPA and corrective measures will require revisions to statutes beyond the Federal Water Pollution Control Act. For example, the Department of Agriculture must be brought into the efforts to solve the nonpoint problem. The various agencies of the USDA already have addressed some aspects of this issue, and the involvement of the agricultural community is essential if this issue is to be effectively addressed.

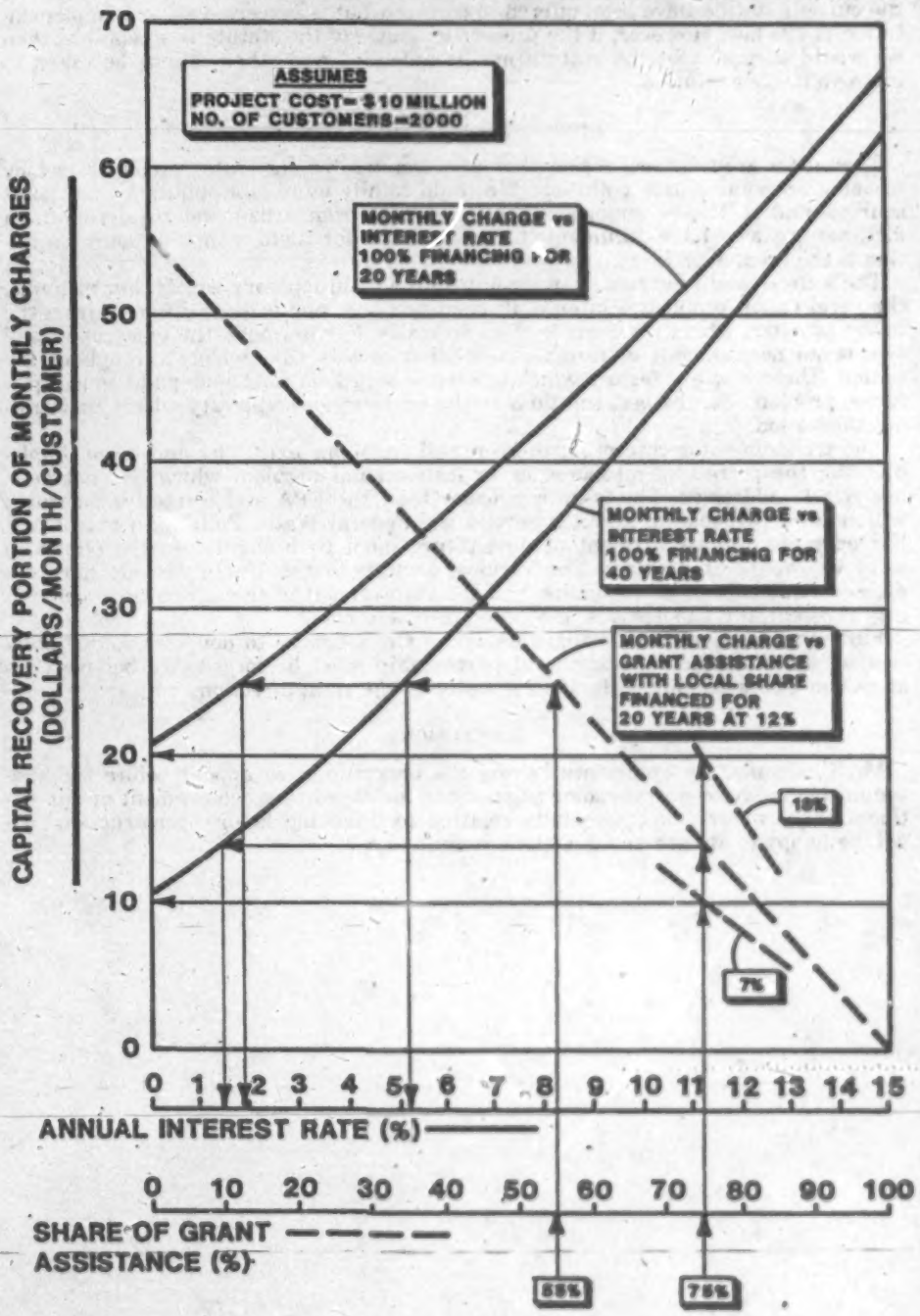
Furthermore, given the localized nature of the solutions to nonpoint source polution, an effective federal/state/local partnership must be forged. We believe Congressman Oberstar's bill, H.R. 4037, is a step in the right direction.

CONCLUSIONS

Mr. Chairman, we appreciate having the opportunity to appear before the subcommittee today to provide some suggestions for expediting achievement of our national clean water goals, especially relating to financing facility construction. We will be happy to answer any questions you may have.

EXHIBIT A

RELATIONSHIP OF MONTHLY CAPITAL CHARGES TO CERTAIN ASSUMPTIONS REGARDING INTEREST RATES & GRANT ASSISTANCE



Mr. ROE. Please proceed.

TESTIMONY OF KERMIT L. PRIME, CHAIRMAN, NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS' LEGISLATIVE AND GOVERNMENT AFFAIRS COMMITTEE; LOUIS L. GUY, CHAIRMAN, NSPE'S LEGISLATIVE EDUCATION FUND; ROBERT J. HAEFELI, PAST PRESIDENT, NEW JERSEY SOCIETY OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS, INC.; DAVID McDOWELL, BUCHART-HORN, INC., LEWISBURG, PA., AND BILL FOGARTY, STAFF, LEGISLATIVE AND GOVERNMENT AFFAIRS DEPARTMENT

Mr. PRIME. Thank you, Mr. Chairman.

In light of the late hour, I may choose to summarize the financial portion, which is the part that I was going to give in adjunct to the past testimony, and ask that the others read theirs. Theirs are relatively brief.

We are here, if you will recall, at your specific request, to come back with a panel that could speak to each of these issues.

Before we get into the presentation, I would also like to introduce Mr. Bill Fogarty, with the staff of the NSPE legislative and Government affairs department.

Mr. ROE. Mr. Fogarty, welcome.

Mr. PRIME. You have already made the introductions. I am Kermit Prime. I was here last time. My area of expertise, if you will, is the financing issue. The thing that we failed to make clear, I believe, last time—and I will accept responsibility for that—was that the National Society of Professional Engineers is recommending an end to the grant program. We would like to then——

Mr. ROE. I remember that issue well.

Mr. PRIME. We would like to see the Federal Government move to another type of program. We are not advocating discontinuance of Federal support of some type. There are two things in this testimony that we feel are viable alternatives, and then there are many subalternatives that we feel may be viable within those two primary families of alternatives. The two I am referring to would be a greater dependence on a loan program, where the interest rates could be subsidized to the point that the rates paid by the users of the systems would be comparable to the rates under a grant program.

To illustrate that point, we prepared figure A, or exhibit A, which is attached to the back of our testimony. I understand that engineers relate to graphs better than certain other professions. I would like to take you through that graph very briefly and then talk to the second possible alternative.

Again, the purpose of the graph is to illustrate the relative impact of different assumptions regarding interest rates and grant assistance on the ratepayer. It relates only to the capital portion of the rate. It does not include a consideration of O&M. The particular numbers here assume a project cost of $10 million and a system that would serve 2,000 customers. Now, those are households, and would probably relate to more like 6,000 people in a community. The solid lines represent 100 percent financing, the solid lines going from the lower left to the upper right portion of the graph.

The top line is for a 20-year financing program. The bottom solid line is for a 40-year financing program. The line is a function of interest rate as it relates to monthly impacts. For example, if you have, let us say, a 5-percent interest rate, it would relate to about a $25 per month capital cost per household.

If you understand that, then we will move and look at the dashed lines on the graph. These lines relate to a share of grant assistance as it relates to the monthly fees. The dashed line goes from the lower right to the upper left portion of the graph. Obviously, as your grant participation goes down toward zero, the cost to the users increases. And there are two, very small dashed lines, because the long line relates to 12 percent, which we feel is a good assumption in today's financial market. It could be higher or lower. And the lower line is 7 percent; the higher of the two lines is 18 percent.

Now, let me make my point. If you assume that you are getting 75 percent grants, look at the little box on the bottom right-hand side of the document. If you follow that line up, you see that is 75 percent. You go up to the dashed line and then move over, and you see that would relate to about a $13 to $14 per month per customer rate for the capital component. But interestingly, you can stop where it crosses the bottom solid line and come down and see that that would be equal to about a 1.5-percent loan for 40 years for the entire cost of the project, not the local share. Conversely, if you use the 55-percent assumption, you can go up to where it intersects the dashed line, move left, and you will see that that intersects both of the 100-percent loan lines. Let us take the first one, which is the 40-year line, and come down, and you will see that that would be equal to about a 5¼-percent, 100-percent loan for the entire cost of the project. Or, you can move further to the left, and then come down, and it is equal to about a 2-percent loan for the entire cost of the project for 20 years.

Mr. Chairman, the purpose of the graph is to support the statement that the loan program can have the same financial impact on the community as a grant program. It has the other benefits that we spoke to when we were before you last month.

Are there any questions about that?

Mr. ROE. Not from me, there isn't.

Mr. PRIME. All right. The second issue is privatization. We do feel that there are some activities in other committees within the House that would prevent privatization from being a viable alternative.

Mr. ROE. Like right now.

Mr. PRIME. Yes, sir. And we would just want to point out to you that that activity could make a potentially viable alternative as a source of funding no longer viable. If you are aware of that, we are sure and confident that you will take the actions necessary that you deem appropriate. It has potential. I have some personal experience with that concept, and believe that it is a potentially viable alternative.

Mr. ROE. Let's just speak to that for a minute. We know there are a number of groups and organizations and companies now that are providing operating expertise, if you like, to different municipalities and cities and regions, whatever, on a private contract

basis. We come back and say that as we build—and some of them are quite sophisticated—plants, that the plant is not going to just work mechanically; somebody has got to know how to operate it, is what it amounts to, to achieve the goals that we are trying to achieve. I recall going back into the sixties, when there was a great deal of development taking place in suburban areas, and they had the so-called famous package plants. None of the two are alike, as I recall it, and none, or very few, of the municipalities involved that were hit with that growth-type of situation had the expertise, nor could they hire the expertise, to even run them. And I do recall in my own community, going back to the early sixties, that we had a proliferation, if you like, of those particular types of plants. The governing body was adroit at the time and forced that to be consolidated, because we could not have all different types of plants all over the town, each one a different type of processing and so forth and so on.

So one of the things that we are facing, I think, on a national basis—and therefore, a State-to-State basis—is putting together a cadre of qualified people on a national basis to be able to operate the plants and to be able to achieve the goals. And therefore, that has generated new business opportunities, if you like, where companies have entered into the point of view as experts, but we will come in and operate the plant for you on an O&M basis, whatever the case may be, and size of the plant location and so forth, and they are contracting out that kind of service. And that gave rise to the point of view, well, if we can do that, why don't we have private enterprise enter into this on a longer term basis, because on the overall basis, we feel that we could cost-effectively do this less expensively and more effectively and more efficiently than so-called publicly owned systems. Isn't that basically what the root of this is about?

Mr. PRIME. That is a part of it, and all of the issues that you spoke to are very accurate. All of those problems have occurred, and the private sector has mobilized to help with the operations problem. But the term, privatization, really carries the concept one step further——

Mr. ROE. Similar to industrial revenue bonds?

Mr. PRIME. Similar, but the private sector gets the benefits of the depreciation and the tax writeoffs and so forth. As part of that, they must then own the facilities for some period of time; that can be negotiated. Typically, they want long-term ownership to get the maximum tax benefits. Well, those tax writeoffs can be brought back through the agreements that are discussed between the public/private sector in the form, or having the effect, if you will, of a grant, in terms of the effect on the ratepayers. So that is why we bring it up today, is the impact that those tax benefits have for the private sector so that the ratepayers can enjoy an effective grant through another mechanism.

Mr. ROE. And a stabilized use rate. I think in effect, what we are saying, those people who have said that we should eliminate that situation or to eliminate that opportunity that exists now, they are only looking at it from a point of view of exposure to the Treasury, rather than the other end of it, as to what the return is on that investment.

Mr. PRIME. That is correct.

Mr. ROE. OK. I understand the issue. I do not know whether anybody else does, but go ahead.

Mr. PRIME. Mr. Chairman, you brought up a point that Bob Haefeli on our panel would like to speak to for a moment.

Mr. HAEFELI. Relative to operator training, Mr. Chairman, it is my opinion that the present level of training through the EPA program for wastewater treatment operators is relatively modest, and it is worked out with the State colleges and assistance of the Water Pollution Control Federation. I would like to suggest that that program could be expanded to meet the needs of a privatization concern.

Mr. PRIME. And before we leave the point and I turn it over to the other members of the panel, I would like to emphasize, Mr. Chairman, that we are talking here about privatization in the context of new construction, and not as a departure from the conventional owner/engineer relationships. We want to make that point very clear. But we are saying we would advocate seeing that concept explored further and not close the door through tax law changes that may not be in the best interest of the public as a whole.

With that, if there are no questions about our position on financing, I would turn the presentation over to Dave McDowell, who is a professional engineer and here to speak to you on the pretreatment issue.

Mr. ROE. Mr. McDowell.

Mr. MCDOWELL. Mr. Chairman, while we did not address the pretreatment issue in our October 19 statement, we were asked to discuss it today, especially as it relates to local options for pretreatment programs and ocean discharge. We have no official position on changes in the statute, since EPA has only recently reached the point of having most of the pretreatment standards in place, and it is too early to judge the program's effectiveness. However, many of our members who are engaged in the management of large treatment facilities report that it is extremely difficult to police the hundreds of industries that discharge into their POTW's, and it is often more cost-effective for the plant to improve its treatment capabilities than to attempt such regulation. Some of them believe that in such cases, the POTW should have the option of choosing the most efficient manner for using its resources, rather than be automatically required to enforce pretreatment for individual categories of pollutants. Because of the infinite variation of biological and chemical actions in the sewage treatment process, regulations must allow flexibility for adjustment to a specific situation. Appropriate investigative and assessment requirements are already imposed on the POTW due to the necessity to meet the NPDES discharge requirements and the concentrations permitted for the economic disposal of sludge on agricultural lands or other methods of disposal. The effluent limitations on technology-based standards can and should be adequate treatment combined with necessary pretreatment to provide an effluent quality consistent with the use of the receiving stream, while simultaneously not causing sludge disposal problems.

Many of our members who specialize in this type of work believe that the proper place for this decision is at the local level, with the State and Federal Government monitoring compliance with the POTW permit requirements related to both NPDES and sludge disposal. They support a proposed amendment which would allow a local option for determining the level of pretreatment, as long as the discharge from the POTW meets EPA standards.

Mr. ROE. I think you are making a very important point. The first point you made—and it was a good one—I am just thinking about our own area in New Jersey. If you have literally thousands of industries involved, going into a regional sewer system, where is the mechanism going to be established to police those? And I do not mean "policing"—and I know you did not mean that either, in the sense—but monitoring them—if they are not monitored substantively, then how is anybody going to know how that is operating, whether it is polluting or not?

Mr. MCDOWELL. Well, the basic idea is to protect the streams. And the streams are being protected if the POTW discharge meets the permit requirements—we hope. And in order to meet the POTW requirements, the POTW has to monitor what comes into their plant. And of course, in monitoring what comes into their plant, one of the first things that happens is if anything happens to the biological system, or if their sludge concentration gets to the point where they can, for example, no longer put it on growing poplar trees, or whatever their particular area of disposal is, as soon as they run into that kind of trouble, they have got to go back out to the system and monitor at manholes successively out through the system and try to find out where this came from. That is difficult and it is hard to do. But the fact still remains that most POTW's in operation right now do that at the present time. And they have limits already on their regulations as to what industry can discharge.

It is interesting to note that when the electroplating standards came out, EPA requirements were quite high, and in the course of trying to do a pretreatment program, you would get into a fight with industry all the time, because they wanted to use the EPA limits. They just came out with new limits for the metal manufacturers. On two of the projects with which I am familiar, our metal requirements were within—met the new standards in all except the case of lead, where we were off by seven hundred parts per million. And that was purely because we had to control the operation within the sewage treatment plant, and we had to be able to put the sludge someplace when we got through with the operation.

Mr. ROE. We will have a recess for a few minutes. We have to go and vote. We are on the second call, so if you would excuse us for a few minutes, we will be right back.

[Short recess.]

Mr. ROE. Now, we were discussing with Mr. McDowell.

Mr. MCDOWELL. I had just responded to one of your questions, and if there are any other questions, I would be happy to try to respond to them.

Mr. ROE. No, I do not think I have any at the moment.

Now, who is next?

Mr. McDowell. I would like to call on Robert Haefeli to continue our discussion.

Mr. Roe. OK.

Mr. Haefeli. Thank you.

On October 19, in the previous testimony of our National Society of Professional Engineers, it was brought out by Congressman Packard that he would like to have views on how to address the ocean discharge issue in a way which would allow greater flexibility regarding the waiver system.

To further develop that previous statement, we consulted members in some of our major POTW's in coastal areas, including the county sanitation districts of Los Angeles. The following comments are based on these consultations.

We endorse ocean waivers for those communities that discharge into the deep ocean waters and can demonstrate that a less-than-secondary effluent will not result in any adverse impact on the marine environment or threaten the public health or safety. By and large, the language of the 1977 Clean Water Act Amendments provides the opportunity for coastal communities to make such a demonstration.

On the subject of waivers for discharge into estuarine waters, we must frankly admit to a difference of opinion between our members who are involved in the management of coastal POTWs. Some argue that EPA has granted very few waivers into estuarine areas, and that the 1977 language is adequate to guard against abuse of the waivers. Others maintain that the 1977 amendments allowed many communities to apply for waivers, even though the waiver concept was not intended for them which oftentimes delayed the construction of secondary treatment facilities. These latter individuals urge that in regard to waivers, the statute be amended to require a minimum level of primary treatment and to require appropriate dilution—or mixing—in the receiving water. As a Society, we will not take a formal position on this specific question at this time.

Regarding the definition of primary treatment, we wish to point out that the requirement for chlorination, that is, chemical treatment, to control pathogens, is unnecessary, expensive, and potentially damaging to the environment. We are specifically referring to those situations where proper design of deep ocean outfall pipes has insured that good initial mixing, coupled with the natural biotoxic effect of seawater on coliforms as well as density stratification has enabled many coastal communities to meet bacteriological standards in the ocean without chemical disinfection.

To digress for a moment, the Delaware River Basin Commission of New Jersey, New York, Pennsylvania, and Delaware, is now in the process of going out for public hearing on a proposal that would waive the requirements for chlorination of POTWs during the winter months—that is, from November through March. Those hearings are coming up this next month.

To continue, we further feel that proposed language regarding a pretreatment program for ocean discharges is unduly restrictive. The current section 201(h) language, coupled with the pretreatment program language contained in other sections of the current stat-

ute is adequate to control discharges of toxic pollutants into the marine environment. We recommend against the proposed change.

Finally, we note that some proposed amendments to this and other provisions of the current statute have been offered to correct what is perceived as poor implementation of the law. However, if the present language of the statute is acceptable, then we would suggest that the statute not be amended, and other actions be taken to improve implementation.

That concludes the formal statement on this subject.

Mr. PRIME. And now, we would like to introduce Mr. Lou Guy—do you want to save the questions?

Mr. ROE. Oh, yes. We are thinking. Go ahead.

Mr. PRIME. Let me introduce Lou Guy, to talk to you on the nonpoint source pollution problem.

Mr. GUY. Thank you, Kermit.

Mr. Chairman, in the engineering community, there is a growing realization that we cannot solve our water problems just by focusing on point source pollution. As you are aware, we could totally eliminate pollution from point sources and still have major water quality problems resulting from urban runoff and from rural runoff. In fact, a number of States are now documenting the fact that, for them, nonpoint source pollution is the greater problem remaining. But it is a different problem. The sources and solutions for nonpoint source pollution vary, very widely. For example, the rural runoff problem is very often a nutrient problem, and is quite different from the urban problem, where the focus is frequently on toxics.

Furthermore, from the engineering viewpoint, the topography, soil type, land use, amount of rainfall, and other factors vary widely throughout the Nation. All of these are factors which affect the solutions to the nonpoint source pollution problem, so the best solutions are going to vary, very widely.

The technology for correcting these runoff problems exists by and large, but implementing the corrective measures is an institutional problem as well as an engineering problem, and we think that the institutional factors are going to need a lot of work. The issue is considerably broader than the EPA, and the corrective measures are going to require revisions to statutes beyond the Federal Water Pollution Control Act.

At the Federal level, the Department of Agriculture must be brought into the efforts to solve the nonpoint problem, and the State ggriculature departments also need to play a role. The various agencies of USDA have already addressed some aspects of this issue and the involvement of the agricultural community is essential if we are going to address the issue effectively.

Furthermore, given the localized nature of the solutions to nonpoint source pollution, an effective Federal, State and local partnership must be forged. For this reason, we believe that Congressman Oberstar's bill, H.R. 4037, is a step in the right direction, building on the information that has been developed.

Several of us were here this morning and heard the testimony concerning Congressman Dyson's amendments and the Chesapeake Bay, presented as a prototype program that would help establish how nonpoint pollution problems could be solved. NSPE has no po-

sition on Congressman Dyson's amendments, but I think this is an example of the Federal, State, local partnership that we believe needs to be demonstrated. It could be a very healthy step in the direction of showing what can be done at correct nonpoint source problems, building on the data that has been developed for the bay area.

This completes our testimony, Mr. Chairman. NSPE is very appreciative of the opportunity to return for this additional input and to give you some additional suggestions for expediting achievement of our national clean water goals, especially concerning the financing, which we think is a major issue.

We on the panel would be very happy to answer any questions you might have.

Mr. ROE. Well, we want to thank you for your help and your rereview of the issues that we spoke of the last time, and we concur with you, Mr. Guy, that in fact, in the majority of the testimony received on nonpoint source, to throw everything into the problem of nonpoint source—I am thinking both municipal and industrial—is a gross mistake in the first place, because there is not any panacea to solve that issue unless it is broken down into respective categories.

One of the things that came out of testimony yesterday which is a germ of an idea was that those items and those elements that had not been included in point source, that could be identified, after a process, to be point source discharges in the other category—acid mine waste, we spoke of, and mine-tailings, maybe concentrated feedlots—could be treated, once they are identified in the process, as point source discharges. Part of the thought process that is emerging here is maybe in that kind of a basis, we ought to be taking a step to get into that nonpoint source area by saying if we have located and we have documented through the 208 process and the management process that we do have isolated elements that are in there that could be treated as point source, whether we have a loan program or a grant program, should they not be included in that area, because we can identify them. I think we are at a point now of identifying the issue. So that has been helpful to us, and we appreciate your looking into that.

The gentleman from Minnesota.

Mr. STANGELAND. I have no questions, Mr. Chairman. I just think that their testimony is excellent, and it again just adds to the record and gives us a well-rounded foundation which, after extensive days of hearings, I think will enable us to move ahead and accomplish some things.

Mr. ROE. Are there further questions?

[No response.]

Mr. ROE. The one thing that sticks the toughest, Mr. McDowell, in what to do, is the pretreatment and the relationship of combined sewers, and what we do with the sludge coming out of the sewer plants. That does not have a simple solution. It just is not a simple solution. And I appreciate, when you do speak of the issue that, before 1972, pollution control was not something that was not being carried out—maybe not to the degree that it has been since 1972, or the public recognition of it—but having said that, you cannot put the world through the eye of a needle, either, and I

think that is what you are leading to, that there are productive and different regions through the country, wherever they are, that they ought to be given a chance to work and not try to replace the whole structure. I think basically, that is what you were saying.

Mr. McDowell. That is correct.

Mr. Roe. The gentleman from Pennsylvania.

Mr. Clinger. Thank you, Mr. Chairman, I have just one question. I am sorry I was not here to hear all of the testimony, but I will certainly read the testimony of the association with great care, because over the years, I think your association has provided us with extremely valuable input as we have tried to shape the laws.

The only question I have is this. Would you generally agree with the estimates that we have had from other witnesses as to the scope of the nonpoint source pollution problem? It has been suggested that it is now, given the history you have had of taking care of point source pollution, significantly the largest problem that we really face down the road. Would you agree with that assessment?

Mr. Guy. Yes, sir. I think the order of magnitude of the problems originally may have been about the same, but we have made so much progress on point sources, and we have made so little progress on nonpoint sources. It obviously varies tremendously from river basin to river basin—but speaking on a national basis, nonpoint sources probably are the largest problem facing us.

Mr. Clinger. And you indicate that you feel we do have the technology to address the problem.

Mr. Guy. Yes, sir. We think the technology is available to address it, but it is not going to be one technology applied to all of the problems. It is such a wide range of problems that there are going to be different technologies, and much of the solution is not going to be technical. It is going to be institutional and educational. A lot of it is going to be educational.

Mr. Clinger. Better farming practices, better mining practices, et cetera.

Mr. Guy. Yes, sir—making the public aware, for example, that too much generosity in spreading fertilizer on lawns pays a price downstream. So it is going to be a more complicated solution because it is going to involve a lot more people. It is a lot more difficult to deal with institutionally. But we think the solutions are available.

Part of the difficulty is going to be to have enough accurate data to know which solutions to push for which particular river basins. That is where I think the 7-year study of the Chesapeake Bay gives us a demonstration opportunity that is large enough and diverse enough to move forward in implementing a wide variety of solutions for the different problems that are within the Bay region.

Mr. Prime. Mr. Clinger, I think Mr. Haefeli would like to add to that.

Mr. Clinger. Please, Mr. Haefeli.

Mr. Haefeli. Thank you, sir.

I had the pleasant experience of being involved in a section 208 water quality management study in central New Jersey, our largest river basin, the Raretan River. It is only 800 square miles—a far cry from the Chesapeake Bay—however, we found that at least half of the water quality deterioration could be directly attributed

to nonpoint source pollution, namely, runoff from the land, whether it be farmland or rural or urban land or what, forests or not. And we developed a number of strategies for addressing these various causes of nonpoint source pollution.

One of the things I would like to suggest from a personal point is that Mr. Oberstar's bill on H.R. 4037 will go a long way to promote the control of nonpoint source pollution. However, I would like to see a specific mention of an educational method of addressing the problem. I personally feel that a great deal of the nonpoint source pollution is from the land management practices, from land use developers for residential properties, commercial, industrial, from the farms themselves, and a great deal of it is a natural background, over which we will have very little control, such as forests, decayed vegetation, and so on.

But I have talked to some of the people in Jersey's soil conservation service, in both the USDA, Department of Agriculture, and the State soil conservation commission, and some of them say, "Hey, we are doing good now. We can show the farmers what to do, and they are not using excess fertilizers and pesticides and herbicides. Don't bother. Get after the developers of the residential and commercial properties." Well, I sort of contest that, and I have found excessive use of these manufactured items in all segments of our society, and I think it is a matter of education, of teaching people what to use, how much to use. Don't overdo it, and save yourselves some bucks; don't buy a couple of extra bags of fertilizer. It won't do you any good. It will just ruin the pond down below.

I would like to see a portion of the funding on Mr. Oberstar's bill go directly toward an educational system throughout the country, directed to the farmers of one segment, through the granges and the cooperatives, with the help of the Agricultural Extensive Service and the Soil Conservation Service agencies—perhaps even to the schools, elementary, secondary and high schools—some training on what soil erosion and sedimentation problems can do.

Also, we have the residents. I did a study for a lake which was bounded by residences all around the shoreline, and it was highly contaminated with nutrients. This caused tremendous peagreen water in July and August. A lot of that problem was because of the excess use of their fertilizers on their lawns and gardens. We had a meeting of these people, several hundred residents, and they did not realize that they were wasting money, buying this material that was not needed.

So there is, I think, dire need for an educational program. It does not have to wait for studies. We have enough general knowledge of the available techniques. I think if people would just learn how to better use their backyards and their frontyards and their farms, that would do quite a bit to reduce the contamination.

Thank you.

Mr. CLINGER. Well, I think you make an excellent point, in the two things that you have pointed out to me, and that is the need for an educational component in addressing this problem, which is so different from the point source problem. Point source control is really more of a technically-oriented problem. This really is a question of getting the informed cooperation of large segments of the population. The second thing I think you stressed is the need for

flexibility, that we cannot lock this into very rigid statutory controls because the water basins vary, the nonpoint source problem varies from basin to basin, and that we should provide the flexibility.

I thank you all for your very excellent testimony.

Mr. ROE. I thank all of you for your time and for the excellent preparatory work that you did. We greatly appreciate it.

Mr. PRIME. Thank you, Mr. Chairman.

Mr. ROE. Our next witness for today is Mr. Andrew A. Holtan, chairman of the Governmental Affairs Committee, National Environmental Training Association.

We want to welcome you back, Mr. Holtan to our committee. I recall that we were discussing with you the last time the training programs that are taking place, both in educating our operators and basically educating people in the issue we are speaking to, and you were going to look into that further. Have you got some additional thoughts you want to express to us at this point?

[The following was received for the record:]

STATEMENT PREPARED AND SUBMITTED ON BEHALF OF THE NATIONAL ENVIRONMENTAL TRAINING ASSOCIATION

INTRODUCTION

Thank you for the second opportunity to provide testimony before the U.S. House Committee on Public Works and Transportation. As before this testimony is presented on behalf of the National Environmental Training Association (NETA). My name is Andrew A. Holtan and I am Chairperson of the NETA Governmental Affairs Committee.

BACKGROUND

At the conclusion of my previous testimony you requested that I research two general questions regarding the state-of-the-art of training in the U.S. Specifically you requested an update on what is currently being done in training and conversely what is not being done. Intuitively this poses the question of what should be done and how.

These very same questions have been posed by the NETA membership as a challenge to the 1980 decision by EPA stating that the Federal role and responsibility in training was complete. Our membership refused to accept this position and began to make their concerns known to their Congressional Legislators.

It is NETA's view that a small investment in training can protect the integrity of billions of dollars of construction financing and ensure that plants are operating at maximum efficiency thereby achieving the National goal of improved water quality.

NATIONAL PLAN

Ultimately we believe that the responsibility for actually conducting such training and implementing ongoing mechanisms for financing does lie at the state and local levels. However, we believe that there remains a key interim federal role to do four things:

(1) Access existing capabilities of various state institutions to provide training.
(2) Develop models of successful training programs.
(3) Develop models of mechanisms to achieve financial self sufficiency.
(4) Provide technical assistance to the states in utilizing these models.

To be effective however all of this must be done within the context of a well though out and orderly plan of action. Therefore NETA proposed federal support for a state-of-the-art survey as the basis for the development of a National Tranining Plan.

Such a plan would evaluate the training needs and training resources and provide for a concerted and coordinated effort to develop the capabilities of the states to conduct an ongoing comprehensive and effective training program which is programmatically and fiscally self sufficient. The concept of a National Training Plan is outlined in Appendix I.

CONGRESSIONAL ADD-ON BUDGET

For the past three years through the combined efforts of the NETA grassroots membership and Congressional committees such as this, the Congress has shown its sensitivity to the critical role played by training and provided a budget add-on training.

In the first two years the Congressional add-on training funds were awarded to the 109 (b) training centers, to the state water quality regulatory agencies and to organizations outside the state structure for the general purpose of providing training and achieving state self sufficiency in training.

During the second year of funding, concerns developed that perhaps not all of the training funds were being spent as effectively as possible on training. Therefore in the third year the Congress specified that the funds were to be used to evaluate how the last two years of training funds were spent.

NETA SURVEY

As the only national association exclusively dedicated to environmental training NETA was selected by EPA to conduct a national survey entitled the "National Environmental Training and Technical Assistance Survey (NETTA)". A description of this survey is attached as Appendix II.

In conducting the NETTA project NETA has made contacts in all 50 states and worked extensively with numerous state agencies and institutions and national organizations. The membership of NETA which includes key members of the training community in the states places NETA in a unique position to interact effectively both with academic institutions and governmental regulatory agencies.

NETTA PRELIMINARY RESULTS

Although we are still in the process of collecting and analyzing the data we can share some preliminary observations with this committee:

(1) First is the training effort varies significantly from state to state. A few states are exceptional in their effort and effectiveness while others are marginal at best.

(2) In as much as many states tend to emulate the lead of the Federal Agencies the decision by EPA three years ago that the effort in training was complete, has had an impact on the state agencies.

(3) In some states a single individual, who has the responsibility for training cannot be identified.

(4) The primary training expertise in most states is organizationally seperate from the state water pollution control agency.

(5) Unless training funds are properly targeted they may not be going to the proper training organization within a state and may in fact not be spent on providing training or developing the state's training capacity.

(6) Where the funds are properly targeted on-site technical assistance does in fact occur with a resulting improvement in performance and compliance of our water quality treatment facilities.

A more complete analysis will be preformed on all of the data and a report submitted to the EPA in December of this year. It is our hope that this information will be used as a basis for targeting funding for training within states to provide incentives to those doing a good job and to develope the tools to assist others.

CONCLUSION

It is not enough to simply provide training funds to the states in the hopes of improving the training in each state. Many states required technical assistance to organize a comprehensive and effective training program which will maximize the operation and compliance of water quality treatment facilities.

The NETTA project will provide us for the first time with an indepth knowledge of the state-of-the-art of training. This information will be invaluable in the development of a National Plan which provides technical assistance to the states to achieve both programmatic and fiscal self sufficiency in training. A concept paper detailing such an effort is attached as Appendix III.

RECOMMENDATIONS

We respectfully request that this committee in its reauthorization of the Clean Water Act consider:

(1) Stimulating and supporting federal funding of water quality training efforts as previously discussed.

(2) Awarding federal funds for water quality training to organizations and institutions which have a history of successful water quality training and that in those cases where past training results have been less than desired that technical assistance accompany training funds.

(3) Support the development and implementation of a National Training Plan to maximize the value of the available federal training funds with the directed integration of state resources.

Thank you for this opportunity to present the concerns of the NETA membership. We are convinced that with the attention and support of such a prestigious committee we can be successful in our efforts to develop a competent water quality workforce and to maximize the operation and compliance of our water quality treatment facilities.

Mr. ROE. Please proceed.

TESTIMONY OF ANDREW A. HOLTAN, CHAIRMAN, GOVERNMENTAL AFFAIRS COMMITTEE, NATIONAL ENVIRONMENTAL TRAINING ASSOCIATION

Mr. HOLTAN. Yes, sir, I do. And I will present my testimony, which is very brief, almost verbatim from the printed copy that you have received.

Mr. Chairman and members of the committee, I want to thank you for the opportunity to provide testimony before the committee. As before, this testimony is presented on behalf of the National Environmental Training Association, NETA. My name is Andrew A. Holtan, and I am chairperson of the NETA Governmental Affairs Committee.

At the conclusion of my previous testimony, you requested that I research two general questions regarding the state of the art of training in the United States. Specifically, you requested an update on what is currently being done in training, and conversely, what is not being done. And intuitively, this poses the question of what should be done and how.

These very same questions have been posed by the NETA membership as a challenge to the 1980 decision by EPA stating that the Federal role and responsibility in training was complete. Our membership refused to accept this position and began to make their concerns known to their congressional legislators.

It is NETA's view that a small investment in training can protect the integrity of billions of dollars of construction financing and insure that plants are operating at maximum efficiency, thereby achieving the national goal of improved water quality.

Ultimately, we believe that the responsibility for actually conducting such training and implementing ongoing mechanisms for financing does lie at the local and the State levels. However, we believe that there remains a key interim Federal role to do four things. The first is to assess the existing capabilities of various State institutions to provide training; second, to develop models of successful training programs; third, to develop models of mechanisms to achieve financial self-sufficiency, and the fourth, to provide technical assistance to the States in utilizing these models.

To be effective, however, all of this must be done within the context of a well-thought-out and orderly plan of action. Therefore, NETA proposed Federal support for a state of the art survey as the basis for the development of a national training plan. Such a plan would evaluate the training needs and training resources and provide for a concerted and coordinated effort to develop the capabili-

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ties of the States to conduct an ongoing comprehensive and effective training program which is programmatically and fiscally self-sufficient. The concept of a national training plan is outlined in appendix II.

For the past 3 years, through the combined efforts of the NETA grassroots membership and congressional committees such as this, the Congress has shown its sensitivity to the critical role played by training and provided an add-on budget for training.

In the first 2 years, the congressional add-on training funds were awarded to the 109(b) training centers, to the State water quality regulatory agencies and to organizations outside the State structure for the general purpose of providing training and achieving State self-sufficiency in training.

During the second year of funding, concerns developed that perhaps not all of the training funds were being spent as effectively as possible on training. Therefore, in the third year, the Congress specified that the funds were to be used to evaluate how the last 2 years of training funds were spent. As the only national association exclusively dedicated to environmental training, NETA was selected by EPA to conduct a national survey entitled the "National Environmental Training and Technical Assistance survey, NETTA." A description of this survey is attached as appendix II.

In conducting the NETTA project, NETA has made contacts in all 50 States and worked extensively with numerous State agencies and institutions and national organizations. The membership of NETA, which includes key members of the training community in the States places NETA in a unique position to interact effectively both with academic institutions and governmental regulatory agencies.

Although we are still in the process of collecting and analyzing the data, we can share some preliminary observations with the committee.

First, the training effort varies significantly from State to State. A few States are exceptional in their effort and effectiveness, while others are marginal at best.

Second, inasmuch as many States tend to emulate the lead of the Federal agencies, the decision by EPA 3 years ago that the effort in training was complete has had an impact on the State agencies.

Third, in some States, a single individual, who has the responsibility for training cannot be identified.

Fourth, the primary training expertise in most States is organizationally separate from the State water pollution control agency.

Fifth, unless training funds are properly targeted, they may not be going to the proper training organization within a State and may in fact not be spent on providing training or developing the State's training capability.

Sixth, where the funds are properly targeted, onsite technical assistance does, in fact, occur with a resulting improvement in performance and compliance of our water quality treatment facilities.

A more complete analysis will be performed on all of the data and a report submitted to the EPA in December of this year. It is our hope that this information will be used as a basis for targeting funding for training within States to provide incentives to those doing a good job and to develop tools to assist others.

Our conclusion is that it is not enough simply to provide training funds to the States in the hopes of improving the training in each State. Many States require technical assistance to organize a comprehensive and effective training program which will maximize the operation and compliance of water quality treatment facilities.

The NETTA project will provide us for the first time with an in-depth knowledge of the state of the art of training. This information will be invaluable in the development of a national plan which provides technical assistance to the States to achieve both programmatic and fiscal self-sufficiency in training. A concept paper detailing such an effort is attached as appendix III.

We respectfully request that this committee in its reauthorization of the Clean Water Act consider:

One, stimulating and supporting Federal funding of water quality training efforts as previously discussed.

Two, awarding Federal funds for water quality training to organizations and institutions which have a history of successful water quality training and that in those cases where past training results have been less than desired, that technical assistance accompany training funds.

Three, consider supporting the development and implementation of a national training plan to maximize the value of the available Federal training funds with the directed integration of State resources.

I thank you for this opportunity to present the concerns of the NETA membership. We are convinced that with the attention and support of such a prestigious committee, we can be successful in our efforts to develop a competent water quality work force and to maximize the operation and compliance of our water quality treatment facilities.

[Appendix items I, II, and III follow:]

National Environmental Training Association

RECOMMENDATIONS FOR NATIONAL TRAINING PLAN

NETA recommends that the National Training Plan address, at a minimum, the following training needs and concerns:

State plans of action for environmental training - If state self-sufficiency lies at the core of the national training plan, then the first step towards such self-sufficiency must be for states to have their own plans for effective training capabilities — plans that are fiscally and programmatically self-sufficient.

The state technical assistance demonstration project proposed for FY84 funding will not only address this need in the five demonstration states, it will serve as a model for the attainment of self-sufficiency in other states.

Funding mechanism - The entire issue of state self-sufficiency turns on the question of adequate, long-term fiscal support for environmental training. The national plan, therefore, must address the development of funding mechanisms that are adequate to support effective, self-sufficient state training capabilities.

Again, the state technical assistance project proposed for FY84 funding will develop a model for state financial management technical assistance programs and such assistance will actually become a component of state O&M programs in the five demonstration states.

National clearinghouse - No matter how effective state self-sufficiency is or becomes, state training programs cannot interact unless there is a focal point for national coordination. And unless states interact — cooperate and share information, expertise, materials, resources and innovative approaches — there will be duplication of effort and a tremendous waste of resources at the state and local levels. National coordination lies at the very heart of any national goal — and national coordination is as necessary for environmental training as it is for any other aspect of our nation's environmental protection effort.

What national coordination does exist is haphazard, at best. Hundreds of individuals and organizations turn to NETA each year for guidance in locating quality training resources, materials, sources, programs, etc. In fact, since NTOTC's termination, even EPA has been turning to NETA for help: EPA Regional offices call to ask about local sources of training; former employees of NTOTC call to see whether NETA's library contains a certain report; USEPA Personnel Management Division calls to ask if NETA has a directory of training sources — where can EPA employees can be sent for training? In addition to EPA, numerous international organizations turn to NETA for similar information. And throughout the country, state and local government, educational institutions and private firms are continually calling on NETA as the source of information about environmental training.

But NETA's financial resources (primarily dues) are inadequate to support an effective, comprehensive clearinghouse system.

No system exists today which is effectively meeting environmental training needs. The IRIS (Instructional Resources Information System) established at Ohio State University does not meet the needs of trainers for several documented reasons:

- Many trainers still do not know that IRIS exists. Apparently, little effort is being made to reach these trainers — especially the part-time trainer.
- More important, many trainers know about IRIS but do not use it. In a 1980 survey of professional environmental trainers, NETA found that 81% of the trainers surveyed were familiar with IRIS but only 5% use it often. The trainers complained that the system is cumbersome and time-consuming to use and that it is incomplete.
- The trainers surveyed also complained that IRIS is filled with references to materials that are outdated, irrelevant or unobtainable; that contact names and addresses are often incorrect; and that materials are not screened for quality, content or relevancy before they are added to the system.

In addition to problems with IRIS, materials being disseminated through Ohio State University fall short of the mark, as well. Individuals have contacted NETA for training materials that they cannot obtain from from Ohio State University, even though they are supposed to be available. Finally, Battelle's National Trainers Institute (for which many trainers held high hopes) represents perhaps the greatest disappointment of all.

No other organization in this nation is as committed to the cause of environmental training as NETA is; NETA's sole constituency is the environmental trainer. And without this commitment to training — without the awareness of who environmental trainers are and what they need to do their job and do it well — any effort at national coordination is not likely to effectively meet the needs of trainers.

Standards of quality training capabilities - The accomplishments proposed in the national plan must be measured: the national plan, therefore, requires a yardstick by which the effectiveness of statewide training capabilities can be assessed. Quality can't be legislated. But certain minimum standards can and must be established for training materials, facilities, personnel, programs, fiscal resources, etc.

The N.E.T.T.A. project is developing the elements of good training. The national training plan should build on this by developing minimum standards for quality state training capabilities. These minimum standards, then, can become self-assessment "packages" that states can use in designing their own training delivery systems. The self-assessment packages will help states select appropriate approaches from a universe of potential approaches that have been identified as effective.

The standards of quality training capabilities and the self-assessment packages will not only offer states insight into what they should be doing and why, but will provide basic guidance in taking the first steps.

Public awareness of the benefits of training - Trainers have recently become aware that Congress and EPA hold training accountable for its impact on plant performance/compliance. As trainers begin to grapple with this challenge, they recognize that various obstacles must be overcome if an effective campaign is to be waged. Perhaps the greatest obstacle currently facing trainers is the lack of public awareness of the benefits of environmental training — particularly at the local level, but also at the state level. Before a local community becomes supportive of training, an entire foundation of awareness must be carefully laid. The community must learn and understand that:

- its wastewater treatment plant represents a huge public investment — an investment that must be protected and maintained
- annual plant operating costs are probably the largest single item in the community's budget
- trained workers can reduce plant operating costs through better operation and maintenance practices (lower energy costs, lower consumption of chemicals and supplies, longer equipment life, etc.)
- the community must provide adequate financial support to staff, operate and maintain the treatment plant

When a community understands the implications of poor O&M, it will be receptive to the benefits training has to offer.

The national training plan, therefore, should help trainers meet the plant performance/compliance challenge by providing trainers with tools to gain local community and state support. Leaflets, brochures and pamphlets should be developed that trainers can use to educate local governments, mayors, city councils, plant superintendents and other decision-makers in the benefits of training.

APPENDIX II

PART III. NARRATIVE STATEMENT

NATIONAL EVALUATION OF TRAINING & TECHNICAL ASSISTANCE (N.E.T.T.A.)

A Project to Assess State Training & Technical Assistance Capabilities

National Environmental Training Association

April 1983

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APPENDIX II

PART III. NARRATIVE STATEMENT

NATIONAL EVALUATION OF TRAINING & TECHNICAL ASSISTANCE (N.E.T.T.A.)

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National Environmental Training Association

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II. PLAN OF WORK

A. Project Purpose

The purposes of this project are to evaluate the effectiveness of various approaches to environmental training and to identify the critical, common program elements and essential state resource levels for maintaining effective operator training programs. Inherent in this evaluation is the development of recommendations for improving all aspects of environmental training delivery, including programmatic and resource considerations, and for establishing fiscal support at the state and local levels.

B. Approach

The following approach will be used to achieve the goals of this project:

- First, evaluation criteria will be established and an evaluation will be conducted for each of the evaluation areas (described in Section III).
- Second, appropriate state agency personnel and state training center personnel will be contacted through questionnaires, telephone contacts and personal interviews to collect data and information in each area of evaluation.
- Third, the raw data, information and statistics will be analyzed and baseline data will be established.
- Fourth, the critical, common program elements and essential state resource levels for effective operator training programs will be identified.
- Fifth, all data and information will be evaluated, as further described in Section III.

This approach will be repeated in each of the five areas of evaluation described below. It should be noted that the data to be collected, developed and analyzed is contingent upon the availability of data from the States.

Based on the results of these evaluations, recommendations will be developed for improving state training capabilities and strengthening state self-sufficiency for environmental training.

III. AREAS OF EVALUATION

Water quality operator training is a complex picture. In choosing aspects of the training picture for evaluation, major trends in approaches to training delivery and funding were considered the most important areas of study.

Perhaps no greater challenge faces operator training programs than the transition from Federal fiscal support to state and local support. At the same time, assuring that training programs are comprehensive and effective remains a major concern. The ultimate test of the efficacy of operator training is its impact on plant performance.

With these considerations in mind, then, the following areas have been selected for evaluation:

1. Training activities utilizing FY82 104(g)(1) funds
2. State efforts toward achieving self-sufficient environmental workforce development
3. Training approaches used by a representative sample of states determined to have successful training capabilities
4. 109(b) centers as an institutional capability for state training delivery
5. Operator certification as a mechanism for improving plant performance and compliance

These areas of evaluation are described below in further detail.

A. Evaluation of Training Activities Utilizing FY82 104(g)(1) Funds

To a large extent, success in establishing effective and self-sufficient training capabilities depends upon being able to demonstrate that training saves money and improves a plant's performance or record of compliance with appropriate discharge permits.

Yet, improved plant performance has only recently emerged as the touchstone of environmental training. FY82 104(g)(1) operator training funds represent the first allocation of funds for the specific purpose of providing technical assistance to document the relationship between compliance and training.

The extreme importance of documenting this relationship cannot be overstated. A major objective of this project is, therefore, to evaluate the effectiveness of FY82 funds utilized in:

- states with 109(b) training centers
- states without 109(b) training centers
- national training projects, such as the National Demonstration Water Project CompTrain Project

All states will be surveyed to identify the critical, common program elements and essential state resource levels necessary for maintaining effective operator training programs. Information to be gathered will include:

- the number of facilities assisted
- the types of training delivery (e.g. on-site, classroom, etc.)
- areas of emphasis
- the overall effort directed toward technical assistance to improve plant performance and compliance
- the sources of the technical assistance effort (private sector; state agencies; educational institutions; etc.)

Collection of data will be coordinated with the Association of State and Interstate Water Pollution Control Administrators. In addition, an in-depth, extensive analysis will be conducted in ten states. This analysis will evaluate the use of FY82 104(g)(1) funds and the effectiveness of technical assistance efforts. Based on these and other evaluation parameters, this project will assess state views toward operator training and will determine how the national guidance, concerning training to improve plant performance/compliance, was implemented.

B. Evaluation of State Efforts Toward Self-Sufficient Environmental Workforce Development

State self-sufficiency, as it applies to training programs for pollution control personnel, can take many forms. And the first step, perhaps, in measuring self-sufficiency

is to establish "baseline data" — a clear and uniform definition of the term "self-sufficiency."

With the termination of Federal funding for training, states must be ready to assume a primary role in supporting operator training programs.

For many states, self-sufficiency is a laudable goal, but one that will not be readily realized; the framework to support self-sufficiency simply doesn't exist today. Yet, several states do have effective and comprehensive environmental training capabilities that do not rely directly on Federal funds for support.

A basic step in the journey to self-sufficiency is documenting the efforts of travelers who have gone before. States that are struggling to establish independent training capabilities will benefit greatly from understanding how other states have achieved self-sufficiency — legislative history, problems encountered, resources required, model administrative structures, etc. Since many operations and maintenance problems are attributable to poor fiscal management and inadequate user fee systems, special attention should be given to state or local financial management procedures and guidance, and to model user fee systems that provide adequate ongoing support for operator training.

In this project, states which are now self-sufficient, and states that are moving toward self-sufficiency, will be identified. Their progress toward or achievement of self-sufficiency will be documented, along with levels of state and local funding for operator training.

C. Evaluation of States with Successful Training Capabilities

A portion of FY83 funds is being devoted to identifying what is necessary for successful state training capabilities to meet essential training needs, in terms of both program elements and annual resource costs. Each Region of U.S. EPA may select for

this study one state that has a recognized, effective training program. Regional funding will enable this state to describe its program elements and resource needs.

This project will evaluate this data and develop recommendations concerning the critical, common program elements and essential state resources needed to maintain effective training programs. The Regions and States are not required to partcipate in this special study. Therefore, fewer than 10 states may be involved in this evaluation. Whatever the number of participating States and Regions, essential program elements and annual resource costs will be evaluated.

D. Evaluation of 109(b) Centers as an Institutional State Capability for Training

Twenty states and the District of Columbia are utilizing 109(b) centers as the primary vehicle for environmental training activities and programs, while several states (California, Illinois and Texas) have state training centers built without 109(b) funds. But many states have not taken advantage of funds available under Section 109(b) to provide financial assistance in the construction of a state training center. State training centers represent at least a minimum commitment to training and represent an institutional capability for ongoing training delivery. A few states (i.e. New York, Minnesota) without any type of state training center do have viable, effective training delivery systems (utilizing, for example, state and local agencies as the vehicles for training). However, most states without state training centers — 109(b) or otherwise — do not appear to have effective or comprehensive state training capabilities.

In this project, the overall effectiveness of 109(b) training centers will be evaluated and the advantages of designated state training centers, versus other approaches to training delivery, will be identified. Impediments to the establishment of 109(b) state training centers will be identified and recommendations will be developed for resolving such impediments. This project will also identify states that have little or no operator

training programs and will determine any program deficiencies in states without designated state training centers.

E. Evaluation of Operator Certification as a Mechanism for Improving Plant Performance and Compliance

The effectiveness of certification as a mechanism in improving plant performance and compliance has not been evaluated adequately. In this project, states will be surveyed to define the theoretical role of certification, the actual role of certification, and ways in which implementation of certification concepts and practices might be improved.

IV. TIMETABLE

This project is of 14 months' duration. In general, the five evaluations will take place concurrently and many of the tasks involved in each evaluation are identical.

A rough chronology of the tasks for the implementation of this project is as follows:

Establish criteria and conduct evaluation	3 months
Survey/interview state personnel	4.5 months
Analyze data and establish baseline	2.5 months
Identify critical, common program elements and annual resource costs	1 month
Evaluate all data and information	1 month
Develop recommendations	2 months

V. MANAGEMENT PLAN AND QUALITY CONTROL

The success of this project will depend to some extent upon a strong partnership being forged between all of the groups directly or indirectly involved in environmental workforce development. This partnership encompasses the private sector, state and local government, educational institutions, and others.

While the diversity of the groups in this partnership may seem to challenge the notion of cohesiveness, this very diversity — when well-managed, organized and directed — will actually provide a rich bank of human, material and financial resources for developing support for self-sufficient, comprehensive programs for environmental workforce development.

The key to the successful integration of the ideas to be offered by these partners is centralized project management and quality control.

A. Centralized Management

The National Environmental Training Association (NETA), responsible for implementation of this project, is uniquely capable of effectively and successfully managing this project.

More than any other organization, NETA is very familiar with the diversity of the many organizations involved in environmental workforce development, since NETA's membership presently includes — and historically has encompassed — each of these diverse groups.

NETA's capability to manage this project will be maximized by utilizing the NETA membership as the basis for the pool of human resources from which volunteer state coordinators and project consultants will be selected.

In this project, NETA has overall responsibility for establishing baseline data, collecting and analyzing data, and developing recommendations. Yet, in the true partnership spirit, NETA's efforts in each of these tasks will incorporate the input of those who will ultimately be responsible for any implementation of project recommendations.

The responsibility for effective project management includes certain specific activities:

- selecting all project personnel, state coordinators, and project consultants
- coordinating activities in establishing evaluation criteria, collecting and analyzing data, establishing baseline data, evaluating data and developing recommendations
- coordinating the collection of data with the Association of State and Interstate Water Pollution Control Administrators
- preparing periodic progress and financial reports
- evaluating the project and assuring quality control
- maintaining final authority over decisions of the project consultants and state coordinators

In addition, NETA will be solely responsible for working with the funding agency and for representing the project to the public.

B. Project Consultants

Technical experts will be utilized as project consultants and will provide valuable assistance in establishing baseline data, analyzing information and developing recommendations. While the NETA membership offers an excellent base for the pool of project consultants, outside technical experts will be hired as necessary to provide other specialized skills and knowledge.

C. State Coordinators

State coordinators will be volunteers selected from the NETA membership in each state. The state coordinators will assist in the collection of data from state personnel and will work under the direction of the Assistant Project Manager.

The state coordinators will be individuals who are well-acquainted with the existing state training program and existing resources within the state, and will have the special ability to work with and to integrate the activities of the various state resource groups and individuals.

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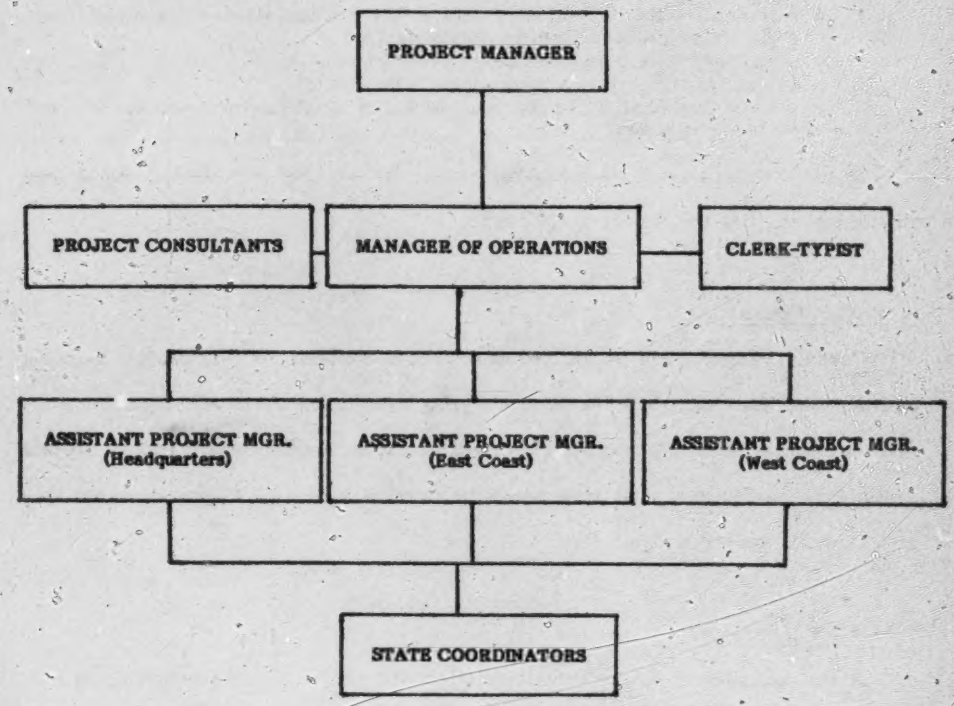
D. Project Organization



APPENDIX III

National Environmental Training Association

STATE-TO-STATE "BOOTSTRAP" EFFORT
TECHNICAL ASSISTANCE DEMONSTRATION PROJECT

Purpose

This demonstration project has two purposes. First, through this project, five states will actually develop and implement a plan to achieve fiscal and programmatic self-sufficiency for wastewater operator training. Second, the plans developed by these five states will become a formula or a model to be used throughout the nation to help other states develop fiscal and programmatic self-sufficiency for wastewater operator training.

Rationale

There is little dispute that there is a widespread problem of plant non-compliance in this country — non-compliance, that is, with NPDES permits. In a similar way, many states are not "in compliance" with a model of effective, self-sufficient training capabilities.

Of course, unlike the NPDES permit system, this "state model" doesn't exist today — but it is being developed right now. One of the outputs of the N.E.T.T.A. project is to identify the "elements of good training capabilities". These elements are, in fact, a model of what states should be doing, how they might go about it, and what it costs to do it effectively.

The evaluation of FY82 technical assistance projects has begun and it's apparent that some states that were given money simply do not have the interest, commitment or capabilities in wastewater operator training. This has happened because until now there has been no yardstick by which a state's current or potential commitment to training can be measured.

To continue to give money directly to such states, simply telling them to "become self-sufficient", is analogous to giving money directly to plants and simply telling them to "bring themselves into compliance." It won't work. Without guidance, expertise, direction and planning, a plant cannot be brought into compliance — nor can a state.

Approach

This technical assistance project is a state-to-state "helping hand" effort. No state today has achieved fiscal and programmatic self-sufficiency for training, but several states have developed expertise in specific areas. By bringing together the knowledge, skills and experience of a number of individuals and organizations, a pool of expertise from other states will provide the basis of the technical assistance in this project.

This project involves three distinct phases — each of which is vital to the successful implementation of the project:

1. Selection of Demonstration States - the very essence of any demonstration project is to achieve the stated objective, thereby demonstrating the validity of a premise — in this case, fiscal and programmatic self-sufficiency for environmental training. It is apparent, therefore, that selection of participants is a crucial step; the demonstration states selected must provide the demonstration project with the best possible chance for success.

   In this project, the demonstration states will be selected based on their potential for

attainment of fiscal and programmatic self-sufficiency. This potential will be identified through the results of the N.E.T.T.A. project, which is providing — for the first time ever — key information about training capabilities in each state.

2. Developing the State Training Plan - Two important outputs of the N.E.T.T.A. project will be used as a starting point in developing state plans of action. First, the N.E.T.T.A. project provides baseline data on the status of state training capabilities. Second, the N.E.T.T.A. project identifies the elements of good training and fiscal resources required. The state training plan will, in essence, be a blueprint on how to close the "gap" between where a state is today and the attainment of fiscal and programmatic self-sufficiency for training.

   Most important, the state training plan will provide the state O&M program with a financial management technical assistance component. This element does not exist today and until states develop this expertise, assistance cannot be provided to communities in the financial aspects of plant operations and maintenance.

   How can we be assured that the state training plans will succeed? How does this state technical assistance project differ from other attempts toward state self-sufficiency?

   - The FY82 104(g)(1) technical assistance projects, as evaluated in the N.E.T.T.A. project, will demonstrate that technical assistance is, in fact, effective. These persuasive data and statistics will be presented to state decision-makers as part of this project.

   - This project will provide incentives — financial, status, and otherwise — for state participation.

   - The "partners" in training will support the training plan because it will be their plan. Management at the appropriate levels of the state; municipal plant personnel; and educational institutions — all of these individuals and organizations will be brought together to work toward the common goal of fiscal and programmatic self-sufficiency for training.

   The first year of this project will be devoted to building the foundation of support among the "training partners" in each state — from the state capitol to the community college to the wastewater treatment plant. The state training plan will then be developed, also in the first year of the project.

3. Implementing the State Training Plan - The second year of the project will be devoted to helping the five demonstration states implement their individual training plans.

Summary

This project signifies a landmark in the journey toward state self-sufficiency. When this project is completed, self-sufficiency will have been demonstrated to be desirable, beneficial and achievable. Five states will actually have plans of action for effective, self-sufficient training; forty-five states will be asking how the same can be accomplished in their states.

10/83

Mr. ROE. We want to thank you, Mr. Holtan, because I think that your summary and your presentation today really rounds out your testimony and brings into clear focus what the issues are, and I think you have identified it very, very well.

Also, we would be looking for the interpretation that EPA makes of your presentation to them, to see how we can apply this dimension.

Are there any questions of the gentleman?

The gentleman from Minnesota.

Mr. STANGELAND. Just one question. How extensive and to what degree level do you anticipate the training ought to take? Is it a voc tech training, is it a 4-year degree training?

Mr. HOLTAN. I think a State training program ought to be multifaceted. People learn in different ways. Some people learn very well at home study. Others learn very well in a classroom. Some require both of them. No training program can be effective, however, without some sort of hands-on practice of the knowledge and skills you have gained, as well as inplant training.

So that I think that it needs to be an extensive training program, with a number of different avenues for that training to be available to the operators.

Mr. STANGELAND. You do not envision—or do you envision the need for every State to have a training program, or couldn't the training programs be conducted more regionally?

Mr. HOLTAN. I think that each State should have its own training program, to the extent that that State's resources will allow it to. They may then have to take advantage of certain specialized training, specialized courses, on a regional basis, that are either too expensive or too difficult to make available in each and every State, but that every State, in my estimation, should have a training plan and training program underway. Some may be more extensive than others, but every one should have one, I believe.

Mr. STANGELAND. Thank you very much.

Mr. ROE. Are there further questions for the gentleman?

[No response.]

Mr. ROE. Again, thank you very much, Mr. Holtan. We appreciate your efforts.

Now, our last witness for the day is the Council of Energy Resources Tribe, Mr. David Lester. Is Mr. David Lester here we will place his statement in the record at this point.

[Statement referred to follows:]

STATEMENT OF DAVID LESTER, EXECUTIVE DIRECTOR, COUNCIL OF ENERGY RESOURCE TRIBES

SUPPLEMENTAL TESTIMONY

CLEAN WATER ACT

Mr. Chairman and committee members, my name is David Lester. I am the Executive Director of the Council of Energy Resource Tribes (CERT). I am pleased to have this opportunity to provide testimony on the Clean Water Act and clarify issues raised by the Committee during the testimony of Mr. Ross Swimmer on October 18, 1983 on behalf of CERT.

With the Committee's permission, I would first like to address issues raised by the Committee during Mr. Swimmer's testimony after which I would be pleased to address anv additional questions you may have. My comments will focus on the three areas of concern raised during the October 18, 1983 testimony. Those three areas are:

(1) interference with water rights,
(2) tribal-state jurisdictional conflicts, and
(3) tribal administrative/management capability.

The statement prepared by CERT and placed into the hearing record of October 18, 1983, and the recommended changes noted in that statement and clarified herein do not involve or interfere with water rights. The tribes are asking that the Clean Water Act be amended to recognize tribal governments, thus allowing tribes direct participation in the programs authorized under the Act. Recognition of tribal governments would allow the Environmental Protection Agency (EPA) to delegate responsibilities to the tribes for program development and implementation, management, and enforcement; parallel to those opportunities presently afforded the states. The recognition of the tribal governments in the Clean Water Act would not involve water rights nor raise jurisdictional issues of water rights. Section 101 (g) of the Clean Water Act clarifies that:

> It is the policy of Congress that the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired by this Act. It is the further policy of Congress that nothing in this Act shall be construed to supersede or abrogate rights to quantities of water which have been established by any State, Federal agencies shall co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources.

In like manner, from the tribes' perspective, the Clean Water Act should not be viewed as superseding, abrogating or otherwise impairing the authority of respective tribes to allocate quantities of water under their jurisdiction. The Clean Water Act does not relate to water rights.

The area of greatest concern raised during the October 18, 1983 testimony was with respect to potential tribal-state jurisdictional conflict that could result from non-compatible (inconsistent) water quality standards. The concern was also raised that the tribes would be a "third party" involved in the question of state and Federal Government jurisdiction.

The issue of compatibility of water quality standards between tribes and states would be no greater than the issue of standards compatibility between two adjoining states. Any water quality standards developed by the tribes, would, like the states, have to comply with the minimum standards established by the EPA. Water quality standards more stringent than the minimum could be established by either or both tribes and states. The ultimate compatibility of differing water quality standards between adjoining states, adjoining Indian reservations, or state lands adjacent to Indian lands would be resolved in the same manner, that is under the jurisdiction of the EPA in compliance with Federal regulations.

Concerns raised about the potential incompatibility of water quality standards independently developed by tribes and states was viewed from the perspective of impact on waters flowing into the states because of lesser quality waters, thus implied less stringent tribal water quality standards, leaving the reservations. Such concerns are equally valid for the potential of lesser quality water entering the reservations because of more lax state water quality standards compared to tribally established standards. It is anticipated that water quality standards developed by the tribes would be equal or more stringent than the standards of the adjacent states. Higher water quality standards would generally be developed by the tribes because of their desire for good water quality necessary to maintain and preserve important cultural values of fishing and hunting and economic development.

The direct participation of Indian tribes in establishing and administering water quality standards and other regulatory programs under the Clean Water Act would be no more "third party" than any other state to federal government relationship. The position of

the tribes would be parallel to the states. Both would be responsible to the federal government and any conflict or inconsistency would be resolved by the federal government.

The third concern to be addressed relates to the present administrative capability of the tribes to assume the responsibilities of program management and enforcement. The administrative capacity of the tribes, like that of states, varies from entity to entity. Some tribes presently have the capability to assume the administrative responsibilities required under the Clean Water Act. Other tribes would require time to build the needed administrative capacity. Where needed, program capability could be achieved through partial program delegation leading to full program responsibility as the tribe develops the ability to assume the additional duties. Again, like the states, there may be instances where the tribes would not want the program and thus compliance with the provisions of the Clean Water Act would remain with the EPA.

It is concluded that tribal governments of federally recognized Indian tribes should be recognized under the Clean Water Act, thus enabling government-to-government (federal to tribal) delegation of programs under the Act. Such delegation would not result in conflicts that do not already exist and for which mechanisms are already in place to resolve. Without recognition of tribal governments in the Clean Water Act, a void of local government regulatory authority will continue to exist on Indian reservations and program responsibility will remain with the Environmental Protection Agency. The right of the federal government to delegate such program responsibility to the tribes is in line with the intent and initiatives of the President's Indian Policy of January 24, 1983. (Copy Attached).

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release January 24, 1983

STATEMENT BY THE PRESIDENT

INDIAN POLICY

This Administration believes that responsibilities and resources should be restored to the governments which are closest to the people served. This philosophy applies not only to state and local governments, but also to federally recognized American Indian tribes.

When European colonial powers began to explore and colonize this land, they entered into treaties with sovereign Indian nations. Our new nation continued to make treaties and to deal with Indian tribes on a government-to-government basis. Throughout our history, despite periods of conflict and shifting national policies in Indian affairs, the government-to-government relationship between the United States and Indian tribes has endured. The Constitution, treaties, laws, and court decisions have consistently recognized a unique political relationship between Indian tribes and the United States which this Administration pledges to uphold.

In 1970, President Nixon announced a national policy of self-determination for Indian tribes. At the heart of the new policy was a commitment by the federal government to foster and encourage tribal self-government. That commitment was signed into law in 1975 as the Indian Self-Determination and Education Assistance Act.

The principle of self-government set forth in this Act was a good starting point. However, since 1975, there has been more rhetoric than action. Instead of fostering and encouraging self-government, federal policies have by and large inhibited the political and economic development of the tribes. Excessive regulation and self-perpetuating bureaucracy have stifled local decisionmaking, thwarted Indian control of Indian resources, and promoted dependency rather than self-sufficiency.

This Administration intends to reverse this trend by removing the obstacles to self-government and by creating a more favorable environment for the development of healthy reservation economies. Tribal governments, the federal government, and the private sector will all have a role. This Administration will take a flexible approach which recognizes the diversity among tribes and the right of each tribe to set its own priorities and goals. Change will not happen overnight. Development will be charted by the tribes, not the federal government.

This Administration honors the commitment this nation made in 1970 and 1975 to strengthen tribal governments and lessen federal control over tribal governmental affairs. This Administration is determined to turn these goals into reality. Our policy is to reaffirm dealing with Indian tribes on a government-to-government basis and to pursue the policy of self-government for Indian tribes without threatening termination.

In support of our policy, we shall continue to fulfill the federal trust responsibility for the physical and financial resources we hold in trust for the tribes and their members. The fulfillment of this unique responsibility will be accomplished in accordance with the highest standards.

Tribal Self-Government

Tribal governments, like state and local governments, are more aware of the needs and desires of their citizens than is the federal government and should, therefore, have the primary responsibility for meeting those needs. The only effective way for Indian reservations to develop is through tribal governments which are responsive and accountable to their members.

Early in this nation's dealings with Indian tribes, federal employees began to perform Indian tribal government functions. Despite the Indian Self-Determination Act, major tribal government functions -- enforcing tribal laws, developing and managing tribal resources, providing health and social services, educating children -- are frequently still carried on by federal employees. The federal government must move away from this surrogate role which undermines the concept of self-government.

It is important to the concept of self-government that tribes reduce their dependence on federal funds by providing a greater percentage of the cost of their self-government. Some tribes are already moving in this direction. This Administration pledges to assist tribes in strengthening their governments by removing the federal impediments to tribal self-government and tribal resource development. Necessary federal funds will continue to be available. This Administration affirms the right of tribes to determine the best way to meet the needs of their members and to establish and run programs which best meet those needs.

For those small tribes which have the greatest need to develop core governmental capacities, this Administration has developed, through the Assistant Secretary of the Interior for Indian Affairs, the Small Tribes Initiative. This program will provide financial support necessary to allow these tribes to develop basic tribal administrative and management capabilities.

In keeping with the government-to-government relationship, Indian tribes are defined by law as eligible entities and receive direct funding, if they wish, in five block grant programs administered by the Department of Health and Human Services. These and other blocks to the states consolidated dozens of categorical federal domestic assistance programs to reduce fragmentation and overlap, eliminate excessive federal regulation, and provide for more local control. This Administration now proposes that Indian tribes be eligible for direct funding in the Title XX social services block, the block with the largest appropriation and the greatest flexibility in service delivery.

In addition, we are moving the White House liaison for federally-recognized tribes from the Office of Public Liaison to the Office of Intergovernmental Affairs, which maintains liaison with state and local governments. In the past several administrations, tribes have been placed along with vital interest groups, such as veterans, businessmen and religious leaders. In moving the tribal government contact within the White House Intergovernmental Affairs staff, this Administration is underscoring its commitment to recognizing tribal governments on a government-to-government basis.

Further, we are recommending that the Congress expand the authorized membership of the Advisory Commission on Intergovernmental Relations (42 U.S.C. 4273) to include a representative of Indian tribal governments. In the interim before Congressional action, we are requesting that the Assistant Secretary for Indian Affairs join the Commission as an observer. We also supported and signed into law the Indian Tribal Governmental Tax Status Act which provides tribal governments with essentially the same treatment under federal tax laws as applies to other governments with regard to revenue raising and saving mechanisms.

In addition, this Administration calls upon Congress to replace House Concurrent Resolution 108 of the 83rd Congress, the resolution which established the now discredited policy of terminating the federal-tribal relationship. Congress has implicitly rejected the termination policy by enacting the Indian Self-Determination and Education Assistance Act of 1975. However, because the termination policy declared in H. Con. Res. 108 has not been expressly and formally repudiated by a concurrent resolution of Congress, it continues to create among the Indian people an apprehension that the United States may not in the future honor the unique relationship between the Indian people and the federal government. A lingering threat of termination has no place in this Administration's policy of self-government for Indian tribes, and I ask Congress to again express its support of self-government.

These actions are but the first steps in restoring control to tribal governments. Much more needs to be done. Without sound reservation economies, the concept of self-government has little meaning. In the past, despite good intentions, the federal government has been one of the major obstacles to economic progress. This Administration intends to remove the impediments to economic development and to encourage cooperative efforts among the tribes, the federal government and the private sector in developing reservation economies.

Development of Reservation Economies

The economies of American Indian reservations are extremely depressed with unemployment rates among the highest in the country. Indian leaders have told this Administration that the development of reservation economies is their number one priority. Growing economies provide jobs, promote self-sufficiency, and provide revenue for essential services. Past attempts to stimulate growth have been fragmented and largely ineffective. As a result, involvement of private industry has been limited, with only infrequent success. Developing reservation economies offers a special challenge: devising investment procedures consistent with the trust status; removing legal barriers which restrict the type of contracts tribes can enter into and reducing the numerous and complex regulations which hinder economic growth.

Tribes have had limited opportunities to invest in their own economies because often there has been no established resource base for community investment and development. Many reservations lack a developed physical infrastructure including utilities, transportation and other public services. They also often lack the regulatory, adjudicatory and enforcement mechanisms necessary to interact with the private sector for reservation economic development. Development on the reservation offers potential for tribes and individual entrepreneurs, in manufacturing, agribusiness and modern technology, as well as fishing, livestock, arts and crafts and other traditional livelihoods.

Natural resources such as timber, fishing and energy provide an avenue of development for many tribes. Tribal governments have the responsibility to determine the extent and the methods of developing the tribe's natural resources. The federal government's responsibility should not be used to hinder tribes from taking advantage of economic development opportunities.

With regard to energy resources, both the Indian tribes and the nation stand to gain from the prudent development and management of the vast coal, oil, gas, uranium and other resources found on Indian lands. As already demonstrated by a number of tribes, these resources can become the foundation for economic development on many reservations while lessening our nation's dependence on imported oil. The federal role is to encourage the production of energy resources in ways consistent with Indian values and priorities. To that end, we have strongly supported the use of creative agreements such as joint ventures and other non-lease agreements for the development of Indian mineral resources.

It is the free market which will supply the bulk of the capital investments required to develop tribal energy and other resources. A fundamental prerequisite to economic development is capital formation. The establishment of a financial structure that is a part of the Indian reservation community is essential to the development of Indian capital formation.

Federal support will be made available to tribes to assist them in developing the necessary management capability and in attracting private capital. As a first step in that direction, we provided funds in the FY 1983 budget to provide seed money to tribes to attract private funding for economic development ventures on reservations. As more tribes develop their capital resource base and increase their managerial expertise, they will have an opportunity to realize the maximum return on their investments and will be able to share an increasing portion of the business risk.

It is the policy of this Administration to encourage private involvement, both Indian and non-Indian, in tribal economic development. In some cases, tribes and the private sector have already taken innovative approaches which have overcome the legislative and regulatory impediments to economic progress.

Since tribal governments have the primary responsibility for meeting the basic needs of Indian communities, they must be allowed the chance to succeed. This Administration, therefore, is establishing a Presidential Advisory Commission on Indian Reservation Economies. The Commission, composed of tribal and private sector leaders, is to identify obstacles to economic growth in the public and private sector at all levels; examine and recommend changes in federal law, regulations and procedures to remove such obstacles; identify actions state, local and tribal governments could take to rectify identified problems; and recommend ways for the private sector, both Indian and non-Indian, to participate in the development and growth of reservation economies. It is also to be charged with the responsibility for advising the President on recommended actions required to create a positive environment for the development and growth of reservation economies.

Numerous federal agencies can offer specialized assistance and expertise to the tribes not only in economic development, but also in housing, health, education, job training, and other areas which are an integral part of reservation economies. It is to the advantage of the tribes, and in the interest of the taxpayers, that the federal role be fully reviewed and coordinated. Therefore, this Administration directs the Cabinet Council on Human Resources to act as a mechanism to ensure that federal activities are non-duplicative, cost effective, and consistent with the goal of encouraging self-government with a minimum of federal interference.

Summary

This Administration intends to restore tribal governments to their rightful place among the governments of this nation and to enable tribal governments, along with state and local governments, to resume control over their own affairs.

This Administration has sought suggestions from Indian leaders in forming the policies which we have announced. We intend to continue this dialogue with the tribes as these policies are implemented.

The governmental and economic reforms proposed for the benefit of Indian tribes and their members cannot be achieved in a vacuum.

This nation's economic health -- and that of the tribes -- depends on adopting this Administration's full Economic Recovery Program. This program calls for eliminating excessive federal spending and taxes, removing burdensome regulations, and establishing a sound monetary policy. A full economic recovery will unleash the potential strength of the private sector and ensure a vigorous economic climate for development which will benefit not only Indian people, but all other Americans as well.

Attachment

REAGAN ADMINISTRATION INDIAN POLICY INITIATIVES

- Request that Congress repudiate House Concurrent Resolution 108 of the 83rd Congress which called for termination of the federal-tribal relationship. The Administration wants this lingering threat of termination replaced by a resolution expressing its support of a government-to-government relationship.

- Ask Congress to expand the authorized membership of the Advisory Commission on Intergovernmental Relations to include a representative of Indian tribal governments. In the interim, request that the Assistant Secretary of the Interior for Indian Affairs join the ACIR as an observer.

- Move the White House liaison for federally-recognized tribes from the Office of Public Liaison to the Office of Intergovernmental Affairs.

- Establish a Presidential Advisory Commission on Indian Reservation Economies to identify obstacles to economic growth and recommend changes at all levels; recommend ways to encourage private sector involvement, and advise the President what actions are needed to create a positive environment for the development and growth of reservation economies.

- Support direct funding to Indian tribes under the Title XX social services block grant to states.

- Sought and obtained funds for FY 1983 to implement the Small Tribes Initiative to provide financial support needed to allow small tribes to develop basic tribal administrative and management capabilities.

- Sought and obtained funds for FY 1983 to provide seed money for tribes for economic development ventures on reservations.

- Supported and signed into law the Tribal Governmental Tax Status Act which will provide tribal governments with the same revenue raising and saving mechanisms available to other governments.

- Support the use of creative agreements such as joint ventures and other non-lease agreements for the development of Indian mineral resources.

- Direct the Cabinet Council on Human Resources to act as a review and coordination mechanism to ensure that federal activities are non-duplicative, cost effective and consistent with the goal of encouraging tribal self-government with a minimum of federal interference.

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release January 14, 1983

FACT SHEET

Indian Policy Statement

SUMMARY

Strong and effective tribal governments are essential in the fight to solve the economic, health, educational, social and other problems of some 735,000 American Indians living on or near reservations. Just as the Federal government deals with States and local governments in meeting the needs of other citizens, so should the Federal government deal with tribal governments in promoting the well-being of American Indians.

The President's Indian Policy Statement emphasizes the Administration's commitment to encourage and strengthen tribal government as called for by President Nixon in 1970 and by Congress in the Indian Self-Determination and Education Assistance Act of 1975. The 1970 policy and 1975 law have not been adequately implemented because the Federal government has inhibited the political and economic development of the tribes. Excessive regulations and self-perpetuating bureaucracy have stifled tribal decisionmaking, thwarted Indian control of reservation resources, and promoted dependency rather than self-sufficiency.

This Administration will reverse this trend by removing obstacles to self-government and by creating a more favorable environment for development of healthy reservation economies. This policy recognizes the diversity of the tribes and the right of each to set its own priorities and goals, and to proceed at its own pace. At the same time, the Federal government will continue to fulfill its traditional responsibility for the physical and financial resources held in trust for the tribes and their members.

Indian tribes are tribal governments because they retain all aspects of their original sovereignty not otherwise given up or taken away by Congress. There are 283 Federally-recognized tribal governments in the United States. In addition, there are 193 Alaska village organizations which are served by the Bureau of Indian Affairs (BIA). According to figures released by the U.S. Census Bureau, there were 1,418,195 American Indians, Eskimos and Aleuts in the United States in 1980.

MAJOR POLICY POINTS

-- The Administration will deal with Indian tribes on a government-to-government basis.

-- Tribal governments will be strengthened through these actions:

* Today's signing of H.R. 5470, the Indian Tribal Governmental Tax Status Act. This legislation provides tribes with essentially the same treatment under Federal tax laws as applies to other governments with regard to revenue raising and saving mechanisms.

* Encouragement for tribes to assume responsibilities for services such as the enforcement of tribal laws, developing and managing tribal resources, providing health and social services, and education.

* Designation of the White House Office of Intergovernmental Affairs as liaison for tribes. By moving this function from the White House Office of Public Liaison, the President recognizes that tribal organizations are governments rather than interest groups such as veterans, businessmen and religious leaders.

* A request that Congress expand the authorized membership of the Advisory Commission on Intergovernmental Relations to include a representative of Indian tribal governments.

* Request that Congress repudiate House Concurrent Resolution 108 of the 83rd Congress which called for termination of the Federal-tribal relationship. The Administration wants this lingering threat of termination withdrawn and replaced by a resolution expressing its support of a government-to-government relationship.

* Support for direct funding to Indian tribes under Title XX social services block grants to States. In keeping with the government-to-government relationship, Indian tribes are defined by law as eligible entities and receive direct funding, if they wish, in five block grant programs administered by the Department of Health and Human Services. These and other blocks to the States consolidated dozens of categorical Federal domestic assistance programs to reduce fragmentation and overlap, eliminate excessive Federal regulation, and provide for more local control. This Administration proposes that Indian tribes be eligible for direct funding in the Title XX social services block, the block with the

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largest appropriation and the greatest flexibility in service delivery. Grants for social services would be made directly to the tribal governments, at the option of the tribe, and would not be channeled through the States.

-- To solve the severe economic conditions on reservations, the President has:

* Established a Presidential Advisory Committee on Indian Reservation Economies. The Commission is to identify obstacles to economic growth in the public and private sector at all levels; examine and recommend changes in Federal laws, regulations and procedures to remove such obstacles; identify actions State, local and tribal governments could take to rectify identified problems; and recommend ways for the private sector, both Indian and non-Indian, to participate in the development and growth of reservation economies. It will advise the President on actions needed to improve reservation economies.

* Pledged to work with the tribes to implement expeditiously recently passed legislation allowing tribes to enter into joint venture contracts for the development of natural resources on reservations. This is a major step which will enable the tribal governments to become more proficient in business management while increasing employment opportunities for tribal members and adding to tribal revenues.

* Requested funds in the FY 1983 budget to provide seed money to tribes to attract private funding for economic development ventures on reservations.

* Initiated legislation which Congress passed to provide $375 million for building new roads on Indian reservations.

-- This Administration sought suggestions from Indian leaders in developing this policy.

# # # #

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release January 14, 1983

EXECUTIVE ORDER

- - - - - - -

PRESIDENTIAL COMMISSION ON INDIAN RESERVATION ECONOMIES

By the authority vested in me as President of the United States of America, and in order to establish, in accordance with the provisions of the Federal Advisory Committee Act, as amended (5 U.S.C. App. I), an advisory commission to promote the development of a strong private sector on Federally recognized Indian reservations, it is hereby ordered as follows:

Section 1. Establishment. (a) There is established a Presidential Commission on Indian Reservation Economies.

(b) The Commission shall be composed of no more than nine members, who shall be appointed by the President from among the private sector, reservation tribal governments, economic academicians, and Federal employees.

(c) The President shall designate a non-Indian representative and an Indian representative to serve as cochairmen of the Commission.

Sec. 2. Functions. (a) The Commission shall advise the President on what actions should be taken to develop a stronger private sector on Federally recognized Indian reservations, lessen tribal dependence on Federal monies and programs and reduce the Federal presence in Indian affairs. The underlying principles of this mission are the government-to-government relationship, the established Federal policy of self-determination and the Federal trust responsibility.

(b) The Commission will focus exclusively on the following items, and not on new Federal financial assistance:

(1) Defining the existing Federal legislative, regulatory, and procedural obstacles to the creation of positive economic environments on Indian reservations.

(2) Identifying and recommending changes or other remedial actions necessary to remove these obstacles.

(3) Defining the obstacles at the State, local and tribal government levels which impede both Indian and non-Indian private sector investments on reservations.

(4) Identifying actions which these levels of government could take to rectify the identified problems.

(5) Recommending ways for the private sector, both Indian and non-Indian, to participate in the development and growth of reservation economies, including capital formation.

(c) The Commission should review studies undertaken in the last decade to obtain pertinent recommendations that are directly related to its mission.

(d) The Commission shall, unless sooner extended, submit a final report to the President and to the Secretary of the Interior within six months after appointment of the last Commissioner, or by September 30, 1983, whichever comes earlier.

Sec. 3. Administration. (a) The heads of Executive agencies shall, to the extent permitted by law, provide the Commission with such information as may be necessary for the effective performance of its functions.

(b) Members of the Commission may receive compensation for their work on the Commission. While engaged in the work of the Commission members may be allowed travel expenses, including per diem in lieu of subsistence, as authorized by law for persons serving intermittently in the government service (5 U.S.C. 5701-5707).

(c) The Secretary of the Interior shall, to the extent permitted by law and subject to the availability of funds, provide the Commission with such administrative services, funds, facilities, staff and other support services as may be necessary for the effective performance of its functions.

(d) The Commission will meet approximately 15 times at the call of the chairmen. All meetings of the Commission and all agenda must have prior approval of the chairmen.

(e) In carrying out its responsibilities, the Commission is authorized to:

(1) Conduct hearings, interviews, and reviews at field sites, or wherever deemed necessary to fulfill its duties.

(2) Confer with Indian tribal government officials and members, private sector business officials and managers, and other parties dealing with matters pertaining to the Commission's mission.

Sec. 4. General Provisions. (a) Notwithstanding the provisions of any other Executive order, the responsibilities of the President under the Federal Advisory Committee Act, as amended, except that of reporting annually to the Congress, which are applicable to the advisory commission established by this Order, shall be performed by the Secretary of the Interior, in accordance with the guidelines and procedures established by the Administrator of General Services.

(b) The Commission shall terminate 60 days after it transmits its final report to the President, or on December 31, 1983, whichever comes earlier.

Mr. ROE. The subcommittee will now adjourn subject to the call of the Chair. There may be an item or two that we will have to bring into focus in due course.

I want to thank you and all the staff for a splendid job, and now we will go back and interpret and decide what we are going to do.

The subcommittee stands adjourned.

[Whereupon, at 12:45 p.m., the subcommittee was adjourned.]

ADDITIONS TO THE RECORD

American Planning Association

Please reply to:
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Phone 202.872.0611

1313 E. 60th St.
Chicago, IL 60637
Phone 312.955.9100

November 15, 1983

The Honorable Robert A. Roe
Chairman
Water Resources Subcommittee
House Public Works and Transportation Committee
Room 3776 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Roe:

APA

I would like to express, on behalf the American Planning Association, our support for two bills currently being considered by your Subcommittee: HR 3282 and HR 4037.

Many of our 21,000 members from every state in the Union, professional planners, practitioners at all levels of government, planning commissioners and elected officials are involved in day-to-day decisions relating to water quality and are dedicated to its improvement and protection.

By extending the Federal Water Pollution Control Act, HR 3282 recognizes and supports the need for continuing planning and implementation to improve the water quality of our rivers, lakes, bays and estuaries. To date, may of our actions have only kept water pollution from getting worse while our population and industrial output continue to grow. Planning and construction of treatment facilities must be a continuing process if we are to make gains in maintaining and improving water quality. HR 3282 would help achieve this objective.

In addition, we are pleased to see addressed in Section 319 of HR 3282, the issue of water quality in multi-state estuaries. We support the provision to establish management conferences with respect to multi-state estuaries. We are particularly pleased that the bill encourages the development of comprehensive master plans for such estuaries and provides funding to assist states, not only in planning, but in implementing the master plans.

Our one suggestion in regard to Section 310 is that provision be made to include affected local governments in the management conference and to encourage the recognition of local master plans in the development of the comprehensive master plan for the estuaries. This not only recognizes the important role that the local government plays in planning but also the fact that many of the actions to implement the estuary master plan will have to be carried out by local as well as state governments.

President
Robert C. Einsweiler, AICP

President-Elect
Bruce W. McClendon, AICP

Executive Director
Israel Stollman, AICP

The American Planning Association also supports HR 4037, an amendment to the Federal Water Pollution Control Act, which addresses the issue of nonpoint pollution. The bill requires states to identify areas receiving water pollution from nonpoint sources and to develop plans to control this ever increasing problem.

Nonpoint pollution is both an urban and rural issue. Runoff from streets, construction sites, parking lots, driveways and lawns contain large concentrations of bacteria, toxics and fertilizers which run untreated into our waterways. Preliminary reports by the Conservation Foundation estimate that the erosion costs up to $3 billion per year because of dredging, waste treatment, flooding and other consequences. We believe that HR 4037 is a major step towards addressing this important issue.

We are particularly supportive of Section 319(a) which calls for the utilization of data previously gathered under the Clean Water Act. Much information has been collected concerning the sources and associated problems of nonpoint source pollution. HR 4037 recognizes the existence of this information and encourages its use.

Also important is Section 319(d) requiring states to work with local agencies and organizations experienced with nonpoint source control. Local and regional involvement would ensure ample public participation and support for actions that will have to be taken to address the nonpoint pollution problem.

The American Planning Association supports both of these bills and hope that they will receive approval by your Subcommittee.

If you have any questions please do not hesitate to contact George T. Marcou, AICP or Nancy P. Schamberg, AICP in our Washington office.

Sincerely yours,

Daniel R. Mandelker
Chair
National Policy Coordinating Committee

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Statement
of the
American Soybean Association
to the
Water Resources Subcommittee
Public Works & Transportation Committee
U.S. House of Representatives

August 2, 1983

The House Public Works Subcommittee on Water Resources will be hearing testimony on amendments to the Federal Water Pollution Control Act (FWPCA) of 1972 during the next three days. The American Soybean Association respectfully submits for the record the following comments on Section 404 of the FWPCA.

The American Soybean Association is a national, volunteer, non-profit, producer-controlled, single commodity association organized to assure the opportunity for a profitable soybean industry. ASA has approximately 24,000 dues-paying members and is supported by over 450,000 soybean producers who voluntarily invest in ASA programs through 24 separate statewide soybean checkoff programs. ASA seeks to maintain soybean profitability through its foreign market development, research, producer and public information, and government relations programs. ASA urges the Committee to amend Section 404 of the Federal Water Pollution Control Act to:

1) Restrict Section 404's jurisdiction to the historical definition of "navigable waterways" as found in Section 10 of the Rivers and Harbors Act of 1899;

2) Adopt a reasonable and realistic definition of "wetlands";

3) Streamline the processing of permit applications for dredge and fill activities; and

4) Authorize the Corps of Engineers to make the final decision on permit issuance.

The scope of Section 404's jurisdiction currently creates great problems and frustration for America's farmers. Originally, the Corps of Engineers was assigned the authority to issue permits for dredge and fill activities and modification of waterways under Section 10 of the Rivers and Harbors Act of 1899. Jurisdiction was based on maintaining navigability of these waterways, and the Corps restricted its concern primarily to those waterways used for interstate commerce.

Soybeans
American Soybean Association
777 CRAIG ROAD, P.O. BOX 27300, ST. LOUIS, MO 63141, TELEX 4312091, PHONE (314) 432-1600

Since that time, legislation and court decisions have expanded the scope of the Corps' review to include consideration of the effects of dredge and fill activities on water quality. In addition, court cases in 1974 and 1975 transformed the definition of "wetlands" to mean "waters of the United States" encompassing marshes, swamps, bogs, inland shallows, etc. These areas were included within Section 404 jurisdiction to be administered by the Corps.

These changes have resulted in high costs and serious planting delays to farmers conducting normal farming operations -- especially for the establishment of drainage systems necessary for crop production. This creates an unfortunate adversarial relationship between farmers and Section 404 administrators. Instead, ASA encourages that government regulations be designed to gain the "goodwill" of farmers, and not to discourage them from compliance. ASA recommends that a clearer definition of "wetlands" be established to avoid continued misunderstanding of the law. One such definition has been proposed by the Corps of Engineers and states:

> "The term 'wetlands' means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

ASA recommends that the definition of "wetlands" be further limited to those areas of land which are inundated more than 50% of the time during each year, and more than 50% of the time during the normal annual growing season for that region.

ASA urges a reduction in the time and involvement required to process permit applications. We recommend the Committee impose a statutory time limit on federal processing of applications. The current review process is unnecessarily time-consuming and costly for farmers. Soybean farmers and government alike would benefit through a reasonable reduction in paperwork and duplication of efforts.

ASA also urges that the Corps of Engineers be given authority to make the final decision on issuance of permits. Soybean farmers have encountered expeditious results in dealing with Corps Engineers. ASA recommends that EPA be denied authority to overrule Corps decisions. This would end the perpetual "tug of war" between the two agencies over implementation of Section 404.

While ASA supports the national goals of cleaner water and the protection of fish and wildlife, we urge a reduction in government regulations which prohibit the utilization of agricultural land. Such laws have delayed or simply prevented the normal farming practices of American farmers. Very often, neither water quality nor navigability has even been affected.

The American Soybean Association wishes to thank the Committee for this opportunity to present the views of the nation's soybean farmers on this important subject.

Statement of

American Textile Manufacturers Institute

Before the

House Public Works & Transportation

Subcommittee on Water Resources

October 20, 1983

Mr. Chairman, we appreciate the opportunity to submit a statement for the printed record of hearings on the reauthorization of the Clean Water Act.

The American Textile Manufacturers Institute (ATMI) is the central trade association of the American textile industry, representing about 85 percent of the domestic industry for the spinning, weaving, knitting and finishing of wool, cotton, silk and man-made fibers. ATMI provides governmental, economic, international trade, occupational safety and health, statistical, public relations and other services to the industry. This industry represents a major industrial segment of the nation's economy with approximately 850,000 employees which are 47 percent women and 23 percent minorities, both of which are well above the national average for all manufacturing.

At the outset, Mr. Chairman, ATMI fully supports the national goal of water quality which provides for the nation's waters to be fishable and swimmable by 1984. The industry has been in compliance with the Best Practicable Technology regulations established by the Environmental Protection Agency in 1974 and has accepted the recently promulgated 1984 Best Available Technology Requirements (BAT). The industry's compliance with both of these requirements demonstrates its commitment to our nation's clean water objectives. While ATMI is not seeking legislative changes to the Clean Water Act this Congress, there has been considerable discussion of the need for amendments,

particularly in those areas of water quality standards and anti-backsliding and we would like to take this opportunity to comment on them.

With respect to water quality standards a great deal of attention has been directed at preventing the downgrading of waterways and maintaining existing designated uses. The textile industry does not want increased pollution in streams nor does it advocate changing the Act's goals. ATMI does believe, however, that some current water quality standards were improperly established to provide for the protection of fish and wildlife in and on the water, without adequate analysis as to whether these uses were attainable. It has been well-documented that the existing standards were established with inadequate information and insufficient data and to perpetuate the miscalculations of the past by legislative mandate would not aid in reaching the true objectives of the Clean Water Act.

More specifically, Section 6 in H.R. 3282 would require that the state must protect and maintain existing uses which exceed designated uses unless because of essential economic or social development. We are very much aware of the controversy currently surrounding EPA's proposed revisions to current water quality standards (F.R. 49234, October 29, 1982), however, we feel that any legislative changes would totally eliminate the agency's ability to re-evaluate existing standards to incorporate new data as it becomes available. Furthermore, we believe EPA's proposed changes are modest and reflect the agency's attempt to utilize the experience gained since the program began ten years ago.

In 1972, for example, there was limited stream data available, and neither the

states nor EPA had experience in water quality setting. States were forced to rely on EPA guidance - the Red Book criteria - which was the result of only laboratory tests and never subject to peer review. Given EPA's policy of presumptive applicability, and the states' lack of resources to challenge the criteria, they were generally adopted regardless of whether or not they reflected local water quality conditions. More than enough case studies have been submitted to demonstrate where these standards are not reflective of local stream conditions. The question is not who is to blame, but what is the best way to correct these errors. The maturation and implementation of the NPDES program and the states' experiences over the last decade have provided the states with the necessary resources to review and revise their water quality standards in a technically sound fashion.

Another aspect of EPA's water quality proposal under consideration is the fact that it would not allow existing stream users to be altered once they have been met. Further, it prohibits modifying or reclassifying designated uses if they can be attained by implementing technology-based controls or if the revision would result in impairment of downstream uses. Finally states are not required to modify existing criteria, standards, or designated uses. We strongly support these restrictions and reject the contention that the limited flexibility would allow widespread degradation of water quality.

Examples of where we believe changes to designated uses are appropriate include situations where natural background pollutant levels or physical limitations in the water body make the uses unattainable. In other cases, designations need modification to allow for seasonal variance within particular stream segments.

H.R. 3282 would require that whenever a state revises a standard or adopts a new standard, it must adopt numerical criteria for each toxic pollutant which could reasonably be expected to interfere with attainment or maintenance of designated uses.

We do not believe the States or EPA can reasonably be expected to assess the need for numerical criteria for each toxic pollutant until categorical standards have been implemented. The Agency is required by the Consent Decree, paragraph 12, to "identify and address toxic problems left unsolved by the categorical approach." EPA's approach for doing this has already been identified in its September Draft Policy for the Development of Water Quality - Based Permit Limitations for Toxic Pollutants.

In addition, it is neither appropriate nor necessary that Congress require the adoption of numerical criteria for toxics every time a water quality standard is reviewed. This mandate incorrectly implies that the existing water quality standards are correct and based on facts. Numerous case studies have already been submitted to Congress demonstrating that this is untrue. A state should have the authority to make corrections when data becomes available which demonstrates that the standard should be modified, without automatically being required to conduct a toxic analysis. All states have water quality standards prohibiting the discharge of toxic materials in toxic amounts. States have been given the primary responsibility under Sec. 303 and 401 of the CWA for developing water quality standards and limits to meet those standards. It follows that states should maintain the authority to determine when a toxic assessment is needed.

The bill also incorrectly assumes that all toxic problems are caused by direct dischargers. We feel that prior to requiring a specific discharger to adopt toxic limits, it should be demonstrated that the discharge in question is the source of the toxic problems.

In summary, we believe it is necessary that categorical limits be adopted prior to assessing the need for toxics, that all changes to water quality standards do not mandate a toxic assessment, that states should maintain the primary responsibility for determining when a toxic assessment is needed, and prior to requiring a discharger to adopt toxic limits it should be factually demonstrated that the discharge is the source of the problem.

Another proposal to amend the Clean Water Act would freeze all existing and future NPDES conditions without allowing a permit issuer to consider the wisdom of doing so as permits are reissued or renewed. This "permit freeze" provision extends far beyond EPA's present comprehensive anti-backsliding rules and cuts across the structural framework of the Act, and regulations to prohibit any later reconsideration, ever by the permit issuer. ATMI believes Congress should not prevent the careful judgements allowed under the existing administrative rules by adopting a sweeping, inflexible statutory provision.

We thank you very much for the opportunity to express our opinion on amendments to the Clean Water Act and we will be happy to provide the Subcommittee with any further information.

NATIONAL
COAL
ASSOCIATION

CARL E. BAGGE
President
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COAL

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OFFICE OF JAMES J. HOWARD

September 22, 1983

The Honorable
James J. Howard, Chairman
Public Works and Transportation
2245 Rayburn House Office Building
Independence and S. Capitol Street, S.W.
Washington, D.C. 20515

Dear Mr. Chairman:

The National Coal Association retains a significant interest in amendments to the Clean Water Act (Federal Water Pollution Control Act). The amendments to the Act supported by NCA were set forth in testimony before the Subcommittee on Water Resources of the Committee on Public Works and Transportation in July 1982. A copy of that testimony from the Subcommittee printed record is enclosed.

NCA continues to appreciate that it was afforded an opportunity to present these views to the Subcommittee. Rather than restate its position during this years' hearing, NCA has submitted a July 12 letter for inclusion in the Subcommittee's record. The purpose of this letter is to stress NCA's continued advocacy for amendments to the Clean Water Act. Our decision not to request an opportunity to testify again before the Subcommittee was motivated by the recognition that NCA had been afforded an opportunity to testify, that NCA's position had not changed and that the Subcommittee is restricted in the time available for consideration of amendments to the Clean Water Act. The decision was not reached because of a lack of interest.

A secondary purpose of this letter is to transmit the enclosed copy of the July 12 letter for your review. That correspondence expands upon NCA's concern about the application of Water Quality Standards to intermittent streams and the need to provide a 10-year life for NPDES permits.

We look forward to working with you during consideration of amendments to the Clean Water Act.

Very truly yours,

Carl

Carl E. Bagge

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NATIONAL
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ASSOCIATION

COAL

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President
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Honorable Robert A. Roe
Chairman, Subcommittee on Water Resources
Committee on Public Works and Transportation
U.S. House of Representatives
Washington, D.C. 20515

July 12, 1983

Dear Mr. Chairman:

It is requested that this letter be made part of the 1983 hearings on amendments to the Federal Water Pollution Control Act before the Subcommittee on Water Resources House Committee on Public Works and Transportation.

The National Coal Association (NCA) testified before the Subcommittee on Water Resources on July 29, 1982. At that time, Jerry Lombardo, Director of Environmental Affairs, Island Creek Coal Co., outlined the changes to the Clean Water Act recommended by the coal industry. In addition, a detailed statement of NCA's proposals for revising the Clean Water Act was included in the record (Possible Amendments to the Federal Water Pollution Control Act - Hearing before Subcommittee on Water Resources of the Committee on Public Works and Transportation; 97th Congress 2nd Session; 97-73 pages 1648-1682).

NCA, which presents coal producers and sellers and other organizations associated with the American coal industry, continues to support those recommended changes. While that testimony was submitted to a previous session of Congress, it is readily available to this Congress. NCA requests that its previous submission be made part of the legislative record of any bill reported by this Committee during the 98th Congress to amend the Clean Water Act.

In addition, NCA desires to avail itself of this opportunity to supplement that earlier testimony with respect to two issues. These are 1.) Water Quality Standards for Intermittent Streams and 2.) Extension of NPDES permit life to 10 years.

Water Quality Standards Should Not Be Applicable To Intermittent Streams

Point Source discharges from coal mines are required to install the best available technology economically achievable (BAT). The Environmental Protection Agency promulgated BAT for the coal

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mine point source category on October 13, 1982 (47 Federal Register pages 45382-45399). Those standards are mandated by the statute to represent what is economically and technologically feasible to accomplish.

The standards determine what levels of pollutants are allowed in the effluent from each point source. It is important to note that by definition the pollutants in the effluent have been reduced to the level which is economically and technologically achievable.

Water quality standards apply to the body of water into which the effluent from a point source is discharged. Water quality standards are to consist of the designated uses of the water and the water quality criteria necessary to maintain such uses. In most cases the water quality standards will require pollutants at levels lower than the concentrations in the effluent after application of BAT. This does not constitute a problem where the volume of the receiving waters are sufficient to provide a mixing zone. It is where the discharge from a coal mine constitutes the flow of the stream that a problem arises.

Streams are normally classified as perennial, intermittent, or ephemeral. Ephemeral streams flow only in direct response to precipitation, intermittent streams flow part of the time, and perennial streams flow throughout the year. These are commonly accepted terms and the classification of a particular stream can be determined by reference to the topographic maps prepared by the U.S. Geological Survey.

In adopting water-quality-base standards, states have traditionally applied them to all streams (except ephemeral streams), with little or no field studies to determine whether or not standards are appropriate. Thus, water quality standards have been applied to intermittent streams. Such application does not take into consideration the fact that the streams do not have a continuous flow.

Coal mining operations are often located near the headwaters of streams. At that point, the streams are intermittent in character. In fact, in many cases the discharge from the coal mine operation is the only flow in the stream. Without the coal mining operation there would be no flow.

Application of water-quality standards in those circumstances results in the requirement that the effluent from the point source meet the more stringent water quality standards and not BAT. This imposes an economic burden on the coal mining industry which is not justified and in many cases is not achievable. BAT defines what is economically achievable.

Only in those instances where there is enough stream flow to establish and maintain an aquatic ecosystem or downstream uses require additional protection beyond that provided by BAT limits should water quality standards be applied to the intermittent streams. Congress should amend the Clean Water Act to make it clear that, except in limited instances, states should not apply water-quality-based standards to streams having only intermittent natural flow. States should apply limits beyond technology-based effluent limitations to intermittent streams only on a case by case basis when there is significant environmental benefit from such added control.

The Act Should Be Amended To Provide A 10-Year Term For NPDES Permits

Section 402(b)(1)(B) of the Clean Water Act provides that NPDES permits may be issued for a fixed term not to exceed 5 years. Yet, other federal permits issued by EPA can be issued for the life of the facility (e.g., Clean Air Act and RCRA). Extending the term of NPDES permits to provide greater consistency in permit duration would further improve efficiency under permit procedures.

Many businesses engage in extensive planning, most of which exceeds 10 year periods. Therefore, extending the life of the NPDES permit would provide more flexibility for business planning and would ease administrative burden on industry and the government without diminishing protection of the environment.

The 5 year permit term is not long enough to provide sufficient certainty for business planning. Also, the 5 year permit creates an administrative burden which causes unnecessary expenditures of time and money by unproductive exchanges of correspondence and submission of forms.

In providing permit terms of 10 years or more, EPA would not relinquish its authority to reopen permit proceedings to revise or revoke permits for just cause. Nor would extending the life of the permit diminish the emergency powers granted EPA by the statutes to address situations that pose eminent threats to the environment.

Authorization of permits for 10 or more years would provide a realistic time period for preparation, submittal and approval of the applications.

Respectfully Submitted,

Carl Bagge

Carl E. Bagge

NATIONAL COAL ASSOCIATION

STATEMENT
OF

JERRY L. LOMBARDO
REPRESENTING
THE
NATIONAL COAL ASSOCIATION
ON

AMENDMENTS TO THE
FEDERAL WATER POLLUTION CONTROL ACT
BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES
OF THE
PUBLIC WORKS AND TRANSPORTATION COMMITTEE
U.S. HOUSE OF REPRESENTATIVES

JULY 29, 1982
WASHINGTON, D.C.

Mr. Chairman, I am Jerry Lomardo, Director of Environmental Affairs, Island Creek Coal Company. I am appearing on behalf of the National Coal Association, which represents coal producers and sellers and other organizations associated with the American Coal Industry.

Mr. Chairman, you deserve the highest commendation for holding these oversight hearings on the Federal Water Pollution Control Act. Your leadership in ensuring that our Nation's water resources are protected and properly developed is well-known and fully appreciated in the coal industry.

Mr. Chairman, the coal industry supports the essential elements in the Federal Water Pollution Control Act, and believes they are sound. Yet, over the ten-year life of the Act, experience has been a good teacher. Changes can be made to make the Act more effective, more responsive, while strengthening the national commitment to clean water.

Today, I will very briefly outline the coal industry's changes to the Act, but also ask that our detailed revisions be included in the formal record.

Mr. Chairman, the Federal Water Pollution Control Act establishes the goal to reach "fishable/swimmable" waters by 1983, and to eliminate pollutant discharges by 1985. Also the Act requires phased in technology-based effluent limitations, and supplemental controls, where necessary, to achieve the desired water uses.

To reach these goals, the Act calls for a comprehensive permitting program, which specifically prescribes a careful balance of regulatory authority between the Federal Government and the states.

When the Act was passed, Congress set up the National Commission on Water Quality to examine the Act's effectiveness.

Among other things, the Commission made two significant recommendations which the coal industry also strongly supports. They are:

- The goal of eliminating pollutant discharges should be refined. Mr. Chairman, eliminating effluent discharges is widely-recognized as unrealistic, and economically unsound.
- The regulatory authority of the Federal Government and the states should be refined. The coal industry believes, that too much control has flowed to the Federal Government, which is contrary to the Act's original intent.

To these recommendations the coal industry would add a third: The Environmental Protection Agency's technical and scientific performance in setting water quality standards must be improved.

NCA Recommends That the Following Specific Changes to the Act Be Incorporated

The Zero Discharge Goal; Section 101(a)(1)

The Act presently requires that all pollutants discharged into navigable waters be eliminated. We believe that the Act should be changed to require that pollutants in harmful quantities discharged into navigable waters be eliminated.

Conforming changes should also be made in other sections of the Act where the zero discharge goal is mentioned. The phrase "consistent with the goals of this Act" should be substituted throughout the Act.

The Fishable/Swimmable Goal; Section 101(a)(2)

We believe this section must be amended to clarify the national goal of water quality. It must be clear that the goal to support fish, shellfish and wildlife and to assure that water is suitable for recreational uses is to be achieved only to the extent that it is economically and technically feasible. Also, the schedule for achieving that goal should be reasonable.

Water Quality Criteria and Standards; Section 303 and 304

"Water Quality Criteria" and "Water Quality Standard" should be defined to clarify their meaning. The roles of the Federal Government and states need to be spelled out. "Water Quality Criteria," for purposes of Section 304, should be defined as theoretical pollutant levels developed by EPA as technical guidance for permit writers and standard-setting authorities. "Water Quality Standard" in Section 303, should be defined as an acceptible pollutant level which corresponds to the particular water body involved. The standards should be set by the states and reflect site-specific water characteristics.

Applicability of Water Quality Standards

1. Congress should amend the Clean Water Act to exclude intermittent streams from federal water quality standards.

2. Congress should require EPA to demonstrate clearly -- by a preponderance of evidence -- that the benefits to society exceed the costs before water quality limitations more stringent than the regulations prescribing Best Available Technology (BAT) are imposed.

National Standards of Performance; Definition of "New Source; Section 306

Amend Section 306(a)(2) to provide that a new source is any source where construction has begun after publication of final regulations.

Enforcement of State-Issued NPDES Permits; Section 309

Amend Section 309 to prohibit EPA from bringing actions for permit violations in approved states. EPA retains oversight responsibility because the agency can withdraw NPDES authority for cause.

Duration of National Pollution Discharge Elimination System (NPDES) Permits; Section 402

Amend the Act to allow issuance of an NPDES permit for a minimum of 10 years. This permit should not be reopened except in specified circumstances, such as provided in Section 307 of the Act.

Permits for Dredged or Fill Material; Section 404

The Corps of Engineers should have exclusive authority to grant, to supervise, and to enforce the 404 permit program. Sections 404(c) and affected subsections should be amended accordingly.

The life of the permit should be extended from 5 years to 10 years or more in Section 404(e)(2), and Congress should direct

the Corps of Engineers to process dredge and fill permit applications within 90 days.

General Definitions - "Navigable Waters" and "Waters of the United States"; Section 502

This section should be amended as follows: The term "Navigable Waters" means only those waters that are currently used or are susceptible to use in their natural condition, or by reasonable improvement, to transport interstate or foreign commerce, shoreward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high water mark, and including wetlands both contiguous and immediately tributary to navigable waters.

Add a new definition of Section 502 to read: The term "waters of the United States" means (1) navigable waters; (2) tributaries of navigable waters; (3) interstate lakes, rivers and streams; and (4) intrastate lakes, rivers and streams (A) used by interstate travelers for recreation and other purposes or (b) which are a source of fish or shell-fish sold in interstate commerce and (c) territorial seas.

Mr. Chairman, these amendments are needed to eliminate the present confusion about the limits of regulatory authority.

General Definitions - Definitions of "Discharge of Pollutants" and "Point Source" and "Pollution"; Section 502

Amend Section 502(12), (14) and (19) of the Clean Water Act to read as follows:

(A) The term "discharge of a pollutant" and the term "discharge of pollutants" each means (a) any net addition of any pollutant to waters of the United States from any point source; (b) any net addition of any pollutant to waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.

(B) The term "point source" means any discernible, confined and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include surface water diversions; shallow ground water diversions, discharge from dams, ponds, or structures that serve only to control streamflow, storm water runoff or non-point source pollution, or return flows from irrigated agriculture.

(C) The term "harmful quantities" means the discharge of pollutants in such quantities as to violate a water quality standard or to preclude the downstream designated use of the receiving stream.

Administrative Procedure and Judicial Review, Section 509

This section should be amended to provide that any final action of the Administrator not specified in Subsection (B)(1)(a)-(f) shall be reviewable in the United States District Court for the district in which the petitioner resides or transacts business.

NEPA Review for New Sources, Section 511

Amend Section 511(c)(1) of the Clean Water Act to exempt NPDES permitting of new sources from environmental impact statement requirements under the National Environmental Policy Act.

Each of these recommendations is explained in detail in NCA's package of proposed amendments.

Mr. Chairman, on behalf of the National Coal Association, I appreciate the opportunity to testify before you on this critical issue. I will be glad to answer any questions.

NATIONAL COAL ASSOCIATION

NATIONAL COAL ASSOCIATION
PROPOSALS FOR REVISING THE
CLEAN WATER ACT

Recommendations
of the
NCA Environmental Committee

March 19, 1982

as approved by the

Board of Directors
of
National Coal Association

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OVERVIEW OF NCA CLEAN WATER ACT PROPOSALS

Introduction

The attached issue papers present the recommendations of the NCA Environmental Committee for legislative and regulatory changes to be incorporated into the 1982 revision of the Clean Water Act (CWA). The papers are organized into four categories each of which address a separate title of the Act:

- Recommended changes to the goals of the Act set forth in Title I;
- Recommended changes to the water quality criteria and standards and new source provisions contained in Title III;
- Recommended changes to the NPDES permit and Section 404 permit programs established by Title IV; and
- Recommended changes to a number of the general definitions, administrative and judicial review procedures and provisions governing the relationship of NEPA and the CWA contained in Title V.

The proposals set forth in these papers represent "fine tuning" of the CWA. They do not constitute an attempt to restructure the Act but rather are limited to those areas where the Environmental Committee believes that the need for change is compelling.

Other industries are preparing and will be proposing changes which will be beneficial to the coal industry and may differ from those offered here only in the approach taken to the same underlying problem. These may be adopted by NCA in the course of the legislative debate provided of course that they are in keeping with the general policy guidelines implicit in this presentation and as approved by the Board of Directors. Accordingly, specific amendatory language is generally not provided in these papers, but will be developed after Board approval of the substantive changes desired and in the course of the forthcoming debate and drafting process.

Basic Philosophy

The changes proposed here do not seek to change the basic structure or objectiveness of the Clean Water Act. We believe that the essential elements of the Act are sound. However, experience gained during implementation of the Act during the last ten years demonstrates that some of its provisions are in need of revision. In particular, we believe that changes are needed to clarify Congressional intent, streamline the administrative process and bring the roles of the federal government and the states back into balance. Each of these principles can be accomplished while retaining our nation's commitment to clean water.

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Essential Elements

The amendments proposed by the NCA Environmental Committee would:

- Revise the zero discharge goal in Secton 101 of the Act. It has long been recognized that zero discharge is economically and technically infeasible and would contribute little if any benefit to the environment. The fishable/swimmable goal would also be revised to reflect consideration of economic feasibility;

- Restore the role of the states in establishing water quality criteria and standards and clarify EPA's standards and impose water quality based limitations in NPDES discharge permits;

- Incorporate greater certainty in the administrative process by clarifying the definition of new sources and extending the term of NPDES permits from the current five year period to at least ten years and by streamlining the Section 404 permit process;

- Eliminate the considerable confusion which has developed as a result of conflicting judicial and administrative decisions over the definitions of "navigable waters," "waters of the United States," discharge of pollutants" and "point source," and clarify the applicability of rulemaking procedures to EPA publication of "guidance documents;" and

- Exempt the issuance of NPDES permits for new sources from environmental impact statement requirements under NEPA.

SUBJECT: THE ZERO DISCHARGE GOAL CONTAINED IN SECTION 101(a)(1) OF THE ACT

RECOMMENDATION: Section 101(a)(1) should be amended to require that the national goal to eliminate the discharge of pollutants be limited to pollutants in harmful quantities into the navigable waters; conforming changes should also be made to other sections of the Act where the zero discharge goal is mentioned, e.g. Sections 301(b)(2)(A), 301(c), 301(k), 304(b)(3), 306(a)(1) and 307(a)(2)(6). A "consistent with the goals of this Act" phrase should replace any mention of zero discharge in these sections.

BACKGROUND: Section 101(a) of the Clean Water Act provides that "it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985." Although there is considerable consensus that Congress' intent was not to enforce a literal interpretation of the "zero discharge" goal, the EPA and the Courts have used the 1985 goal to justify increasingly stringent discharge guidelines which provide little, if any, environmental benefit.

PRINCIPAL PROBLEM AREAS: The ultimate practicability of achieving zero discharge across the board is in serious question. While technologies may exist to eliminate the discharge of pollutants, they often are extremely costly, highly energy intensive and will create sludge disposal problems of an enormous magnitude. In many cases the costs of eliminating the discharge of all pollutants would not be justified by the incremental water quality benefits that would result.

DISCUSSION: On May 29, 1981, EPA published proposed rules for the Coal Mining Point Source Category (46 FR 28873). These rules recommend the various technology levels commonly referred to as BPT, BAT, BCT and NSPS for the coal industry. In its development document, EPA recognized that the application of BPT in the coal industry has already surpassed their initial expectations in pollutant removal and that additional technology is not justified. Thus, EPA proposed to make BAT, BCT and NSPS identical to BPT, with one exception. That exception is in the NSPS proposal for raw coal preparation plants. Here, EPA proposes zero discharge.

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DISCUSSION: (Cont'd)

The development document does not offer any compelling reason for no discharge. It concludes that no regulations are necessary for the control of toxic organic compounds since they are virtually absent and metals are already effectively controlled by BPT technology. The BPT effluent limitations are the same for mine drainage as for prep plants and associated areas. Therefore, there is no justification for singling out prep plants for a zero discharge requirement.

The alleged benefits attributable to zero discharge at preparation plants are negligible. The development document states that a typical facility removes 370,000 pounds per day of total suspended solids. Installation of facilities to achieve zero discharge supposedly would remove an additional 150 pounds per day from waters discharged to the environment. This amounts to an insignificant additional 0.037 percent removal. However, even this figure is inflated because these pounds per day will merely be transferred to the environment, in concentrated form, as solid waste rather than a dilute nonpolluting discharge. It makes more sense to discharge this water in compliance with the same effluent limitations applicable to other discharges in the coal mining point source category.

This same rationale which applies to the coal industry would apply to other industries as well. Even with the most sophisticated pollution control equipment, industry is not always capable of continuing its operations without the discharge of some pollutants. We must recognize that the "zero discharge" goal is technologically undesirable, and in many cases infeasible. Even assuming the goal could be met, consideration must be given to the ultimate disposition of pollutants; zero discharges in waters will result in more pollutants being discharged into the air and onto or in the land. Furthermore, compliance frequently is extremely costly, both in terms of capital investment and operation and maintenance costs with little additional benefit to the environment.

The Clean Water Act should be modified, not to change its basic objective of restoring and maintaining the chemical, physical and biological integrity of the nation's waters, but

DISCUSSION: (Cont'd)

to bring its goals into better balance with other important national goals, such as energy conservation, control of inflation, and industry productivity. By amending Section 101(a)(1) to establish as a goal the elimination of pollutants in harmful quantities into navigable waters, the Act will more closely reflect a reasonable balancing of these concerns, while at the same time remaining the driving force in the control of water pollution.

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SUBJECT: THE FISHABLE/SWIMMABLE GOAL CONTAINED IN SECTION 101(a)(2) OF THE ACT

RECOMMENDATION: Amend Section 101(a)(2) to make clear that the national goal of water quality that will support fish, shellfish and wildlife and is suitable for recreational uses is to be achieved only to the extent that it is reasonable to do so and that the schedule for achieving that goal should also be reasonable.

BACKGROUND: Section 101(a)(2) of the Act now provides that, wherever attainable, water quality which protects, and permits the propagation of fish, shellfish and wildlife, and is suitable for recreational uses, must be achieved by July 1, 1983.

The language of Section 101(a)(2) appears to allow some flexibility because the "fishable/swimmable" goal is to be met "wherever attainable." Nevertheless, the EPA has turned this language into an inflexible mandate, deeming it "attainable" unless widespread economic disruption can be proven to result.

PRINCIPAL PROBLEM AREAS: EPA uses the fishable/swimmable goal as the basis for developing water quality criteria under Section 304 of the Act. To develop these criteria, EPA uses laboratory studies of the effects certain substances have on the most sensitive of aquatic species. After obtaining lab results, EPA then applies safety factors ranging from 1,000 to 10,000 to develop the water quality criteria. The result can only be very stringent limits on the substance under study. These criteria are then adopted by states and frequently are applied wholesale across the entire spectrum of streams whether such streams are capable of supporting a fishable/swimmable goal in their natural state.

A special hardship occurs when these standards are applied to streams which are of naturally low flow or tend to dry up under drought conditions. Moreover, despite the fact the EPA spends millions of dollars and many years to develop the treatment technology recommendations in the first place, EPA and/or state permit writers tend to supersede the various treatment technology levels recommended by EPA and impose more stringent effluent standards to meet the stringent water quality standards.

DISCUSSION: There is clearly no justification for designating all waters to be fishable or swimmable. Even before the introduction of manmade pollution, there have always existed certain bodies of water that were neither fishable nor swimmable because of their high background levels of natural pollutants or because of their natural limitations in stream flow.

In reconstructing the evolution of the Clean Water Act, one can see a logical extension of the Refuse Act of 1899 and its use of the term "navigable waters" and the carry-over of this same term in the Clean Water Act. Navigable waters in the Refuse Act context were truly large streams capable of supporting interstate commerce or others which were defined as navigable by the Courts. Perhaps, the application of the fishable/swimmable goal for such traditionally large streams is meaningful and readily attainable. However, in view of the recent broad expansion of the term "navigable" by EPA with its definition of the "waters of the United States" to include upper reaches of watersheds, intermittent streams, mud flats, prairie potholes, etc., the application of the fishable/swimmable goal in all such cases is readily seen as ludicrous.

Revising the goal set forth in Section 101(a)(2) would send a message to EPA that it must pay greater attention to whether a fishable/ swimmable standard is actually "attainable." Moreover, clarifying the Section 101(a)(2) goal would eliminate the apparent conflict between that goal and other provisions of the Act which grant states discretion to classify state waters for various uses. States must be allowed to classify for other uses those waters which, because of natural causes or present uses, do not support fishing or swimming.

Finally, in many cases, the benefits to be derived from achieving "fishable/swimmable" water quality are not commensurate with costs. This goal must be balanced against other water uses and other national goals, such a industrial development, productivity and energy conservation.

SUBJECT: THE WATER QUALITY CRITERIA AND STANDARDS PROVISIONS OF SECTION 303 AND 304 OF THE ACT

RECOMMENDATION:

> The terms "water quality criteria" and "water quality standard" should be defined in the Act in order to clarify their meaning and the distinct roles of the federal government and states with respect to them. "Water quality criteria," for purposes of Section 304, should be defined as theoretical pollutant levels developed by EPA as technical guidance for permit writers and standard-setting authorities. "Water quality standard" for purposes of Section 303, should be defined to consist of the uses designated by the states for the particular water body involved and the acceptable pollutant level corresponding to such uses that has been modified to reflect site-specific water characteristics.

BACKGROUND: Section 304 of the CWA requires EPA to publish information or "criteria" on the effects of various pollutants, at various concentrations, on health and welfare including effects on plant and animal life. Section 303 requires states to adopt water quality standards, and gives EPA the authority to determine whether state water quality standards are consistent with the requirements of the Act. Nowhere, however, is EPA authorized to require that states apply EPA's criteria in developing standards.

PRINCIPAL PROBLEM AREAS: In an Advanced Notice of Proposed Rulemaking (43 Fed. Reg. 29588 (July 10, 1978)), EPA announced a policy of "presumptive applicability" for Section304(a)(1) criteria. Although the Agency has recently indicated that it may abandon its presumptive applicability policy, it is not clear that EPA's policy has in fact changed.

DISCUSSION: EPA appears to have taken the position that fishable/swimmable use designations are the norm in developing water quality standards, and that less stringent designations will be allowed only in limited circumstances. Nothing in Section 303 requires the setting of standards for fishable/swimmable uses only. States should retain primary responsibility for developing standards based on multiple water uses.

DISCUSSION: (Cont'd) We believe that EPA's information criteria under Section 304 should not be presumptively applicable. Section 303 should provide for multiple use designations and the adoption of standards designed to ensure that such uses are maintained.

While EPA's information criteria should not be presumptively applicable to the states, it is nonetheless likely that states which have limited resources to devote to independent research will rely heavily on EPA's criteria in developing water quality standards. It is, therefore, critical that the criteria rest on a sound technical foundation. To ensure that the criteria are technically valid, the criteria should be subject to public notice and comment and peer review.

SUBJECT: APPLICABILITY OF WATER QUALITY STANDARDS

RECOMMENDATION:

1. Congress should amend the Clean Water Act to exclude intermittent streams from federal water quality standards.

2. Congress should amend the Act to direct EPA to demonstrate, by a preponderance of evidence, that the benefits to society exceed the costs before it imposes water quality based limitations that are more stringent than applicable BAT.

BACKGROUND: In adopting EPA recommended criteria, states have traditionally applied such criteria, across the board to all streams with little or no site specific field studies to determine whether such criteria are appropriate for such streams.

PRINCIPAL PROBLEM AREAS: This problem is particularly acute for the coal mining industry due to the traditional operation in the upper watersheds of streams which, by their nature, are intermittent in character. During drought or dry conditions, little, if any, flow can be found in these streams. When this occurs, water quality standards applicable to such streams are frequently imposed as effluent limitations.

DISCUSSION: Water quality standards are frequently more stringent than effluent standards developed by EPA under Sections 301 and 306 of the Act. The concept of applying these stringent water quality standards as end-of-pipe limits has never been shown to be reasonable or feasible.

There may be rare occasions where certain streams require additional protection through effluent limitations more stringent than present technology based treatment levels prescribed by EPA. However, such limits should only be applied after performance of a cost/benefit analysis, and they should never be applied to intermittent streams.

SUBJECT: SECTION 306 NATIONAL STANDARDS OF PERFORMANCE: DEFINITION OF "NEW SOURCE"

RECOMMENDATION: Amend Section 306(a)(2) of the Act to provide that a new source is any source the construction of which is commenced after publication of final regulations prescribing a standard of performance under this section applicable to such source.

BACKGROUND: As currently written, the Clean Water Act defines a new source as "any source, the construction of which is commenced after the publication of proposed regulations prescribing a standard of performance." Further, the Act empowers the Administrator to revise from time to time such standards as technology and alternatives change.

PRINCIPAL PROBLEM AREAS: There have frequently been protracted delays between proposal of new source standards and their promulgation in final form. This delay has led to unnecessary costs and confusion. For example, EPA proposed new source performance standards for the coal mining point source category on September 19, 1977 (42 Fed. Reg. 46932). Final regulations were not published until January 12, 1979 (44 Fed. Reg. 2586). Many operators were hesitant to expend large sums of capital when all of the "rules of the game" were not yet finalized. In order to eliminate this problem in future regulations, the effective date of new source standards should be the date of final promulgation, rather than proposal.

SUBJECT: ENFORCEMENT OF STATE-ISSUED NPDES PERMITS

RECOMMENDATION: Amend Section 309 of the Act to prohibit EPA from bringing actions for permit violations in approved states. EPA can retain oversight responsibility because it may withdraw state NPDES authority for cause.

BACKGROUND: Under Section 309, the EPA Administrator has the option of bringing an enforcement action directly against the violator of a state-issued permit or to allow the state to bring an enforcement action within 30 days after EPA notifies the violator and the state.

PRINCIPAL PROBLEM AREAS: Present provisions create potential double jeopardy for dischargers, who face prosecution by both EPA and the state.

SUBJECT: DURATION OF SECTION 402 NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS

RECOMMENDATION: Amend Section 402(b)(1)(B) to allow the issuance of an NPDES permit for a minimum term of 10 years. This permit should not be reopened except in rare, specified circumstances, such as provided in Section 307 of the Act.

BACKGROUND: Section 402(b)(1)(B) of the Act provides that NPDES permits may be issued for a fixed term not to exceed 5 years. Yet, other federal permits issued by EPA can be issued for the life of the facility (e.g., Clean Air Act and RCRA). Extending the term of NPDES permits to provide greater consistency in permit duration would further improve efficiency under consolidated permit procedures.

Many businesses engage in extensive planning, most of which exceeds 10 year periods. Therefore, extending the life of the NPDES permit would provide more flexibility for business planning and would ease administrative burden on industry and the government without diminishing protection of the environment.

PRINCIPAL PROBLEM AREAS: The 5 year permit term is not long enough to provide sufficient certainty for business planning. Also, the 5 year permit creates an administrative burden which causes unnecessary expenditures of time and money by unproductive exchanges of correspondence and submission of forms.

DISCUSSION: In providing permit terms of 10 years or more, EPA would not relinquish its authority to reopen permits proceedings to revise or revoke permits for just cause. Nor would extending the life of the permit diminish the emergency powers granted EPA by the statutes to address situations that pose eminent threats to the environment. Authorization of permits for 10 or more years would provide a realistic time period for preparation, submittal and approval of the applications.

REFERENCES: Clean Water Act -- Section 402(b)(1)(B).

Consolidated Permits Regulations - 40 CFR - Parts 122, 123 and 124.

SUBJECT: PERMITS FOR DREDGED OR FILL MATERIAL UNDER SECTION 404 OF THE ACT

RECOMMENDATION:

1. The Corps of Engineers should be given the exclusive authority to grant, supervise and enforce the 404 permit program. Sections 404(c) and affected subsections should be amended accordingly.

2. The period of the permit should be extended from 5 years to 10 years or more in Section 404(e)(2).

3. Congress should direct the Corps of Engineers to act and process dredge and fill permit applications within 90 days.

BACKGROUND: The Assistant Secretary of the Army for Civil Works announced on October 16, 1981, that intensive efforts are underway to review the Department of Army's Section 404 permit program under the Clean Water Act. Included among the revisions being considered by the Corps are steps 1) to shorten the permit processing time; 2) to give states more opportunities to issue permits; 3) to eliminate conflicting and overlapping policies; 4) to expand regional and nationwide general permits; and 5) to better define the objectives and jurisdictional extent of the permit program.

The EPA guidelines issued under Section 404(b) (40 CFR Part 230) on September 18, 1977, have never been finalized. Similarly the proposals to amend the existing regulations (33 CFR Parts 320-329) published on September 19, 1980 (45 Fed. Reg. 62732), have not been finalized.

DISCUSSION: EPA and the Corps are given overlapping authority under Section 404. This has led to inefficiency and waste of resources. The Corps should be given exclusive authority over the Section 404 program.

To minimize the workload of the Corps, the period of permit duration should be extended to the life of the project, or at the very least, for a minimum of 10 years.

DISCUSSION: (Cont'd) Industry has been faced with substantial delays and unreasonable economic costs due to the way the Corps is administering the dredge and fill permit program. Despite the clear 30-day review period directives of Section 404(m) and (g) of the Clean Water Act, federal and state fish and wildlife agencies are taking, and Corps regulations allow, an excessive comment period on permit applications. When comments are submitted, the operating conditions recommended are frequently unreasonably restrictive. The Corps, rather than exercising its judgment and refusing to adopt any unreasonable or conflicting recommendations, requires the applicant to resolve any disputes with each and every party involved. Imposing a statutory requirement that the Corps act on permit applications within 90 days should help remedy these problem while still providing adequate time for public and agency comment.

REFERENCES:

1. 40 CFR Parts 230-231.
2. 33 CFR Parts 320-329.
3. 45 Fed. Reg. September 19, 1980, pp. 62732 (revision of 33 CFR).
4. 44 Fed. Reg. September 18, 1979, pp. 54222 (revision of 40 CFR).
5. Bill S-777 March 24, 1981.
6. Army Press Release No. 474-81/October 16, 1981, on the Review of Section 404 of Clean Water Act.

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SUBJECT: SECTION 502 GENERAL DEFINITIONS - NAVIGABLE WATERS AND WATERS OF THE UNITED STATES

RECOMMENDATION:

1. Amend Section 502(7) to read:

   The term "navigable waters" means only those waters that are currently used or are susceptible to use in their natural condition, or by reasonable improvement, to transport interstate or foreign commerce, shoreward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide shoreward to their mean high water mark, and including wetlands both contiguous and immediately tributary to navigable waters.

2. Add a new definition of Section 502 to read:

   The term "waters of the United States" means (1) navigable waters; (2) tributaries of navigable waters; (3) interstate lakes, rivers and streams; and (4) intrastate lakes, rivers and streams (a) used by interstate travelers for recreation and other purposes or (b) which are a source of fish or shellfish sold in interstate commerce and (c) territorial seas.

BACKGROUND: Section 404 of the Clean Water Act requires permits issued by the Corps of Engineers for disposal of dredged or fill material in the "navigable waters" of the United States. The definition of "navigable waters" in Section 502 is too vague to provide legislative guidance. Both the Corps and EPA have been obliged to define "waters of the United States" in order to provide administrative guidance.

PRINCIPAL PROBLEM AREAS: Considerable confusion surrounds the definition and use of the term "navigable waters" in the Clean Water Act. The term defined as "waters of the United States" has not been defined by Congress and is quite ambiguous. Both EPA and the Corps have developed administrative definitions for "waters of the United States." The CWA defines "navigable waters" as the "waters of the United States" that include territorial seas, coastal and inland water, lakes, rivers including adjacent wetlands. 33 CFR § 323.2 defines "navigable waters of the United States" as "those

PRINCIPAL PROBLEM AREAS: (Cont'd) waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce."

Because the CWA gave a broader definition for U.S. waters, the Corps of Engineers is obligated by law to include wetland considerations in the issuance of 404 permits. This should be corrected by redefining navigable waters for the purpose of 404 permits.

The lack of legislative direction contained in the definition of navigable waters has led to court rulings and agency regulations that are much broader and more cumbersome than Congress intended. As a result, the jurisdiction of the Corps has been extended far beyond waters traditionally considered to be navigable.

The recommended change in the definition of "navigable waters" is necessary to clearly indicate that Section 404 applies only to water courses that are navigable or wetlands that are contiguous with and tributary to these navigable water courses.

In other sections of the Act where "navigable waters" is used where the intent is clearly "waters of the United States" such as in Section 402(a)(4) we suggest that the broader term "waters of the United States" be used instead.

DISCUSSION: While NCA supports the protection of the nation's navigable waters from the adverse impact of dredged or fill material disposal, we believe that a change in the definition of "navigable waters" is essential to produce a permitting program that more closely corresponds to what we believe to have been Congress' original intent. Dredge or fill permits for activities outside these navigable waters and the wetlands immediately adjacent to them should require no federal permit. Finally, we do not believe it was Congressional intent to authorize the Corps under Section 404 to regulate land use activities on wetlands that cannot impact navigation.

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SUBJECT: SECTION 502 GENERAL DEFINITIONS - DEFINITIONS OF "DISCHARGE OF POLLUTANTS" AND "POINT SOURCE" AND "POLLUTION"

RECOMMENDATION:

Amend Section 502(12), (14) and (19) of the Clean Water Act to read as follows:

(a) The term "discharge of a pollutant" and the term "discharge of pollutants" each means (a) any net addition of any pollutant to waters of the United States from any point source; (b) any net addition of any pollutant to waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.

(b) The term "point source" means any discernible, confined and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include surface water diversions; shallow ground water diversions, discharge from dams, ponds, or structures that serve only to control streamflow, storm water runoff or non-point source pollution; or return flows from irrigated agriculture.

(c) The term "harmful quantities" means the discharge of pollutants in such quantities as to violate a water quality standard or to preclude the downstream designated use of the receiving stream.

BACKGROUND: The NPDES permit program established by Section 402 of the Clean Water Act applies to the discharge of any pollutant into navigable waters. The definitions in Section 502 imply that the discharges regulated under 402 apply to any addition of any pollutant to waters of the United States from any point source.

PRINCIPAL PROBLEM AREAS: Since the basis of the NPDES program is the development of technology-based effluent limits, it is necessary that the definition of point sources apply to discharges that are amenable to treatment to specific effluent limits using

PRINCIPAL PROBLEM AREAS: (Cont'd) a proven technology. A change in the definition of point source is necessary to reverse court rulings that NPDES permits are required for discharge of storm water runoff or streamflow where no technology exists to achieve specific effluent limits. Furthermore, activities which do not result in the net addition of pollutants to navigable waters should not be considered point sources of pollutants since these activities can be considered as stream flow regulating activities. These activities are best controlled with management practices that are compatible with the water laws and practices of the state.

The change in definition of "pollution" is suggested to reflect the intent that pollution refers to an adverse change in the water resource that can impact its potential use. Thus stream depletion through water use could be considered pollution even though it involves no discharge of pollutants. On the other hand, a change in chemical, physical or biological activities that does not impact existing or potential water use is not pollution.

DISCUSSION: The change in definition of point source is necessary to eliminate the present cumbersome, inefficient program requiring exemptions, such as storm exemptions, to the definition of point source to develop a viable regulatory program. The existing definition implies that discharge permits may be required for storm water flowing through ponds, culverts or diversions. Administrative rulings have attempted to limit the scope of the point source definition but these limitations, such as the exclusion for dams, have been overruled by the courts.

Efforts to control and mitigate the impacts of non-point source pollution can result in a need to obtain NPDES permits. Effluent limits may be difficult or impossible to meet for such sources without exemptions for large storm events. Thus operations that control non-point source pollution under mandated programs such as SMCRA or voluntary programs under Section 208 are, in effect, penalized for these efforts.

30-955 O—84——218

DISCUSSION: (Cont'd)

The changes in definition of pollution and discharge of pollutants are recommended to make the programs authorized under the Clean Water Act more compatible with water management. Water users would not be penalized for withdrawing water from a particular water source if it could be returned to the same source at approximately the same quality. This would not result in degradation of water quality but could avoid expensive storage or overflow provisions required in water recycle operations.

SUBJECT: ADMINISTRATIVE PROCEDURE AND JUDICIAL REVIEW

RECOMMENDATION:

Section 509 of the Act should be amended to provide that any final action of the Administrator not specified in Subsection (b)(1)(A)-(F) shall be reviewable in the United States District Court for the district in which the petitioner resides or transacts business.

BACKGROUND:

In implementing its statutory programs, EPA has followed the practice of issuing guidance materials, instructions, manuals, etc., for the use of EPA and state permit writers. Such materials often have not been made subject to public comment and EPA has avoided judicial review of them by claiming they are not regulations but are only of a policy or guidance nature. Nevertheless, these materials significantly influence EPA's regulatory and enforcement programs and directly effect industry permittees.

PRINCIPAL PROBLEM AREAS:

EPA has followed a practice of issuing instructions, manuals and other similar information or directives to EPA and state permit writers regarding implementation of NPDES program. Such information and directives have not been subject to public comment and often escape judicial review based on the assertion by EPA that they are only policy or guidance. Often the public is unaware of the existence of these documents and the EPA policies set further therein. Yet, these policies and guidance have a major impact on industry.

Examples include the Agency's five-volume treatability manual, which will be used to set case-by-case permit limits; the water quality criteria, which will be used by states in developing water quality standards; and a best management practices manual, which may be used in writing or enforcing permits.

DISCUSSION:

To ensure that EPA action which directly affects dischargers will not escape judicial scrutiny, review should be provided in a United States District Court of all final EPA action taken under the authority of the Act other than that made reviewable in the Courts of Appeals. Such final action would include issuance not only of published rules and regulations, but also guidelines, manuals, guidance documents, instructions, criteria and other such documents in-

DISCUSSION: (Cont'd)

tended by EPA to be applied by its Regional Offices and the states. In addition, EPA should be required to publish notice of the availability of and to take comments on all such documents that have an impact on the public and the regulated community.

SUBJECT: NEPA REVIEW FOR NEW SOURCES

RECOMMENDATION: Amend Section 511(c)(1) of the Clean Water Act to exempt NPDES permitting of new sources from Environmental Impact Statement requirements under the National Environmental Policy Act.

BACKGROUND: A NPDES permit is only required for a point source discharge and governs only "end-of-pipe" requirements. It is inappropriate to require new sources seeking only a NPDES permit to comply with NEPA environmental impact statement requirements. NEPA procedures need to be followed for truly major federal actions significantly impacting the environment. However, the act of issuing a NPDES permit for coal mining operations is not a major federal action significantly impacting the environment and should not be so considered. The process of complying with NEPA requirements is one of the main causes for delay in the permit process for new operations. The requirement for an environmental impact statement delays the issuance of the NPDES permit and causes undue hardship on the operator by tying up capital and manpower.

PRINCIPAL PROBLEM AREAS: Presently, the Clean Water Act subjects certain categories of new point-source dischargers to review under the National Environmental Policy Act of 1969 (NEPA) when the EPA administrator issues an NPDES permit. The requirement to conduct an environmental review and to prepare an Environmental Impact Statement (EIS) for a new project is time-consuming, unduly burdensome, and can cause long delays in permit issuance. Permits for new sources of air emissions and hazardous wastes are exempted from NEPA impact statement requirements. Imposing EIS requirements on new water discharge sources is similarly unnecessary.

DISCUSSION: Congress provided in Section 511 of the CWA that nothing in the National Environmental Policy Act of 1969 (NEPA) should be deemed to authorize the imposition of any effluent limitations other than limitations established under the CWA. It should also be made clear that new sources are not subject to the Environmental Impact Statement (EIS) requirement of Section 102(2)(c) of NEPA. Preparation of an EIS for new sources is a time-consuming and unnecessary process.

DISCUSSION: (Cont'd)

While the requirement that such an EIS be prepared may make sense as applied to federal agencies other than EPA, it is unnecessary to impose the heavy burden of preparing an EIS on EPA since that Agency, in acting under the environmental statutes, performs the "functional equivalent" of an EIS. Moreover, EPA has in the past used its NEPA responsibilities to assert jurisdiction far beyond its authority under the CWA. For example, in its NPDES regulations, EPA has provided that, as a general rule, new sources may not begin construction prior to the issuance of a final EIS and NPDES permit. We do not believe that Congress ever intended the Clean Water Act to regulate construction as opposed to discharges.

ACRONYMS

EPA	Environmental Protection Agency
Corps	Army Corps of Engineers
NPDES	National Pollution Discharge Elimination System
CWA	Clean Water Act
BPT	Best Practicable Technology
BAT	Best Available Technology
BCT	Best Conventional Technology
NSPS	New Source Performance Standards
RCRA	Resource Conservation and Recovery Act
NCA	National Coal Association
SMCRA	Surface Mining Control and Reclamation Act
EIS	Environmental Impact Statement
NEPA	National Environmental Policy Act

CLEAN WATER ACT TASK FORCE

Mr. Jerry Lamberda, Chairman	Island Creek Coal Company
Mr. Bruce Kraez	North American Coal Corporation
Mr. Ronald Cross	Peabody Coal Company
Mr. N. Krishnamurthi	Utah International
Mr. Hav Karkaria	Consolidation Coal Company
Mr. Art O'Hare	Arco Coal Company
Mr. David Todd	Ashland Coal Company
Mr. Dan Harlow	Diamond Shamrock
Mr. Joseph Mullen	National Coal Association
Mr. Charles Drevna	National Coal Association

LET'S REBUILD AMERICA

IN THE 80'S

Statement of the Chamber of Commerce of the United States

ON: FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS
(H.R. 3282, H.R. 4037)

TO: SUBCOMMITTEE ON WATER RESOURCES OF THE
HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

BY: DR. HARVEY ALTER

DATE: NOVEMBER 30, 1982

The Chamber's mission is to advance human progress through an economic, political and social system based on individual freedom, incentive, initiative, opportunity and responsibility.

The Chamber of Commerce of the United States is the largest federation of business and professional organizations in the world, and is the principal spokesman for the American business community. The U.S. Chamber represents more than 204,000 members, of which more than 200,500 are business firms, more than 2,500 are state and local chambers of commerce, and more than 1,200 are trade and professional associations.

More than 85 percent of the Chamber's members are small business firms having fewer than 100 employees. Yet, virtually all of the nation's largest industrial and business concerns are also active members. We are particularly cognizant of the problems of smaller businesses, as well as issues facing the business community at large.

Besides representing a cross section of the American business community in terms of number of employees, the U.S. Chamber represents a wide management spectrum by type of business and location. Each major classification of American business -- manufacturing, retailing, services, construction, wholesaling, and finance -- numbers more than 15,000 members in the U.S. Chamber. Yet no one group constitutes as much as 23 percent of the total Chamber membership. Further, the Chamber has substantial membership in all 50 states.

The Chamber's international reach is substantial as well. It believes that global interdependence provides an opportunity and not a threat. In addition to the 48 American Chambers of Commerce Abroad, an increasing number of Chamber members are engaged in the export and import of both goods and services, and have ongoing investment activities. The Chamber favors strengthened international competitiveness and opposes artificial U.S. and foreign barriers to international business.

STATEMENT
on
FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS
(H.R. 3282, H.R. 4037)
for submission to the
SUBCOMMITTEE ON WATER RESOURCES
of the
HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
for the
CHAMBER OF COMMERCE OF THE UNITED STATES
by
Dr. Harvey Alter*
November 30, 1983

The Chamber of Commerce of the United States is pleased to have the opportunity to comment on H.R. 3282 and H.R. 4037, proposed amendments to the Federal Water Pollution Control Act (Clean Water Act).

The Chamber strongly supports the national commitment to the restoration and maintenance of the chemical, physical and biological integrity of the nation's waters. We believe that these are laudable goals that can be achieved through the application of reasonable strategies that will result in demonstrable water quality improvements.

Amendments to the Clean Water Act should be assessed in light of the substantial progress that has been made toward improving surface water quality since passage of the 1972 amendments. Most water bodies are now meeting the Act's fishable/swimmable goals. This progress should continue. In our view, the primary challenges before this Subcommittee are to review the adequacy of the present law to manage current surface water quality problems effectively, and determine the most appropriate ways to continue progress made to date.

The Chamber intends to work with the Water Resources Subcommittee and the Public Works and Transportation Committee to meet these challenges. We will take this opportunity to comment on seven issues that we consider to be of importance to the reauthorization of the Clean Water Act. Our comments are summarized below.

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*Manager, Resources Policy Department, Chamber of Commerece of the United States.

- Water Quality Standards

  The Chamber opposes Section 6 of H.R. 3282 because the proposal would eliminate states' flexibility under current law and regulations to modify designated water uses, and is unnecessary in light of the Environmental Protection Agency's (EPA) recently promulgated revisions to the water quality standards regulations.

- Pretreatment Authority

  The Chamber recommends amending the Act to allow municipalities, under certain prescribed conditions, the option to develop and manage local pretreatment programs.

- Post-BAT Permit Requirements

  The Chamber opposes Section 7 of H.R. 3282, which would mandate water quality based permit requirements prior to promulgation of best available technology (BAT) effluent limitations guidelines and the full implementation of other statutory provisions.

- BAT/BCT Compliance Deadlines

  The Chamber supports the three year extension of BAT compliance deadlines as outlined in Section 4 of H.R. 3282, and believes that a similar three year extension should be granted for best conventional technology compliance (BCT).

- NPDES Permit Term

  The Chamber recommends that the National Pollutant Discharge Elimination System (NPDES) permit term be extended from five to ten years.

- Federal Common Law

  The Chamber opposes any attempt to expand common law remedies to allow suits against dischargers for damages and pollution abatement by establishing a federal common law provision in the Clean Water Act.

- Nonpoint Source Pollution Control

  The Chamber recognizes the importance of nonpoint source pollution control measures and is in the process of developing a position on this issue. We would like to reserve the opportunity to comment further on the strategy outlined in H.R. 4037 when our policy is finalized in early 1984.

Water Quality Standards

The Chamber is strongly opposed to Section 6 of H.R. 3282 that would require states to "maintain the designated uses of the navigable waters in effect on January 1, 1983." Secton 6 is unnecessary in light of EPA's recent evaluation of changes to existing regulations governing the way states set water quality standards (48 FR 54100, November 8, 1983). We view EPA's revised water quality standards regulations as providing sound guidance to states for determining appropriate water uses in cases where designated stream uses have not been met or are not likely to be met after the imposition of technology-based controls. Under these revised regulations, the Act's minimum technology-based requirements would not be altered, and states would be allowed the necessary flexibility to establish attainable water uses. We support the approach adopted by EPA and believe it to be consistent with the objectives of the Clean Water Act. We urge you to drop Section 6 from H.R. 3282 on this basis, which is explained further below.

The Amendments of 1972 emphasized a technology-based approach to the control of pollutants. This strategy was deemed necessary to meet the Act's goals which are clearly based on an assessment of the quality of the nation's waters. States retained primary responsibility for determining the water quality levels appropriate for the designated uses of the waters in their jurisdiction, as well as for establishing and enforcing limitations to be placed on dischargers.

The technology-based standards set minimum control requirements that all point source dischargers are required to meet. Where these requirements are inadequate to achieve a particular state-designated water use (water quality limited stream segments), the state water quality standards serve as the basis for additional controls necessary to meet those uses. In practice, industry must meet the more stringent of the two standards.

Water quality standards serve a dual purpose: (1) they establish the water quality goals for a specific water body, and (2) they serve as the regulatory basis for the establishment of water quality-based controls beyond the minimum technology requirements required under the Act. Current law reflects Congress' recognition that there are many uses of a water resource and that the Act's goals should not exclude justifiable uses. In determining the feasibility of attaining or maintaining designated water uses, states should continue to analyze the environmental, physical and economic factors that influence the attainment of a given use. In order to do so, states must be allowed flexibility to make reasonable determinations as to whether designated water uses are attainable in those limited, special circumstances where attainment is less feasible.

Based on current law, existing water quality regulations allow needed flexiblity where designated uses cannot be met. Where the designated use is not attainable due to natural background or irretrievable man-induced conditions, states should be able to modify existing uses, and are able to do so under current regulations. This approach, which takes into account both the goals of the Clean Water Act and those special circumstances which may affect the attainment of the goals in certain water bodies, is a realistic and responsible means of achieving clean water goals while balancing other important objectives. Adoption of Section 6 would remove this necessary flexibility.

Many of the original water quality standards were not based on sound and accurate information. The limited stream data available in 1972, the states' lack of expertise in water quality standards setting, and EPA's other priorities, resulted in the development of standards which, in many cases, do not reflect site-specific stream conditions and are difficult to implement on individual stream segments. The need to reevaluate periodically the water quality standards to assure the incorporation of new data that may warrant changes in the standards is important to the integrity of state regulatory programs. Section 6 would hinder states' ability to modify water body classifications when new data become available.

Since passage of the 1972 amendments, the states have been gradually improving their capabilities and are now in a much better position to review and revise standards in a technically sound fashion. The water quality data

base that now drives state water quality assessments has had the benefit of ten years of further development. By restricting states' flexibility to address local conditions, dischargers will be faced with advanced treatment requirements that are costly and dubious as to their potential environmental benefits.

The Chamber believes that Section 6 reflects a response to EPA's proposed revisions to the water quality standards regulations which is no longer appropriate, given the content of the final regulations. Important revisions have been made to the Agency's regulations reflecting more than 1400 comments received by the Agency. Among these changes are: (1) explicit language reaffirming EPA's commitment to the nation's clean water goals and the role of water quality standards as a regulatory tool; (2) clarification of the use of physical, chemical, biological and economic factors in conducting use attainability analyses, particularly the role of cost/benefit analysis; (3) emphasis on the protection of water quality, not uses; (4) improved guidance on state procedures for reviewing and revising water quality standards; and (5) revision of the anti-degradation policy to provide special protection for high quality waters and waters which constitute an outstanding natural resource.

The final water quality standards regulations demonstrate EPA's commitment to the goals and spirit of the Clean Water Act. They incorporate the kind of flexibility state regulators and planners will need to deal with economic growth and development, with concurrent protection of environmental quality. Section 6 of H.R. 3282 should be deleted because it would restrict EPA's and the states' ability to respond to future water quality conditions, and is unnecessary in light of the recently published final regulations.

Pretreatment Authority

As introduced, H.R. 3282 does not address pretreatment. It should be amended to allow publicly owned treatment works (POTWs) to demonstrate their capability to develop and implement local pretreatment programs in lieu of the federal categorical requirements.

Under existing statutory authority, Sections 307(b) and (c) authorize EPA to establish pretreatment standards to control various pollutants found in industrial effluents discharged into POTWs. These pretreatment provisions are

designed to control discharges that might contaminate sewage sludge, interfere with the disposal of sludge and/or the efficient operation of the POTW, cause the POTW to violate the terms of its NPDES permit, or cause water quality problems.

Responding to its congressional mandate, EPA has developed an elaborate and cumbersome pretreatment program involving national technology-based pretreatment standards for dischargers of toxic and non-toxic/non-conventional pollutants. Under this program, standards vary for the same toxic pollutant depending upon the industrial category to which they are applied. EPA has also developed general pretreatment requirements that are applied in conjunction with the categorical standards.

In developing the categorical standards, EPA has attempted unsuccessfully to develop a method of granting credits that reflects the consistent removal by a POTW of various substances in a discharger's effluent. Without these removal credits, industrial dischargers are often required to install expensive treatment technology to meet pretreatment limits even when the receiving POTW is capable of removing a portion of the regulated constituent. Further, the general pretreatment requirements authorize a POTW to require the separate pretreatment of some industrial wastes that could otherwise be treated with domestic wastes. These circumstances have created a complex and duplicative pretreatment program that results in great expense without commensurate environmental benefits.

The Chamber recommends that the Clean Water Act be amended to allow POTWs the opportunity to demonstrate to EPA that they now operate, or will soon be capable of operating, pretreatment programs at least as stringent as the federal categorical program. Such a demonstration would involve an evaluation of the technical, legal and financial capability of the POTW to implement an effective local program. The criteria for granting this local authority should be the same as the criteria applicable to the federal pretreatment program--the control of discharges that might contaminate sewage sludge, interfere with the disposal of the sludge and/or the efficient operation of the POTW, cause the POTW to violate its NPDES permit, or cause water quality problems.

Opponents of a "local option" pretreatment provision contend that EPA's resources would be severely strained if the Agency had to evaluate several hundred applications to "opt out" of the federal pretreatment program. This

argument ignores the fact that EPA now must evaluate the adequacy of plans submitted by approximately 1700 municipalities that are presently required to establish pretreatment programs. It also ignores EPA's lack of success in developing a workable federal program.

The current program is an inefficient use of public resources generally, and industry's resources specifically. Tailoring pretreatment progams to meet the needs of local POTWs will eliminate costly administrative and technical requirements that are not necessary for the protection of water quality, public health or the proper operation of the facility. If the objectives of the Act are to enhance water quality and protect public health, where feasible, locally established programs are a sensible and effective alternative to the current federal system.

The Chamber recognizes that many POTWs, particularly the smaller ones, will not have the capability to develop and manage local programs. To this extent, we encourage continued efforts to develop a workable and effective federal pretreatment program. However, qualified POTWs should have the opportunity to implement local programs that are at least as stringent as EPA's.

Such a targeted approach, in lieu of federal standards, would strengthen the pretreatment program. By targeting the program to local conditions, site-specific water quality problems are likely to be addressed more adequately than under a national program that may or may not be relevant to the protection of water quality in the specified area. However, while we firmly believe that localities should have the option of managing pretreatment programs, EPA should continue its present role of supervising enforcement and providing technical assistance where local programs are established.

In addition, Congress should encourage EPA to resolve problems associated with the removal credit regulations. EPA should promulgate national removal credits applicable to all pollutants subject to federal standards so that redundant treatment will be avoided. It should also develop a workable mechanism for the establishment of POTW-specific removal credits where a POTW can show that its removals are higher than the national credits or those credits otherwise do not apply. We believe that such efforts will enhance the efficiency and effectiveness of the national program.

Finally, many industrial facilities with integrated processes are subject to more than one categorical pretreatment standard. These facilities face increased regulatory uncertainty because their pretreatment requirements change each time EPA promulgates new or revised categorical standards applicable to any one of the processes. This uncertainty makes the planning and design of adequate pretreatment systems difficult and unnecessarily expensive. To facilitate the orderly design and construction of pretreatment systems for integrated facilities, we recommend that three years be allowed for compliance from the time the last standard applicable to the facility is promulgated.

Post-BAT Permit Requirements

Section 7 requires the Administrator to identify waters within each state that, in the Administrator's opinion, are not expected to meet water quality standards due to point source discharges of toxic pollutants. Within one year after publishing the list of such waters, the Administrator is required to propose regulations setting forth an individual control strategy for each noncomplying water body. After promulgation, each strategy must be implemented by modifying discharge permits issued to direct dischargers under Section 402 of the Act.

Section 7 is both unnecessary and inappropriate at this time. While we support reasonable efforts to control toxic water pollution, particularly in those water bodies experiencing special problems, we cannot support a provision that presumptively concludes that these problems should and will be resolved through more stringent regulation of point source dischargers. Section 302(a) provides adequate authority for the management of water quality problems that are not being resolved through the Act's technology requirements, and therefore the proposal contained in Section 7 is not needed.

The Chamber also believes that Section 7 is premature. EPA is only now promulgating BAT effluent limitations guidelines for major segments of American industry. According to the Agency's most recent schedule for guidelines promulgation, final BAT effluent limitations guidelines are not likely before mid-1984 at the earliest. Once the guidelines are promulgated, it will be approximately three years before permit limits are established and technology requirements are designed, installed and operational.

Progress toward improving water quality is possible through the application of BAT requirements and other provisions of current law, such as Sections 208 and 302. These strategies should be allowed to be fully implemented before new control strategies are created. Only after the full implementation of existing statutory requirements will it be possible to determine what additional controls on point sources beyond BAT, if any, are needed to meet water quality standards.

It would be bad public policy to mandate that point sources, already facing significant regulation under the Act, face additional regulation through new requirements when existing provisions have yet to be fully implemented and tested for their adequacy to control localized toxic pollution problems.

Section 7 would also negate implementing authority historically delegated to states under the Act to set water quality standards and issue NPDES permits. This would be the effect, if not the intent, of allowing the EPA Administrator to identify areas that may not meet water quality standards due to toxic discharges, and to establish control strategies in NPDES permits for those water bodies. This provision would fundamentally alter the way in which water quality standards are established and NPDES permits are issued under the Act. States are in a much better position than the federal government to determine the limitations required to achieve designated water quality, based on local needs and conditions.

For these reasons, we urge you to delete Section 7 of H.R. 3282 and encourage EPA to move forward expeditiously with BAT effluent limitations guidelines. We recommend, as an alternative, that EPA seek appropriate means of building on and implementing Section 208 and other existing statutory provisions as additional means of controlling toxics pollution.

BCT/BAT Compliance Deadlines

The Chamber agrees that an extension of the best conventional technology (BCT) and best available technology (BAT) compliance deadlines is needed to allow sufficient time for many industries to comply with applicable effluent limitations.

When the current deadlines in the Act were established, Congress assumed that EPA would be able to issue effluent guidelines in a timely manner. Industry would then have needed approximately three years to obtain

NPDES permits and install treatment systems to achieve compliance. In view of the fact that EPA will not finish promulgating many of the effluent guidelines until mid- or late-1984, we consider the current deadlines to be unrealistic.

The deadline extension for BAT compliance, as proposed in Sections 4(a) and (c) of H.R. 3282, recognizes that EPA may not be able to adhere strictly to the recent court ordered promulgation schedule. Historically, promulgation schedules slip. Unanticipated and legitimate delays in promulgating guidelines have often resulted in significant uncertainty within industry as to what requirements apply, and how and when compliance must be achieved. For large manufacturing facilities subject to more than one guideline, the uncertainty is even greater. Tying compliance deadlines to a specified time following guidelines promulgation makes sense and adds predictability and stability to the regulatory program.

In lieu of the specified 1987 deadline for BCT compliance, we recommend that Section 4(b) be amended to tie compliance to the date of promulgation of the appropriate effluent guideline. Such an amendment would make the BCT compliance requirements consistent with those for BAT, and again, decreased uncertainty.

Eliminating the 1987 BCT compliance deadline is necessary because EPA has yet to finalize its BCT methodology. The proposed methodology for determining BCT requirements was recently withdrawn (48 F.R. 44091, September 27, 1983), and has consequently delayed the development of defensible effluent guidelines.

NPDES Permit Term

One issue not addressed by H.R. 3282 is the term of current NPDES permits. The Act currently specifies that permits issued under the Act shall not exceed five years. Experience has shown that industrial dischargers generally require two to three years to install the treatment technology necessary to meet permit limitations. The length and complexity of the permit process, the short life of the permit term, and the time needed to comply with permit conditions has resulted in industrial dischargers constantly finding themselves in the process of either preparing applications or negotiating permit conditions. Therefore, the Chamber recommends that Section 402(b)(1)(B) of the Clean Water Act be revised to extend the permit life from

five to ten years, with continuing EPA authority to terminate or modify the terms of any permit for violations of permit conditions, misrepresentations, or conditions that warrant a reopening of the permit.

By extending the permit term for most dischargers, the permit holder would be provided greater certainty, which would be an incentive for further investment in pollution controls. Additionally, state and federal agencies with responsibility for issuing discharge permits would have a reduced permitting work load and, consequently, more time to ensure the achievement and maintenance of permit conditions.

Federal Common Law

H.R. 3282 does not now contain a provision addressing federal common law. We believe that this is as it should be. Any attempt to amend the Clean Water Act to allow a federal common law remedy for suits against dischargers for abatement and damages would be ill-advised. The Chamber opposes the establishment of this type of legal remedy on a number of grounds.

To establish a federal common law provision in the Act could result in abatement orders and awards for damages against dischargers that are in full compliance with all applicable Clean Water Act requirements. This would create unlimited liability for the regulated community, make the NPDES permit program meaningless, and subject those regulated under the Act to unknown and technically unjustifiable judicial standards.

The Clean Water Act is comprehensive federal legislation through which extensive permit and effluent limitations regulations have been successfully implemented. Federal water pollution control authority should be provided through acts of Congress, and administered by federal agencies or delegated states, not determined on a case-by-case basis in the federal courts.

Allowing courts to fashion additional requirements under the guise of federal common law would result in an unacceptable degree of uncertainty as to the federal standards of conduct and remedies, as the U.S. Supreme Court held in Milwaukee v. Illinois, 451 U.S. 304 (1981). This decision is grounded in fundamental principles of federalism, as well as sound practical considerations, and should not be overturned. A permittee who is in compliance with Clean Water Act requirements should not be subject to injunctive relief or penalties for a permitted discharge on grounds of federal common law of nuisance.

Nonpoint Source Pollution Control

Another issue before the subcommittee is nonpoint source pollution control, as contained in H.R. 4037.

Nonpoint source pollution control is an issue that is of great concern to our members. In an effort to provide Congress with our members' views on this issue, we are now developing a position on H.R. 4037. We expect to complete this process soon and would appreciate the opportunity to comment on the bill at that time.

Conclusion

The Chamber reaffirms its support for the important goals of the Clean Water Act and believes that existing law can provide the basis for additional water quality improvements in the years ahead. At the same time, we recognize that a number of clean water programs need modification or further development to assure achievement of the Act's goals.

With strong public support and commitment to enhancing the quality of the nation's waters, there is no question that progress toward improving water quality will continue. Experience to date with the Clean Water Act is ample evidence of the nation's commitment and the successes made. In light of this experience, it is important to bear in mind that continued efforts to control sources of water pollution must be technically sound, economically achievable and designed to result in clear environmental benefits.

Federal water pollution control programs should be tailored to the needs of local communities and decision-makers whenever possible, and sufficiently flexible to address future environmental concerns. Continued progress in achieving the Clean Water Act's goals will be significantly enhanced through adherence to these principles.

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August 5, 1983

The Honorable Robert A. Roe
Chairman
Subcommittee on Water Resources
House Committee on Public Works
and Transportation
2165 Rayburn Building
Washington, D.C. 20515

Dear Chairman Roe:

Enclosed are three copies of the statement of Mr. Fred J. Gentile, Vice President and Comptroller of The Brooklyn Union Gas Company, for inclusion in the record of the August 2-4 hearings concerning reauthorization of the Clean Water Act.

Mr. Gentile previously submitted testimony to the Subcommittee on August 12, 1981. The enclosed statement revises and updates that testimony to show the increased impact of the Red Hook and Oakwood Beach Water Pollution Control Projects on Brooklyn Union's customers. The revised figures demonstrate that because of these two projects Brooklyn Union will incur in excess of $9.0 million in utility relocation costs. These costs will be borne by Brooklyn Union's customers unless the present federal law is changed to correct the situation. Mr. Gentile recommends that the Committee amend the Clean Water Act to ensure that utility relocation costs caused by the Red Hook and Oakwood Beach projects be reimbursed under the Act in the same proportion as the federal share of any other costs on such projects.

Sincerely,

Dana Contratto

Dana Contratto
Attorney for The
Brooklyn Union Gas Company

Enclosures

cc: Mr. Errol L. Tyler
(w/enclosures)

The Brooklyn Union Gas Company
195 MONTAGUE STREET
BROOKLYN, NEW YORK 11201

STATEMENT OF

FRED J. GENTILE,

VICE PRESIDENT AND COMPTROLLER

of

THE BROOKLYN UNION GAS COMPANY

before the

WATER RESOURCES SUBCOMMITTEE

of the

HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

on the

ALLOWABILITY OF UTILITY RELOCATION COSTS

UNDER THE CLEAN WATER ACT

CONSTRUCTION GRANTS PROGRAM

August 5, 1983

The purpose of this statement is to bring to this Committee's attention an issue of vital importance to gas utility customers nationwide and, in particular, to the customers of the Brooklyn Union Gas Company. The issue is the continued inequitable and unjust treatment of utility relocation expenses by the federal government.

Each year, water and sewer construction projects financed by the federal government under the Clean Water Act make necessary the relocation of gas facilities owned by public utility companies such as Brooklyn Union. Relocation and replacement of gas lines located in city streets is every bit as much a part of a treatment or sewer construction project as is the cost of labor and materials directly employed in Clean Water Act construction work. Like labor or materials expenses, utility relocation expenses would not be incurred but for these Clean Water Act projects. But in contrast with other construction expenses, the federal government does not bear its fair share of the cost of utility relocation. Instead, in most cases, and in the case of those projects that affect the Brooklyn Union Gas Company, the federal government bears none of the utility relocation expense. Thus, despite the fact that such expenses are incurred by virtue of federal programs intended to further federal interests, the cost of utility relocation is borne exclusively by local gas utility customers. This state of affairs is inappropriate and inequitable.

A. The Magnitude Of Utility Relocation Costs Caused By EPA-Assisted Projects: Brooklyn Union

Under the Clean Water Act, EPA is presently funding two water pollution control projects that affect Brooklyn Union's service area. These are the Red Hook and Oakwood Beach Water Pollution Control Projects. As the attached tables demonstrate, these projects will require substantial relocation of utility lines and considerable expense to Brooklyn Union. For example, on the Red Hook Water Pollution Control Project, Brooklyn Union will spend approximately $9.05 relocating its pipes and facilities for every $100.00 in government expenditures on this project. Given the $19.9 million which expectably will be spent on this project over the next three years, Brooklyn Union will be forced to assume the cost of an estimated 1.8 million dollars for work unrelated to providing gas utility service to its customers. Even more significant is the cost to Brooklyn Union over the next five years as a result of the EPA-assisted Oakwood Beach Water Pollution Control Project in Staten Island. That project will cost Brooklyn Union an estimated $7.25 million, based upon estimated project costs of $130.9 million ($5.54 of utility relocation expenses for every $100 spent on the project).

The important point to be gained from these figures is that the utility relocation costs that concern Brooklyn Union are significant. Brooklyn Union will incur in excess of $9.0 million in utility relocation costs over the next few years solely because of these two EPA-assisted projects in its service area. That $9.0 million, as explained in the next section, will be borne by Brooklyn Union's customers unless the present law is changed to correct the situation.

B. Current Law: Passing The Utility Relocation Burden of EPA-Assisted Projects From The Federal Government To Local Gas Utility Customers

Under the Clean Water Act, as administered by the EPA's Office of Water and Waste Management, a construction grant program provides federal funding for the construction of municipal treatment works which are required to meet state and federal water quality standards. Under the program, EPA assumes 75 percent of allowable costs of approved construction projects.

The Office of Management and Budget's Circular, A-87 (January 15, 1981), is intended to establish uniform principles and standards for determining allowable costs under grants and contracts with state and local governments. Subsection C of Attachment A of OMB Circular A-87 sets forth the guideline that allowable costs must "be authorized or not prohibited under State or local laws or regulations." */ The practical effect of this guideline, as interpreted by EPA, has been to allow the federal government to avoid -- through the operation of local property laws -- compensating utilities for relocation expenses incurred as a result of the EPA-assisted construction projects.

The source of the federal government's ability to escape payment for the cost of utility relocation is that under the law of many states, public utilities are required to relocate their facilities to make way for state construction without reimbursement of the costs incurred. The legal theory by which many states, including New York, deny utilities direct

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*/ EPA has codified its interpretation of this criterion at section 35.940-1(k) of Title 40 of the Code of Federal Regulations, which states that allowable costs include "Removal and relocation or replacement of utilities, for which the grantee is legally obligated to pay."

compensation for their relocation expenses is that because utilities possess only a "privilege" or "franchise" to locate service lines in the public streets, they operate at the sufferance of the state and do not have the "right" to operate in any particular place. Under this peculiar theory, it is frequently held that the state may require the utility to move its facilities without paying any compensation. */ As EPA has administered the Clean Water Act, since the state may avoid paying its share of the cost of utility relocation, the federal government allows the full cost of relocation to fall on the utility and its customers.

This practice, by which the federal government fails to pay its fair share, or, for that matter, any share of the cost of a federally-induced project, must be changed.

C. The Current Policy Regarding Utility Relocation Costs Is Misguided, Inappropriate, And Inequitable To The Local Gas Utility Customers Who Must Pay More Than Their Fair Share Of Federally-Assisted Projects

There are compelling reasons why the government's current policy toward utility relocation expenses should be reversed:

1. As a result of this practice, gas utility customers are forced to pay more than their fair share of Clean Water Act construction. The Clean Water Act programs which finance construction projects requiring relocation of gas utility facilities are conceived and designed to benefit the general welfare: "The objective of this [Act] is to restore and maintain the . . . integrity of the Nation's waters." 33 U.S.C. § 1251(a). No special benefit is conferred upon gas utility customers by these projects. Gas utility customers, however, pay twice for these construction projects -- once in the form of federal taxes, and again in the form of increased utility rates. This inequitable burden should be relieved, and the full cost of construction should be spread equally among all taxpayers.

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*/ One of the peculiarities of this theory is that if the relocation was necessitated by a project conducted directly by the federal government, just compensation would have to be paid. Thus, it is only by funneling the federal money for these projects through the states that the federal government takes advantage of the quirks in local property law and avoids its obligation to pay compensation.

Similarly, the costs of Clean Water Act projects do not fall on those who reap the benefits of the program. Projects such as those at Red Hook and Oakwood Beach directly benefit all citizens in the Hudson valley and at least arguably the entire northeast United States. To require a select group of individuals -- Brooklyn Union Gas Company customers -- located in a distinct geographic sector -- Brooklyn, Queens and Staten Island -- to pay more than a pro rata share of the project costs clearly places an inequitable and unjust burden on those individuals.

2. The current policy results in discriminatory treatment between gas customers in different states. The present practice of predicating the compensability of utility relocation expenses upon the intricacies of state property laws has created a situation in which some states' utilities are reimbursed from federal funds, while the relocation expense on comparable projects in other states goes uncompensated. The burden of federally-financed construction should not be borne disproportionately by the gas consumers of one state, while similarly situated gas consumers in another are relieved of this burden.

3. The failure to recognize the full cost of public construction leads to economic waste. Public utilities are given no voice in planning federally-financed projects in a manner which might reduce these burdensome costs. The federal government does not intervene to assure that relocation is approached economically and efficiently, as would be the case where federal funds were at stake. And, because the expense of utility relocation is not paid by the state or municipality, local project administrators tend to be less concerned about the manner in which those expenses might be reduced.

4. The Clean Water Act policy of disallowing utility relocation costs disrupts the national energy policy. The full cost of relocation, while initially borne as an out-of-pocket expense by the utility, is ultimately paid for by the consumer in the form of higher gas prices. This increment to the price of gas artificially stimulates demand for alternative sources of energy when gas, in reality, may be the most cost-effective form of energy available. As presently administered, the system extracts an extra charge from gas consumers, and confers an economic boon to fuel oil consumers who may well be in the very same geographical class of alleged "beneficiaries" of the Clean Water Act project.

5. The historical quirk which allows some states to avoid payment of utility relocation expenses, upholds no public policy and has no rational application to utility relocation necessitated by federal projects. As an historical matter,

most utilities, including Brooklyn Union, were invited by the states onto the public way in order that the states might assure their citizenry adequate and efficient utility service. If the utilities -- particularly those asked to operate in metropolitan areas -- had been required to purchase private rights-of-way to lay their lines, the costs would have been prohibitive. The franchise was offered to the utilities as a means of ensuring affordable utility service. Here, anomalously, the federal government is exploiting the nature of the franchise to increase the cost to the consumer of utility services.

Even if it could, in some sense, be said that the utilities, by not procuring private rights-of-way, had entered into the business of providing utility service with the understanding that they would be required to relocate without reimbursement, that "understanding" did not contemplate relocation on the scale now required. The outpouring of federal grant money has induced states and municipalities to undertake enormous projects serving federal policies and meeting federal requirements. Neither the utilities, nor the municipalities or states, who at the time of granting franchises desired to keep the cost of utility services low and the cost of entry into the field relatively small, could have realized the enormity of the yearly relocation expense which federal involvement in public works now causes.

In any event, the immediate question is who should now equitably bear the very real cost of utility relocation -- the natural gas consumer, paying both federal taxes and higher utility rates, or the general public through funds which Congress has set aside to finance these projects.

D. CONCLUSION AND RECOMMENDATION

There is no doubt that Brooklyn Union Gas Company customers are presently shouldering a disproportionate share of the costs of the EPA-assisted Red Hook and Oakwood Beach Water Pollution Control Projects by being asked to pay for the cost of relocating utility facilities in order to accommodate construction on those projects. It is an inequitable situation that can, and should, be changed. I recommend that the Committee consider this issue seriously and that it amend the Clean Water Act to ensure that the utility relocation costs caused by the Red Hook and Oakwood Beach projects are considered allowable and reimbursed under the Act in the same proportion as the federal share of any other water pollution control project cost.

TABLE - I

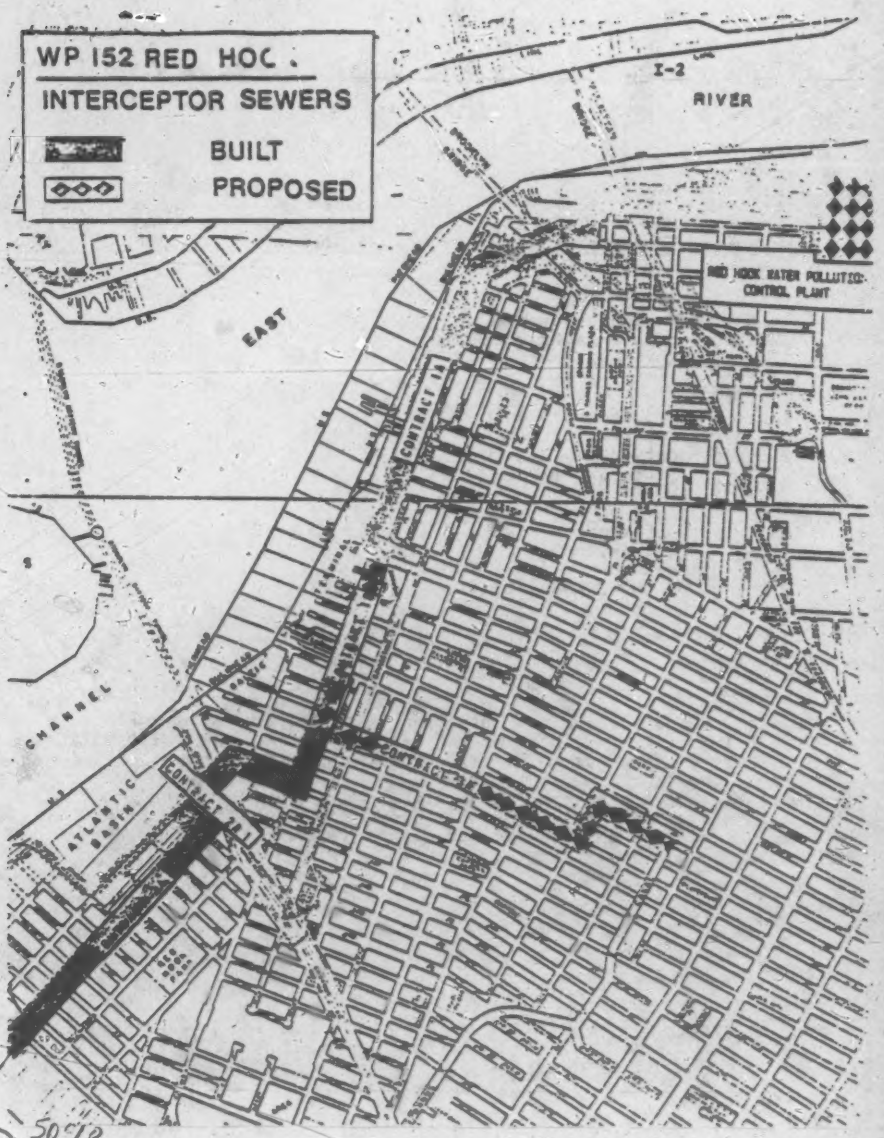
WP - 152 - RED HOOK WATER POLLUTION CONTROL PROJECT

Borough of Brooklyn

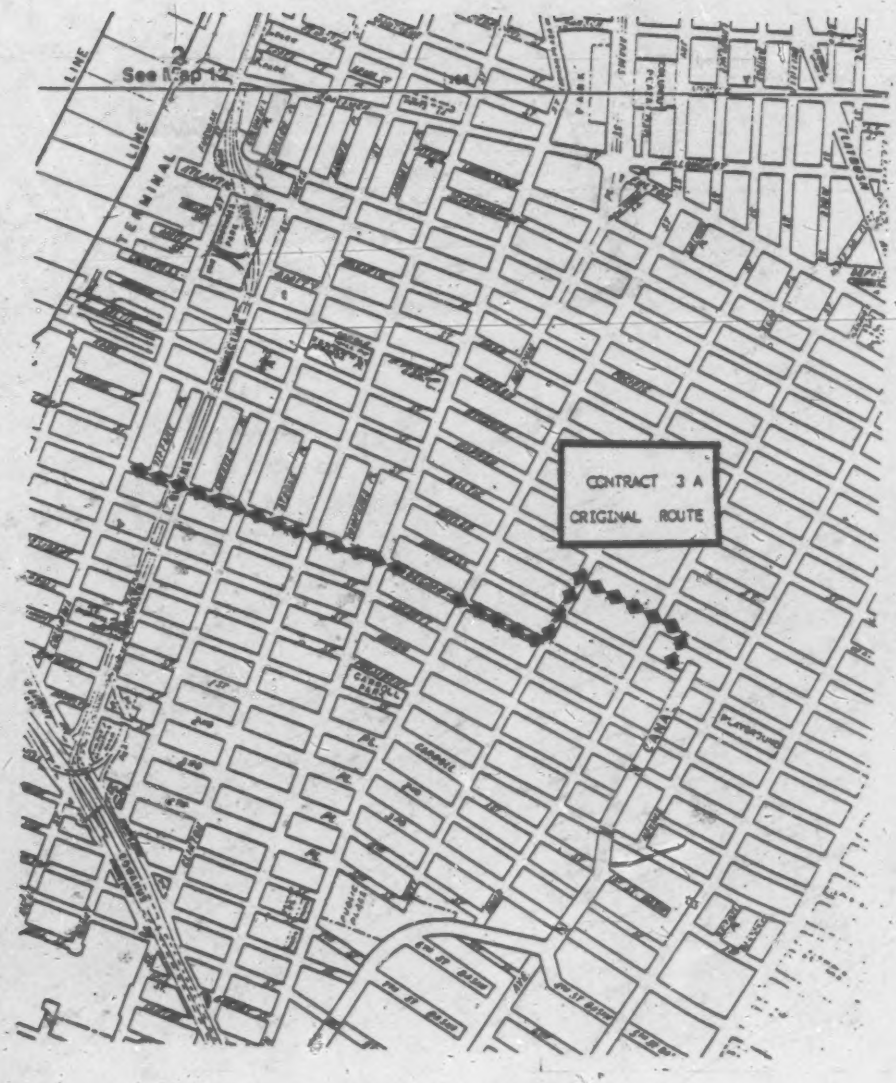
Contract #	Description of Proposed Project	Estimated New York City Cost ($ Millions)	Estimated Impact On Brooklyn Union Gas* ($ Millions)	Anticipated Construction Date
1B1	Interceptor sewer in Columbia Street between Atlantic Avenue & Kane Street.	6.7	.600	1983
1B2	Interceptor sewer in Columbia Street between Kane Street & Degraw Street.	4.5	.400	1986
3A**	Interceptor sewer in Degraw Street between Columbia Street & the Gowanus Canal.	8.7	.800	1985
		19.9	1.8	

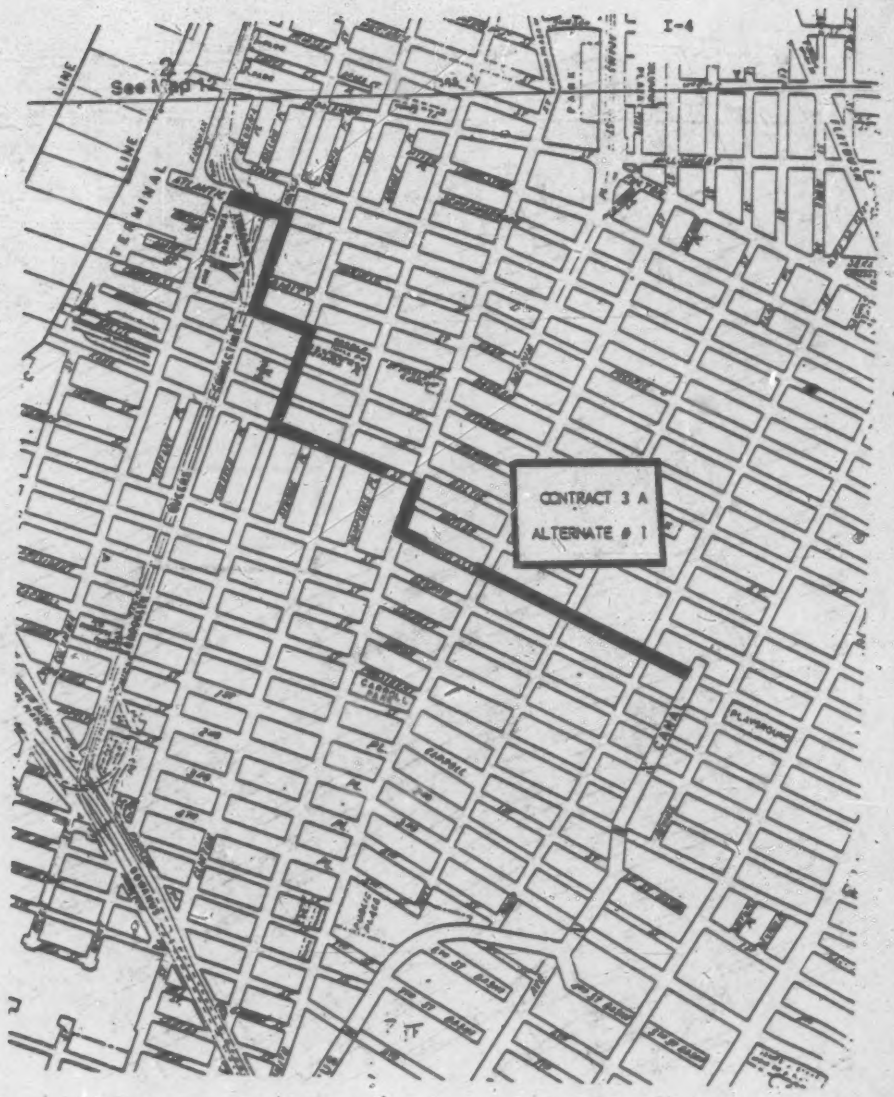
*Historical data shows that Brooklyn Union Gas spends approximately $9.16 for utility relocation and maintenance for every $100.00 that New York City spends on sewer construction in Brooklyn.

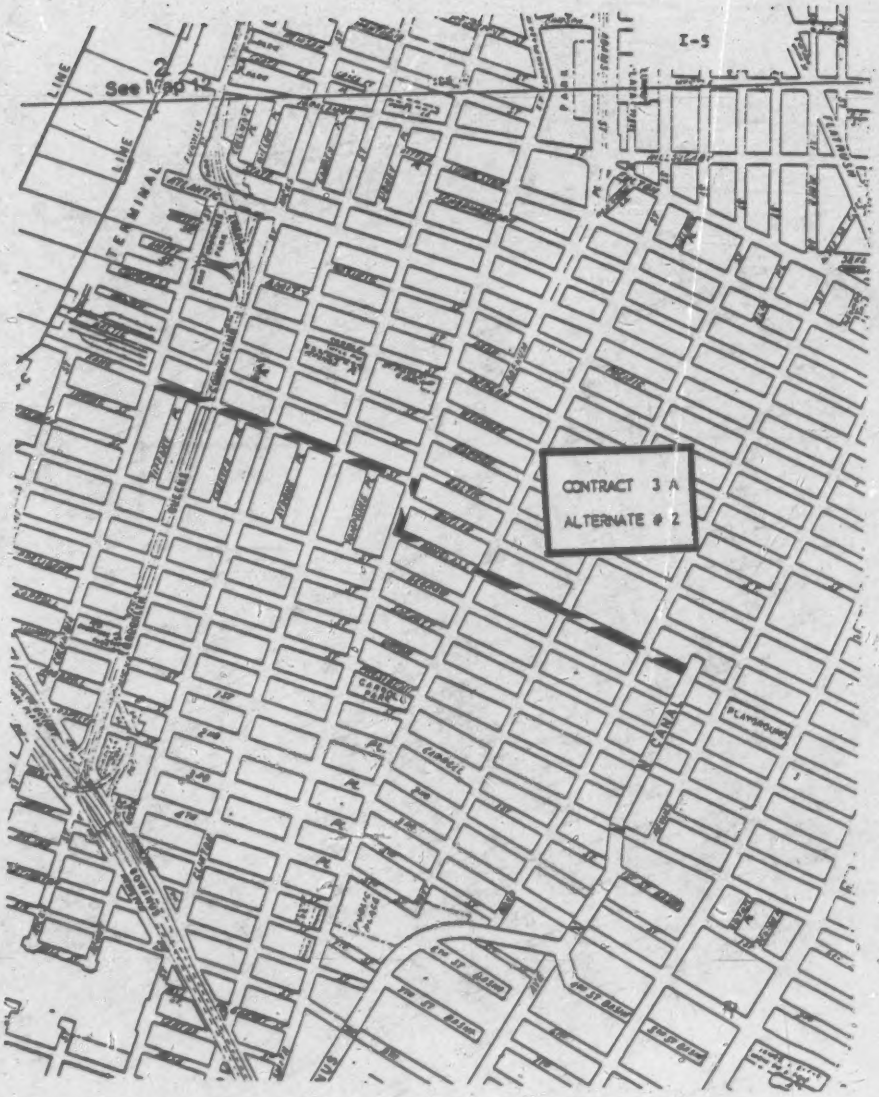
**This project has several alternative schemes (see attached maps); it is anticipated that the dollar impact to Brooklyn Union Gas will remain the same regardless of which design is used.


WP 152 RED HOC .
INTERCEPTOR SEWERS
BUILT
PROPOSED
I-2
RIVER
EAST
CHANNEL
ATLANTIC BASIN
CONTRACT 13
CONTRACT 11
CONTRACT 20
CONTRACT 21
RED HOOK WATER POLLUTION CONTROL PLANT

I-3


See Map 12
LINE
LINE
TERMINAL
CONTRACT 3 A
ORIGINAL ROUTE
CANAL
PARK


See Map 2
LINE
LINE
TERMINAL
CONTRACT 3 A
ALTERNATE # 1
CANAL
PLAYGROUND
I-4


See Map 12
LINE
LINE
TERMINAL
I-5
CONTRACT 3 A
ALTERNATE # 2
CANAL
PLAYGROUND
CARROLL
BOSTON

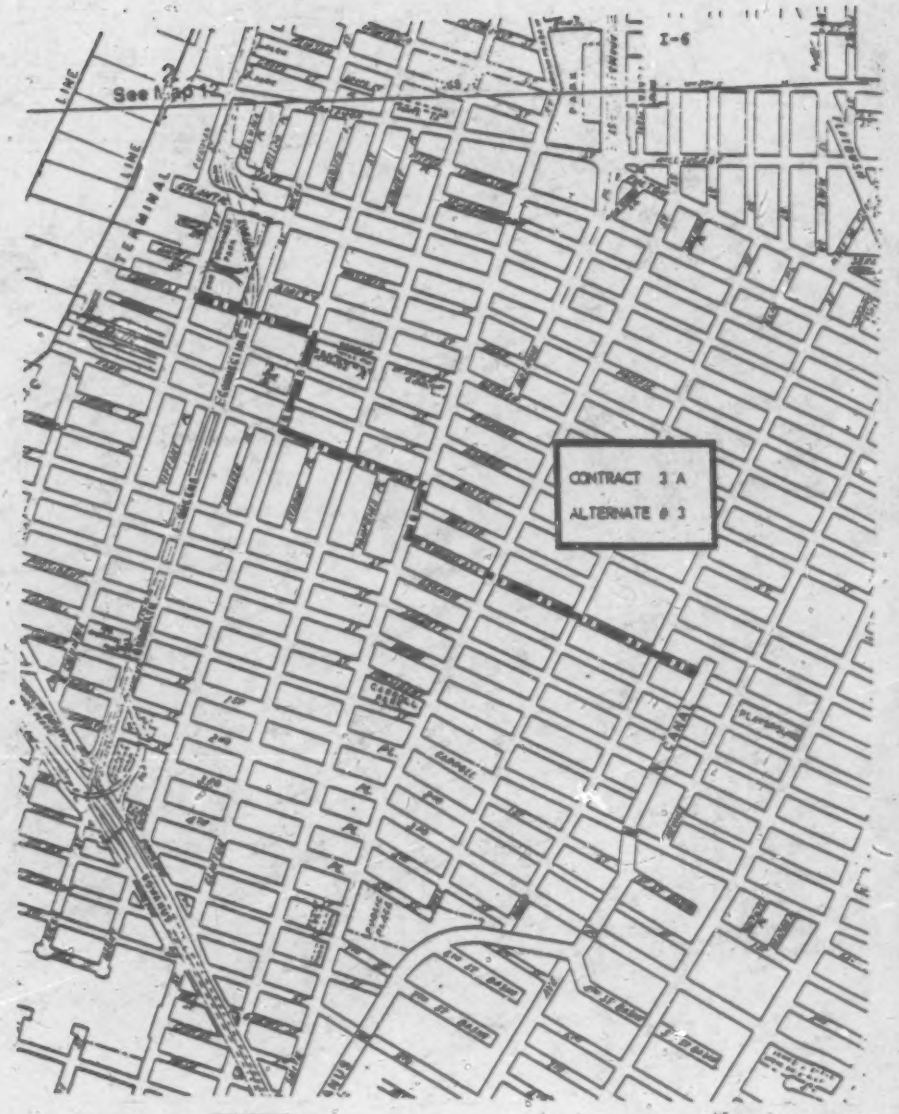

See Map 2
I-6
CONTRACT 3 A
ALTERNATE # 3
TERMINAL
LINE
LINE
CARROLL
CANAL
PLYMPTON
BLUE

TABLE - II

II-2

WP - 136 - OAKWOOD WATER POLLUTION CONTROL PROJECT

Borough of Staten Island

Contract #	Description of Proposed Project	Estimated New York City Cost ($ Millions)	Estimated Impact On Brooklyn Union Gas* ($ Millions)	Anticipated Construction Date
FK 32	Force Main in Richmond Hill Road between Abingdon Avenue & Clark Avenue.	15.0	.800	1983
6 A	Interceptor sewer in Hylah Blvd. between Holtan Avenue & Richard Avenue.	13.5	.750	1985
6B1	Interceptor sewer in Tennyson Drive	2.3	.100	In Progress
EL 14A	Force Mains in Colon Avenue between Barlow Avenue & Abingdon Avenue.	4.5	.250	In Progress
32	Interceptor sewer in Richmondtown Rd.	11.3	.600	1983
14B	Force Mains in Eltingville Area.	2.5	.200	1984
FK 29	Force Mains in Arthur Kill Road between Warshaw Avenue & Shamrock Avenue.	5.5	.300	1984
T7	Force Mains in Wolf's Pond and Tottenville Area.	11.0	.600	1985
6A	Interceptor Sewer in Wolf's Pond Area.	13.5	.750	1985
T 12	Interceptor sewer in Arthur Kill Road between Amboy Road and Kreicher Street.	21.5	1.200	1985
T 13	Interceptor sewer in Hylan Blvd. between Richard Avenue & Amboy Road.	8.0	.500	1985
T 11	Force Mains in Wolf's Pond Area	2.3	.100	1985
6 B	Interceptor sewer in Wolf's Pond Area on Wiman Ave.	20.0	1.100	1985
		130.9	7.25	

*Historical data shows that Brooklyn Union Gas spends approximately $5.50 for utility relocation and maintenance for every $100.00 that New York City spends on sewer construction in Staten Island.

20-955 O—84——220

II-3

WP 136 OAKWOOD BEACH
INTERCEPTOR SEWERS
BUILT
PROPOSED
CONTRACT FK 19
CONTRACT FK 25
CONTRACT FK 24
CONTRACT 6B
CONTRACT T 0
OAKWOOD BEACH WATER
POLLUTION CONTROL PL
RARITAN BAY

Western Regional Council

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February 8, 1983

The Honorable Robert A. Roe, Chairman
Subcommittee on Water Resources
House Committee on Public Works and
Transportation
2165 Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Roe:

The Western Regional Council is composed of approximately fifty chief executive officers of companies located in the Intermountain West. Each year, the WRC selects five to seven issues which significantly impact the Intermountain West as a region. One of the issues on which the WRC has been concentrating its efforts during the last year has been revision of the Clean Water Act.

It has come to the attention of the WRC that you have announced hearings on February 23 and 24 at which will be discussed the Environmental Protection Agency's proposed regulations on water quality standards. Since the WRC's comments do not directly address EPA's proposed regulations, the WRC is not requesting to testify. However, the WRC continues to seek revisions to the Clean Water Act provisions dealing with water quality standards. Representatives of the WRC have spoken to your staff director Errol Tyler about this matter a number of times.

Therefore, the WRC would like to submit, as part of the formal record, its proposed revisions to the water quality standards. Your Subcommittee's consideration of the Council's views would be appreciated.

Thank you for your time and consideration.

Sincerely,

David Delcour

David Delcour, Chairman
Clean Water ad hoc Committee

vs

Enclosure

P.O. Box 8144, Salt Lake City, Utah 84108 · Telephone (801) 363-7997

THE EFFECT OF WATER QUALITY STANDARDS ON WESTERN WATER

When Congress adopted the Federal Water Pollution Control Act Amendments in 1972, attention in both government and industry was focused on implementation of the NPDES permit program and the development of technology-based effluent limitation guidelines (i.e., BPT and BAT). The permit program is now in place and effluent guidelines have been adopted for most major industries. With these jobs out of the way, significant governmental effort is being directed back toward the Act's original, pre-1972 concern -- the development and protection of ambient water quality standards.

Section 303(c) of the Clean Water Act requires states to establish "water quality standards" for all "navigable waters" within their borders. These "standards" must consist of two things:

(i) designated beneficial uses for the waters; and

(ii) water quality criteria for those uses.

Once adopted, these standards must be submitted to EPA for approval. EPA must grant approval if the standards meet "the requirements" of the Act. If EPA "disapproves" any standard submitted to it, the concerned state must be given a reasonable amount of time to develop a substitute standard which then becomes federally enforceable.

The standards have a direct regulatory impact because of the role they play in the NPDES permit program. Section 301(a) of the Clean Water Act prohibits all discharges of pollutants to "navigable waters" except as authorized by an NPDES permit. In turn, Section 402(a) of the Act requires these permits to "meet" certain minimum requirements. The most prominent of these, as discussed above, is the requirement that discharges reflect minimum levels of treatment technology, i.e., BPT and BAT. However, Section 301(b)(1)(C) of the Act also provides that:

> ...there shall be achieved..
>
> ***
>
> not later than July 1, 1977, any more stringent (effluent) limitation... required to implement any applicable water quality standard established pursuant to this Act...

In other words, dischargers must meet effluent limitations more stringent than BPT and BAT -- the technology-based standards -- if necessary to protect receiving water quality.

Impact on the West: Water quality standards are generally more stringent than technology-based effluent limitation guidelines, i.e. BPT and BAT. In wetter regions of the country, this disparity has little or no practical regulatory effect -- dilution flows generally enable technology-limited discharges to protect receiving water quality. Unfortunately, in perhaps the majority of cases in the arid west, industrial dischargers are asked to install treatment systems that are "better" than what EPA has defined as being "best". At a minimum, this creates confusion and uncertainty, and unreasonably increases the cost of compliance. At worst, it can lead to shutdowns, and prevent industries from locating or expanding their operations in desirable areas.

This breakdown in the regulatory process is the result of several practical problems in the way EPA and the states have implemented the standard-setting process:

i) In the course of preparing their proposals, standard-setting agencies totally ignore economic and technical limitations. Thus, their proposals fail to reflect any sort of meaningful planning.

ii) Due to the absence of any advance correlation between water quality standards and effluent limitations, industries are unable to predict the economic consequences of the agencies' proposals. Even if agencies consider economics in the standard setting process, the standard still would not adequately reflect practical economic concerns.

iii) Furthermore, if meaningful economic information could be presented at standard-setting hearings, EPA limitations on the ability to elect against "fishable, swimmable" waters would render most data irrelevant.

In order to remedy this, industries and the States need to be allowed to consider economic issues to the permitting process without EPA disapproving such permits strictly on the basis of the "zero discharge", "fishable, swimmable" goals of the Act. For a more indepth discussion of the problem the reader is referred to the example in Appendix B.

Recommendations: The solutions to the problems just discussed are very complex. Ideally, the existing standard-setting process should be modified to require a comprehensive, basin-wide water quality assessment, an assessment of the impact

of proposals on dischargers, and a comparison of these impacts with regional planning goals. And, in fact, Sections 208, 303(e) and 304(a) of the Act suggest that such a modification would be consistent with the existing statutory scheme. However, as a practical matter, comprehensive hearings such as this are never held for the issues are too complex. Instead, each of the elements is addressed on a piecemeal basis.

In view of this situation, the most practical solution is probably to amend Section 302.

Section 302(a) of the Clean Water Act grants EPA the power to impose effluent limitations more stringent than those required under Section 301(b)(2) (i.e., BAT, BCT, and toxic pollutant effluent standards), if such limitations are necessary to protect public water supplies, agricultural uses, recreation, wildlife, fish, or shellfish. However, before taking such action, EPA must review the social and economic impact of the more stringent limitations. They cannot be imposed if there is "no reasonable relationship between the economic and social costs and benefits to be obtained. . . ."

A new subsection should be added to Section 302 requiring a similar review for all water quality based effluent limitations, whether imposed by EPA under Section 302 or by a state under Section 301(b)(1)(C). In effect, this would allow dischargers to consider economic issues in permit proceedings, and eliminate the "Catch-22" that prevents any detailed consideration of economic and technical issues until the discharger has worked through a compliance schedule.

The WRC also recommends that the statute be amended to ease EPA's restrictions on the state's ability to decide that "fishable, swimmable" waters are not desirable. In fact, as a matter of administrative policy, EPA is in the process of doing this. However, a statutory clarification would still be desirable for it would reinforce what EPA is now doing and it would prevent future administrations from reversing the policy.

The statute should be amended in two ways to accomplish this:

i) Amend Section 101(a)(2) to provide that the "fishable, swimmable" goal is only desirable if it can be attained in an economically reasonable manner.

ii) Amend Section 303(c) to modify EPA's role in the review and approval of state water quality standards. Provide that EPA may only disapprove of a standard if it is totally unsupported by the record, and will have a substantial adverse effect on interstate water quality.

APPENDIX B

Example of the Effect of
Water Quality Standards on Western Water

As a practical matter the standard setting process has broken down -- at least in the arid west -- because of the great frequency with which industries have been asked to install treatment systems that are "better" than what EPA has defined as being "best." At a minimum, this creates confusion and uncertainty and unreasonably increases the cost of compliance. At worst, it can lead to shut downs and prevent industries from locating or expanding their operations in desirable areas.

This breakdown is the result of several practical problems in the way EPA and the states have implemented the standard-setting process. As a result of these problems, standard-setting agencies in the arid west tend to set ambitious goals that, more often than not, cannot be met through a reasonable level of control.

To better understand the problem, consider the following example. Suppose that State X has decided to establish water quality standards for all "navigable waters" within its borders. The first thing it will probably do is adopt "state-wide" standards, applicable to all waters of the state. This was done by most states in the early and mid-1970's. The current impact of these standards is generally minor.

Next, the state will probably adopt a system for assigning more restrictive, site-specific standards.

For use classifications, the state will create a set of categories which describe beneficial uses of water, and which correspond more or less closely with identifiable criteria. Common examples are "water supply", "agriculture", "recreation", "aquatic life", etc. The state will also create a procedure for assigning these classifications.

For criteria, the state will probably adopt a table of maximum suggested pollutant levels for each standard use category. These criteria will be based on guidelines published by EPA pursuant to Section 304(a) of the Clean Water Act. The state will also sanction the adoption of less restrictive criteria (i.e., it will permit higher in-stream pollutant levels) if the designated uses are "in place", and "existing ambient conditions" support those uses. Having adopted this system, the state will begin the process of assigning standards to specific waters. First, it will probably subdivide the state geographically according to drainage basin. Next, it will assign a schedule for conducting standard-setting proceedings.

Suppose the state has elected to commence with the Y River Basin. It will first take a map of the basin and divide the river and its tributaries into "segments", that is, areas designed to have a single set of standards. These are usually many miles long. Next, employees of the state will inspect each segment and propose classifications based on the uses they see in place, and any others that appear desirable according to local land use plans. Finally, they will propose numeric criteria to go along with the use designations. When this process has been completed for every segment in the basin, the state will propose the standards as an administrative rule.

For the purpose of this example, suppose that you are an industry located on a small tributary to the Y River. Let's assume that the tributary is about five miles long, and you are one of two industries discharging to this stretch of the stream. Upon reviewing the state's proposal you see that this segment (designated as Segment 4 of the Y River Basin) is to be classified as "Cold Water Aquatic Life -- Class I." Under the state's classifications scheme, this means that the stream should be capable of supporting a high quality cold water fishery. Upon reviewing the proposal further, you find that copper is the limiting parameter for this type of fishery. Thus, the state has proposed a numeric limit for copper of 0.005 mg/l. This is the "table number."

Upon completing your review, your first question is, "How will this proposal affect me?" After some reflection, you will probably conclude that you cannot tell. You know that the proposal might affect your ability to discharge copper, but you can't predict the likely extent of the effect. Under the best possible scenario, the proposal won't affect you at all, and your discharges of copper will be limited solely by BPT and BAT. Thus, for instance, if you are a mining company, your discharge will be able to contain 0.30 mg/l of copper as a daily maximum, and 0.15 mg/l as a 30-day average. Under the worst possible scenario, your discharge will only be able to contain 0.005 mg/l of copper -- sixty times more stringent than the daily maximum attainable with BAT.

In order to determine where in between these two extremes your discharge limit might fall, certain assumptions have to be made about available dilution flows, mixing zones, background loading from non-point sources, and allocation of the allowable daily waste load among the two point source dischargers. As a practical matter, these assumptions can only be determined after detailed negotiations with the state permit writer. However, upon calling the state, you discover that the permit writers won't be participating in this hearing -- the state's evidence will be limited to matters directly relating to ambient water

quality, not the effect of the proposed standards on dischargers. Furthermore, because of their busy schedule, the permit writers won't have time before the hearing to discuss the effect of the proposal on your discharge.

Placed in this situation, all you can do is assess the likely impact of alternate scenarios, i.e., what it might cost to meet different effluent limitations that might result from the proposal. Suppose you decide that certain scenarios will require the company to incur substantial additional expense. How do you oppose the proposal? The first thing you will probably do is conduct a review of uses on the stream -- in this case, the status of the aquatic life. You will probably find that the quality of this aquatic life is variable. For instance, a good fishery probably exists upstream of both discharges, but the diversity and population size declines noticeably in the vicinity of the first discharge. The fishery then recovers somewhat as you proceed downstream until you reach the second discharge, where very little aquatic life can be found. As you proceed further downstream to the end of the segment the fishery improves slightly, but it never attains the vigor of the upstream population.

Next, you will probably sample water quality at various points in the segment. It is likely that population levels will correlate inversely with the quality of the fishery -- i.e., copper will be low above both discharges, increase noticeably in the vicinity of the first discharge, decrease somewhat as you proceed downstream, increase significantly in the vicinity of the second discharge, and then recover slightly as you near the end of the segment.

In light of this evidence you will probably argue that the proposed standard should be rejected because it fails to accurately reflect existing conditions, at least for the segment as a whole. However, this argument is almost sure to fail, for the following reasons:

(i) The standard-setters will point out that a high quality fishery does, in fact, exist in some parts of the segment.

(ii) Based on this fact, they conclude that a high quality fishery could exist throughout the entire segment if it weren't for the two industrial discharges. In this regard, they interpret "existing ambient conditions" to refer not to the conditions that actually exist in the stream, but to conditions that would exist in the absence of man-made discharges.

(iii) In light of this situation, they conclude that the higher standard should be considered the "norm". (See 43 Fed. Reg. 29589, July 10, 1978). They suggest that they will adopt "relaxed" standards only if the higher standards are "unattainable" technically, or because they would lead to severe economic dislocation because of plant closures.

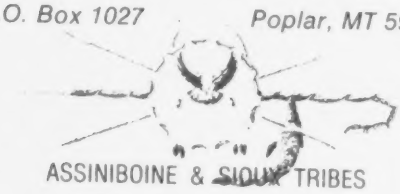
When you ask for the source of this latter policy, the standard-setters will almost surely point to EPA's grant regulations, 40 CFR Part 35, and the process by which standards are reviewed by the agency. It is likely that the state water program is funded largely through EPA grants. Since implementation of EPA's "fishable, swimmable" policy has traditionally been a grant requirement, it is unlikely that the state will risk the loss of federal money by refusing to go along. This puts you in a dilemma. You probably can't prove that the standards are "unattainable," because you don't know the precise impact they will have on your discharge permit. Furthermore, even if you could predict these impacts, it is unlikely you could show that the standards were "unattainable" -- it is more likely you would simply think them to be unreasonable. Thus, it is likely that the higher standard will be adopted.

Suppose the higher standard is, in fact, adopted. What happens next in the permit proceeding depends on the precise relationship between your discharge, other discharges, and streamflow conditions. If streamflows are typically high in relation to discharge flows, as they often are in wetter regions of the country, then the standards will have little or no impact. For instance, if the average flow of your discharge is 10 cfs, and the Y River rarely flows less than several hundred cfs, your discharge will be limited by BAT. However, receiving streams in the arid west generally suffer extended low flow periods. Thus, effluent limitations for major industries more often approach water quality standards than BAT guidelines.

What happens when a state proposes these low effluent limitations, which are generally beyond the discharger's existing treatment capacity? Section 301(b)(1)(C) of the Act suggests that if the limitations cannot be met, the source should be shut down. In a classic "Catch-22," economic issues generally cannot be raised during the permit process. The results are rarely so draconian, but they can nonetheless be costly. Generally, permit writers will devise a "compliance schedule" for meeting the water quality based limits. This can have one of two effects. If the discharger elects to go ahead and install the requisite treatment, he will retain his right to discharge, but he will have spent a lot of money in a manner that is unlikely to be cost-effective. If the discharger decides that he can't meet the limits, then the dispute has only been delayed. Upon expiration of the schedule, the discharger must once again attempt to change the underlying standards, using new information he has generated during its term.

As noted above, it is not necessarily unreasonable to make dischargers comply with water quality based effluent limitalimitations. Thus, compliance schedules aren't always objectionable. However, in the arid west, perhaps the majority of major industries are required to investigate the use of technologies that are "better" than "best". This practice is wasteful, and strongly suggests that economic and technical limitations are inadequately addressed in the standard-setting process.

FORT PECK TRIBAL COUNCIL
P.O. Box 1027 Poplar, MT 59255



ASSINIBOINE & SIOUX TRIBES

December 2, 1983

James J. Howard
Committee on Public Works and Transportation
Subcommittee on Water Resources
U. S. House of Representatives
Washington, D. C. 20515

Dear Mr. Howard:

Enclosed with this letter is testimony on possible amendments to the Federal Water Pollution Control Act that I am submitting on behalf of the Fort Peck Assiniboine and Sioux Tribes of Montana.

The Fort Peck Tribes are concerned that provisions of the Clean Water Act do not extend to Indian reservations. As a tribal entity responsible for the management of resources, we are concerned that water quality is virtually unprotected. This situation can be corrected through amendments to the Clean Water Act recognizing Indian Tribes.

We urge this committee to thoroughly review the situation and to extend protection of water quality to all waters in this Nation.

Sincerely,

Norman Hollow
Chairman

FORT PECK ASSINIBOINE AND SIOUX TRIBES

CLEAN WATER ACT TESTIMONY

The Fort Peck Assiniboine and Sioux Tribes of Montana are submitting this testimony to urge the House Committee on Water Resources and Congress to adopt amendments to the Clean Water Act that would recognize Indian Tribal governments and provide full protection for water quality on Indian reservations.

The Fort Peck Reservation, located in northeastern Montana encompasses a land area in excess of two million acres. The Missouri River forms the southern boundary of the reservation. Tributaries arising or crossing the reservation contribute approximately 204,000 acre feet of water annually to the Missouri River. Water is a valuable resource in this semi-arid region of the country. The maintenance or upgrading of the water quality of these tributaries is of great importance to the reservation people.

The cultural heritage of the Assiniboine and Sioux people has always emphasized respect and preservation of the natural environment as a responsibility of the people. The Tribes have always taken for granted that access to a clean environment is a God given right. However, interest in the vast energy and water resources on and around the reservation by energy corporations, developers, state and federal governments have prompted the Tribes to formally evaluate their vulnerability to exploitation by outside interests. Let it be noted that the Tribes are not anti-development. We realize that development of many of these resources is inevitable, if not on the reservation, then on surrounding lands. Development of natural resources in our area evokes the possibility of destruction of our environment and thus degredation of our cultural heritage and uniqueness. Although proverty and unemployment are very real on our reservation, we do

not believe that uncontrolled development of our natural resources offers any long term solutions; thus, the Fort Peck Tribes favor what can be termed orderly development with preservation of our lifestyle as our first priority.

This concern has prompted the Fort Peck Tribes to develop Tribal expertise and programs to research, monitor, and control environmental impacts. Unfortunately little headway has been made for protection of the reservation's water quality. This is because the provisions of the Clean Water Act to not extend to Indian reservations.

In 1972, P.L.92-500, the Federal Water Pollution Control Act, was enacted by Congress in an effort to clean up and maintain the integrity of the nations waters. The Act was amended in 1977 to better meet the needs of states and communities. The Clean Water Act as amended sets standards, deadlines, effluents, and discharges as well as sets forth the responsibilities of states and local governments in reaching national water quality goals.

Funds were made available to states to identify and quantify sources of water pollution. Funds were also provided to states to mitigate problems associated with various point and non-point sources of water pollution such as municipal wastes and agricultural run-off. Towards this end, states developed programs which classified their streams and lakes based on quality and allowable changes in that quality. Unfortunately, these programs did not extend to Indian reservations. The streams and rivers of the Fort Peck Indian reservations are not classified based on their true natural quality. In-stream flow requirements to support fisheries and wildlife have not been determined and baseline quality is still unknown for all but one of our streams.

The Fort Peck Tribes were awarded a 208 Area-Wide Management Planning

grant in 1978. With limited funding various point and non-point sources of pollution and several real and potential water quality problems on the reservation were identified. One major problem identified is lack of necessary baseline data on water quality and the biological characteristics of reservation streams and lakes. Without this information it is impossible to develop an effective reservation wide water quality management plan.

It was not until recently that the Fort Peck Tribes became fully aware of the holes in the state data base which we had intended to utilize in determing stream classifications and in-stream flow requirements. This discovery also leads us to believe that many other reservations are in similar predicaments. The result is that the mandates of the Clean Water Act are not being met on a substantial number of streams, rivers, and lakes nationwide.

It appears as though assistance has been given to Indian Tribes to develop water quality management plans merely for planning sake - there are no means for implementing the plans. By specifically including Indian Tribes as municipalities. Congress has limited the Tribal role in the Clean Water Act. The limited Tribal role has created a regulatory vacuum on Indian lands since states, except for certain Public Law 280 reservations, have no jurisdiction on Indian reservations.

We recognize a concern states may have in reconciling state water quality standards with standards proposed by Indian Tribes. Under Section 303 of the Clean Water Act, state standards require EPA review. Standards consistant with the Act are approved by EPA. If the state standards are not consistent with the Act, the EPA so informs the state which then has time to propose new standards. Through rulemaking, a similar mechanism could effectively resolve any state/tribal water quality standard variations.

In keeping with the direct relationship established between the Fort Peck Tribes and the Federal government in the Act of May 1, 1988 (25 Stat. 113-133, C. 213), we urge Congress to amend the Clean Water Act to provide us with the same recognition, authority and assistance to that given the states.

GENERAL MOTORS CORPORATION
1660 L STREET, N.W.
WASHINGTON, D.C. 20036

WILLIAM C. CHAPMAN
DIRECTOR, WASHINGTON OFFICE
INDUSTRY-GOVERNMENT RELATIONS
(202) 775-5062

January 16, 1984

The Honorable Robert A. Roe
Chairman, Subcommittee on Water Resources
U. S. House of Representatives
2243 Rayburn House Office Building
Washington, D. C. 20515

Dear Chairman Roe:

It is respectfully requested that the attached General Motors comments relative to the Clean Water Act be made a part of the record of the hearings recently held by your Subcommittee on Water Resources. The statement explains the nature of the problems faced by integrated industrial pretreatment facilities which were referred to by various witnesses. There is growing recognition of the adverse consequences that befall integrated facilities faced with different standards promulgated at different times. This was quite clear from your comments and dialogue with EPA Administrator William D. Ruckelshaus, following his Clean Water Act testimony before your Subcommittee. The statement will also correct a highly erroneous and misleading statement made by the NRDC witness before this subcommittee in testimony on November 9, 1983.

We stand ready to assist you, your staff, and your Subcommittee in your deliberations over reauthorizing the Clean Water Act.

Sincerely,

William C. Chapman

Attachment

STATEMENT OF

GENERAL MOTORS CORPORATION

TO THE

SUBCOMMITTEE ON WATER RESOURCES

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

U.S. HOUSE OF REPRESENTATIVES

FOR THE RECORD OF THE HEARINGS ON

REAUTHORIZATION OF THE CLEAN WATER ACT

JANUARY 16, 1984

General Motors Statement

In testimony recently presented to the Subcommittee on Water Resources relative to pretreatment requirements, a Natural Resources Defense Council, Inc. (NRDC) witness included a direct and negative reference to General Motors. Specifically, the NRDC witness, Frances Dubrowski, on November 9, 1983, said, "We (NRDC) conclude that General Motors waited until it had exhausted all litigation opportunities, and is now using the variance procedure to try to get EPA to ratify its decision to postpone compliance."

A review of those comments in the context of existing statutory and regulatory realities causes GM deep concern because of the implication created by NRDC that General Motors attempted to circumvent the pretreatment provisions of the Clean Water Act (CWA).

Therefore, General Motors is submitting herewith for the record a complete description of its activities relative to the effect of the pretreatment program on integrated facilities. Also, in order to place events in the proper perspective and gain a complete understanding of the current situation, it is necessary to review the regulatory activity which preceded General Motors filing of Fundamentally Different Factors (FDFs) variance applications for each of 27 plants. Several of these plants are projected to be unable to comply with requirements by June 30, 1984.

While the environmental implications of non-compliance are marginal since all the facilities in question comply with locally established water treatment standards, the other consequences of operating in non-compliance are alarming to us. Financial penalties could be $25,000 per violation per day in criminal

20-955 O—84——221

penalties plus $10,000 per violation per day in civil penalties, as well as imprisonment.

At one plant, an investment of $17,000,000 will be required to bring the plant into compliance, but even that kind of monumental spending will not achieve compliance in time to preclude the unreasonable penalties noted above. Since GM will not knowingly subject its employes to criminal prosecution, some way needs to be found to accommodate the present situation without having to consider closing anv of the plants in question.

General Motors believes it has demonstrated good faith efforts relative to all applicable pretreatment regulations under the Clean Water Act and continues to pursue those objectives. However, the retroactive reinstatement of some of the regulations mandated by the Third Circuit Court in July of 1982 and effected by EPA in September, 1982, had the effect of substantially shortening compliance time available to us. As a result, General Motors and others were presented with a revised regulatory framework with new and unrealistic constraints in the time available to accomplish compliance.

GM's filing in June, 1983, of FDF variance requests for facilities projected to be noncompliant beyond the June 30, 1984, deadline was based upon EPA's advice offered in meetings with Agency representatives and in accordance with then existing regulations. Earlier filing based on the September, 1982, EPA regulations could not be accomplished because required baseline monitoring information was being gathered. In fact, General Motors discussed our predicament openly and forthrightly with EPA, with Congressional representatives, and with NRDC itself as we explored possible alternative remedies. Our concerns focused on the serious impact of the court decision in July, 1982, which

denied us critically needed compliance time and the pretreatment requirements as they affect our integrated facilities.

Regrettably, four months after our filing of variance requests in June, 1983, the Third Circuit Court, in response to NRDC pleadings, in September ruled out FDF variances, creating the situation in which we now find ourselves.

We believe the serious impact of the July, 1982, court decision in consuming expected and necessary lead time is a totally unintended adverse consequence of the statute and its interpretations.

The chronology of events which led industry to this situation is:

1. In March, 1981, the applicability of the Electroplating Pretreatment Standards to integrated facilities was indefinitely suspended by EPA. Because the final rule was so suspended and was subject to modification by either judicial or administrative ruling, owners of integrated facilities had no way of knowing what their compliance obligations would be. Not until such time as the Third Circuit Court order gave these suspended rules -- with possible modifications -- new life would there exist guidelines to which to design and engineer suitable systems. Moreover, as part of its decision, the Court pointed out that their action did not necessarily affect the technical validity of the original suspension, but rather the decision was based on the finding that EPA had failed in 1981 to follow the requirements of the Administrative Procedures Act (APA). The Court further explained in its decision that EPA was not precluded from resuspending the regulations, provided that they did so in accordance with the APA. Although

the Court ruling occurred in July, 1982, EPA delayed until September 28, 1982 in responding to the Court's action. EPA then elected to reinstate the regulations without a subsequent resuspension. Therefore, integrated facilities (including General Motors plants) did not know, and in fact, could not know, of their exact compliance obligations any earlier than September 28, 1982.

Thus, the one-and-one-half-year gap between the promulgated (and subsequently suspended) regulation (January, 1981) and initiation of engineering studies is accounted for solely as the result of the retroactively reinstated regulation. It is beyond reason to expect integrated facilities to begin construction of treatment systems costing millions of dollars without knowing what their final compliance obligations will be.

2. As a direct result of the retroactive reinstatement of the deferred pretreatment regulations, which nullified 18 months of a 36-month compliance schedule, many GM integrated facilities are projected to remain noncompliant with the Electroplating Pretreatment Standards beyond the June 30, 1984 deadline. In response to GM's concerns relative to this situation, EPA suggested in meetings with Agency representatives that relief was available through Fundamentally Different Factors variances. Accordingly, GM filed on June 27, 1983, requests for extensions for time only, under the FDF variances procedure, for each of the noncompliant facilities. It is important to note that the Court action which ruled on the illegality of FDFs occurred on September 30, 1983, a full four months after the June 27 filing date.

In view of the above background facts relevant to the Electroplating Pretreatment Standards, it is clear that GM has been responding to conditions beyond its control which eliminated one-half the compliance time Congress intended. However, since the Court has withdrawn the FDF variance capability from EPA and since GM is not able to make up for the electroplating compliance time removed by government action, it is uncertain how the GM plants mentioned earlier can operate in compliance with the regulations after June 30, 1984. Contrary to allegations, General Motors has pursued options not only available to us under the law, but recommended by administrators of the law as well. Further, most of GM's affected facilities met the Electroplating requirements well in advance of the June 30, 1984 deadline; more will be brought into compliance by June 30, 1984; and necessary efforts are continuing to make the remaining several plants meet the requirements as soon as possible even though they likely will not meet those requirements by June 30, 1984.

Appended hereto as Attachment A is a brief paper which provides more detail and background on these government actions and their impact upon General Motors. Also appended hereto as Attachment B is General Motors testimony on related matters which was presented to the Senate Environmental Pollution Subcommittee on April 14, 1983.

* * *

Attachment A

BACKGROUND ATTACHMENT TO

GENERAL MOTORS CORPORATION CLEAN WATER ACT STATEMENT

The CWA requires the establishment of pretreatment standards for pollutants which interfere with, pass through, or otherwise are incompatible with a publicly-owned treatment works (POTW), as well as for those pollutants which prevent sludge use or disposal by such works. EPA has implemented these requirements through the promulgation of General Pretreatment Regulations which establish standards common to all industries, and industry-specific Categorical Pretreatment Standards which establish separate standards for 34 industrial categories, including Electroplating and Metal Finishing. This approach requires an industrial discharger which is subject to multiple category regulation (i.e., integrated facility) to comply sequentially with each categorical standard as it is promulgated.

The Electroplating Standards, one of eleven pretreatment standards affecting GM's integrated facilities, were amended in January, 1981. However, their applicability to and required compliance by integrated facilities (including General Motors) were directly tied to a portion of the General Pretreatment Regulations. These general controlling regulations were suspended indefinitely in March 1981, as a result of action

initiated in part by Vice-President Bush's Task Force on Regulatory Relief.

EPA's action suspending the combined wastestream formula had the effect of lifting any requirement for General Motors integrated facilities to meet the Electroplating Pretreatment Standards. Also, EPA announced that it was studying various alternatives to the suspended formula. Therefore, until EPA finalized its thinking on the formula, as well as the question of how to regulate integrated facilities, GM was unable to define the regulatory requirements it had to meet.

To restate our problem in a different way, until such time as final wastewater discharge requirements were established for integrated facilities, GM could not properly design and construct facilities to meet unknown objectives. Moreover, EPA refinalized the suspension of the combined wastestream formula on February 1, 1982.

On September 28, 1982, EPA implemented the order of the Third Circuit Court of Appeals by reinstating, retroactive to March 30, 1981, the deferred sections of the pretreatment regulations. The immediate effect of this action was to make the Electroplating Pretreatment Standards applicable to all integrated facilities, and, by that time, due to the retroactive nature of the order, to nullify 18 months of a 36 month schedule aimed at a June 30, 1984 compliance deadline.

With compliance time diminished, GM filed an administrative Petition for Stay and Rulemaking on August 10, 1982 requesting EPA to reconsider

and resuspend the section of concern because the remaining 24 months of compliance time was inadequate to design and construct facilities. In passing, it should be noted that the Court decision did not prevent EPA from undertaking a proper rulemaking to continue the suspension of the regulation. On June 3, 1983, EPA denied General Motors petition. On September 1, 1983, GM filed an appeal to this denial.

In the meantime, EPA proposed the Metal Finishing regulations appplicable to the same integrated facilities affected by Electroplating. As proposed, the Metal Finishing rules would have established significantly more stringent levels of control on the industrial discharge. In these proposals EPA maintained that the more stringent second level of control (Metal Finishing) could be achieved by application of the same treatment technology required by the Electroplating. GM's position on this was that in order to meet the proposed Metal Finishing standards, additional treatment would be required.

Concurrent with General Motors activity in the regulatory and judicial areas, similar efforts were undertaken in Congress to effect changes to the CWA during current reauthorization activities. These efforts included numerous conversations with the NRDC representative, discussions with EPA and congressional staff, and GM testimony before the Senate Subcommittee on Environmental Pollution. Our testimony projected an estimated $350 million expenditure for GM to comply sequentially with eleven pretreatment standards (see Attachment B). This testimony also indicated the potential for misspending $200 million

in order to comply sequentially with future standards that would affect the same facilities.

After receiving comments from GM and others relative to the proposed Metal Finishing rules, on July 15, 1983, EPA issued final regulations which elevated approximately two-fold the pollutant limitations. These final standards, which must be met by February 15, 1986, can be attained by available technology and are perceived by many in the industrial community to meet the requirements of the CWA.

In a related matter, on September 30, 1983, the Third Circuit Court of Appeals rendered its decision on the 1981 litigation, in essence upholding the validity of the General Pretreatment Regulations and Electroplating Pretreatment Standards relative to integrated facilities. The Court also ruled in favor of NRDC pleadings that the granting of FDF variances for toxics would be illegal under the CWA.

General Motors integrated facilities which do not already meet the Electroplating and Metal Finishing Pretreatment Standards are now proceeding with requisite engineering and construction activities which will culminate in compliance. Because wastewater treatment technologies for both regulations are similar, treatment facilities installed to meet Electroplating will also provide compliance with Metal Finishing.

12/13/83

STATEMENT OF

GENERAL MOTORS CORPORATION

TO THE

SUBCOMMITTEE ON ENVIRONMENTAL POLLUTION

OF THE

SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ON

COMPLIANCE WITH CATEGORICAL PRETREATMENT STANDARDS BY INTEGRATED FACILITIES

PRESENTED BY

PHILIP E. GERWERT

ENVIRONMENTAL ACTIVITIES STAFF

APRIL 14, 1983

WASHINGTON, D.C.

Good morning, Mr. Chairman and Members of the Subcommittee. I am Philip E. Gerwert, Manager, Water Pollution Control, General Motors Environmental Activities Staff.

We welcome this opportunity to review with you the effect of categorical pretreatment standards on our one hundred forty plus plants -- over 100 of which are classified as integrated facilities.

Before doing that, however, let me state that General Motors recognizes the great improvement in the quality of the nation's waterways which has resulted from implementation of the Clean Water Act, particularly since 1977. We also acknowledge at the outset that the categorical pretreatment standards, while not the ideal solution from General Motors viewpoint, appear likely to achieve the objectives for which they were designed, at least in a large number of plants where only one type of wastewater is discharged. Thus, the Act has been and can continue to be successful in at least these two major aspects.

Our testimony today will address two additional points, where it appears the consequences of the Act are unintended. First, it has been generally acknowledged that compliance with Best Available Technology (BAT) cannot be achieved by the dates currently specified in the Clean Water Act. This situation is addressed by the provisions of Senator Randolph's bill, S. 432, which we fully endorse. The second point centers on the lack of equitable, practical pretreatment standards for

integrated facilities. This issue, while not addressed in S. 432, was included in Senator Randolph's floor remarks on February 3, 1983, when he introduced the bill (Congressional Record, page S. 1011, attached).

General Motors supports S. 432. because it would provide necessary relief from the harsh consequences of the 1984 BAT deadline in a reasonable way. In addition, we commend Senator Randolph for recognizing in his introductory message to S. 432 the compliance problem faced by integrated facilities. The solution he suggests would correct the problem faced by one major segment of the industrial community -- that which utilizes integrated treatment facilities to accomplish the necessary control in a more economical way. The approach suggested by Senator Randolph can be made without any far-reaching substantive changes in the Act, and without sacrificing water quality.

BACKGROUND

By way of background for the specific problem I will address, Section 307(b) of the Clean Water Act directs the Environmental Protection Agency (EPA) to promulgate categorical pretreatment standards in order to regulate the discharge of pollutants from industries into publicly-owned treatment works (POTWs). Specifically, these standards must (a) prevent pollutants from interfering with the operation of such POTWs, (b) ensure that such pollutants do not pass-through the POTW, (c) prevent sludge contamination, and (d) assure continued compliance by the POTW's with their discharge permits.*

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*Under the National Pollutant Discharge Elimination System

The Act currently incorporates the commitments embodied in the 1976 Consent Decree entered into by the Agency and the Natural Resources Defense Council. These commitments include provisions for the Agency to establish several industrial (source) categories for regulation of wastewater discharges.

Final regulations for 14 of the 34 primary industry categories thus far listed by EPA have been issued. Fourteen more have been proposed and are pending promulgation. Based upon EPA's "Regulatory Agenda" (October 28, 1982, 47 Federal Register 48734-42), regulations for the six remaining categories are scheduled to be proposed during 1983, with promulgation expected approximately nine to twelve months later.

SEPARATE SOURCE VS INTEGRATED PRETREATMENT

Under this regulatory program for the control of pollutants into POTWs, industries must comply with the specific categorical pretreatment standard which reflects actual operations performed at a given facility. For example, a facility performing electroplating operations exclusively is regulated by the electroplating pretreatment standards, while one which manufactures only inorganic chemicals is regulated under the inorganic chemicals pretreatment standards. Each of these types of facilities is required to install separate pretreatment equipment on its wastestream.

Obviously, this approach does not address the problems encountered by large, diverse complexes typical of many in American industry, where multiple sources and various kinds of manufacturing operations on the premises of a single facility cause the discharge of several different types of wastewater. Such installations are subject to as many different standards as there are individual categorical wastestreams within the confines of the plant. An overview of the widespread effect of such multiple categories on GM facilities, for example, are presented in Attachment A.

GM EXPERIENCE

General Motors manufacturing operations are representative of these large, diverse complexes. Of the 140 plus General Motors facilities which discharge process wastewaters into POTWs, 94 will be required to comply with the electroplating pretreatment standards by June 30, 1984, as well as subsequent pretreatment standards yet to be promulgated. From experience, we already know that each unit of control equipment required by such future separate categorical standards will in significant measure duplicate equipment on other different wastestreams. For efficiency purposes, it is clear that one unit of control equipment should be installed on the combined wastestream prior to discharge to the POTWs.

Contrary to what one would expect, there is an additional difficulty we face, namely, that compliance cannot be determined by direct comparison of the pollutant concentration levels in the discharge with the

pollutant limitations established by the various regulations. And here I must get fairly technical to define the crux of our problem.

The comparison just mentioned cannot be made because the actual regulated value for the same specific pollutant varies among the different categorical pretreatment standards. For example, the daily maximum limitation for nickel is 4.1 milligrams per liter for the Electroplating category, whereas it is 3.51 milligrams per liter in the proposed Metal Finishing pretreatment regulations.

In an effort to accommodate these variables at integrated facilities, EPA provided a mechanism for determining compliance with the various categorical pretreatment standards mathematically through the use of a "combined wastestream formula." This formula calculates the flow-weighted average of each pollutant limitation common to several of the categories affecting any given facility.

While the "combined wastestream formula" may be appropriate for some integrated facilities -- that is, those for which all categorical standards have been issued -- it does not resolve the problems faced by all integrated facilities for the following reasons:

1. The first problem is the inability to determine the ultimate pollutant limitations using the combined wastestream formula until the limits have been established for each category at a manufacturer's facility. Thus, only after promulgation of

the last applicable standard can we assess with any degree of certainty the technological feasibility of meeting the combined pollutant limitations because the "combined wastestream formula" relies on published standards for each category. In short, we face a moving target.

2. The second reason is the result of the first. Since the compliance numbers for each new category affect the combined numbers derived from the formula, the likelihood exists of having to alter over and over the design of the combined industrial wastewater control equipment. In some cases, portions of a facility that have been completed in order to comply with the discharge requirements calculated from the combined wastestream formula will be obsoleted or require significant change due to a subsequently issued categorical standard. As a result, a substantial amount of monies for such facilities could be misspent.

A visual presentation of the cost-inefficiency of the sequential, category-by-category compliance approach, compared with the single control approach applied to the total combined wastestream as a distinct category, can be seen in Attachment B.

SOLUTION TO INTEGRATED FACILITIES PROBLEM

In order for our facilities to comply with the current requirements of the categorical preatment standards, General Motors has estimated it will require capital expenditures of about $350 million. We also have estimated that about $200 million of this investment could be avoided if the law provides for the designation of "integrated facilities" as a distinct source category. As previously mentioned, such a remedy for the problem of integrated facilities was noted by Senator Randolph in his remarks accompanying the introduction of S.432. Compliance for this new category would also be required no later than three years following promulgation of the final categorical pretreatment standard affecting a given integrated facility. We heartily agree with this approach.

However, in order to avoid compliance dates which extend too far into the future, it would be appropriate to limit the affected source categories to the primary industries previously referenced.

These remedial actions can be implemented by appropriate amendments to Sections 306 and 307 of the Clean Water Act. Consistent with the above, the compliance date for a facility classified as "integrated" could be extended only to the latest compliance deadline specified in the combination of those primary categories which affect that given facility. Moreover, by designating "integrated facilities" as a separate source category, the technological attainability of the final standards can be assessed properly, and cost-effective, environmentally-sound controls installed.

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CONCLUSION

In summary, General Motors remains committed to controlling the discharges of pollutants to our nation's waters consistent with the goals of the Clean Water Act. In 1947 we completed installation of our first integrated facility at a GM plant. Because of this commitment, all of GM's plants in this country have water pollution control now in place. From 1969 to 1982, to cite a period for which GM has recorded its expenditures, we have spent approximately $879 million for water pollution control.

Future controls, GM believes, must be instituted in the most technologically-feasible and cost-effective manner if this country and its industrial community are not to squander their limited economic and engineering resources. With regard to pretreatment, this can be accomplished with the modifications to the Clean Water Act suggested by Senator Randolph and endorsed here today by General Motors. Again, this can be done without impairing the quality of the receiving water. We urge that the Committee act on our recommendation to clarify the intent of Congress with respect to establishing separate categorical source and non-conflicting effective dates for integrated sources.

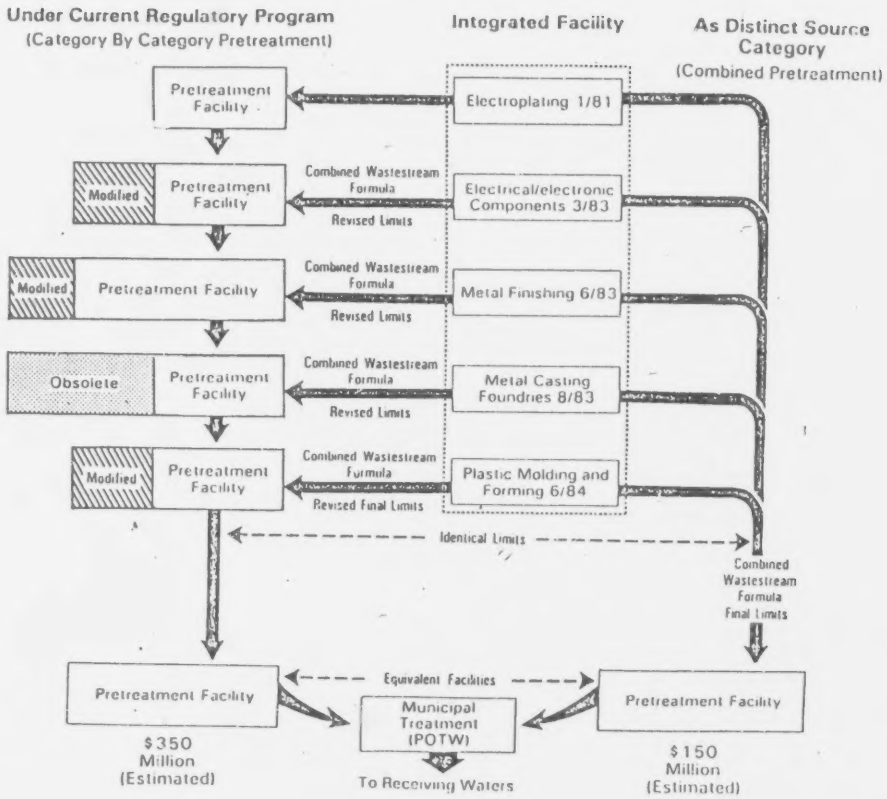
MULTIPLE CATEGORY IMPACT OF PRETREATMENT STANDARDS ON GM INTEGRATED FACILITIES

GM ntegrated acilities	Electro-plating (1/81)*	Porcelain Enameling (11/82)*	Rubber Processing (12/82) **	Electrical/ Electronic Components (3/83)*	Battery Mfg. (6/83)**	Metal Casting Foundries (6/83)**	Metal Finishing (6/83)**	Aluminum Forming (7/83)**	Copper Forming (7/83)**	Plastic Moldin Formi (6/84
62	X						X			
3	X			X			X			
6	X					X	X			
1	X						X	X		
10	X						X			X
4	X						X	X		X
1	X					X	X			X
2	X		X				X			X
1	X					X	X		X	X
2	X		X				X		X	X
1	X			X		X	X			X
1	X	X		X		X	X			X
1			X				X		X	X
1					X	X				
4					X	X				X
9							X			X

* - Final Rule

** - Scheduled promulgation date

General Motors Facilities



Attachment B

ance within 3 years of adoption of such standards.

Arguments have been made for, and last year's administration bill reflected, the concept of national categorical standards for only the major sources of toxic pollutants, with a provision that exemptions would be obtained on certification by a publicly owned treatment works that it has a program adequate to maintain designated uses for receiving waters.

This legislation does not modify the requirement for establishment of national categorical pretreatment standards. It permits local treatment works to establish and implement alternative local pretreatment systems under certain stringent conditions. Such systems would be closely monitored and controlled, and would not be detrimental to current existing designated uses for receiving waters. This approach will serve as a starting point for this year's consideration of the pretreatment issue. I expect further amendments to it to be offered.

Mr. President, I believe this bill to be an important further step in the deliberations of last year. I look forward to working with the Environmental Pollution Subcommittee, chaired by our able colleague, Senator CHAFEE, and the Committee on Environment and Public Works, under the constructive leadership of Chairman STAFFORD, in completing vital action on amendments to the Clean Water Act.●

By Mr. RANDOLPH:

S. 432. A bill to amend the Clean Water Act to extend the 1984 compliance date for certain recently established requirements; to the Committee on Environment and Public Works.

CLEAN WATER COMPLIANCE DATE EXTENSION ACT OF 1983

● Mr. RANDOLPH. Mr. President, today I am introducing the Clean Water Compliance Date Extension Act of 1983. It is my intention that this legislation be considered by the Committee on Environment and Public Works at the same time as the Clean Water Act Amendments of 1983, a measure also intoduced today by my colleague, Senator JOHN CHAFEE.

The measure I introduce is similar to an amendment which I considered offering to the Clean Water Act last year, when the committee was examining possible amendments to that act. I did not offer it at that time because it was apparent that such an amendment, regardless of its merit, would attract a number of other amendments, perhaps not so meritorious.

The Clean Water Act currently mandates that industry achieve effluent limitations based on the best available technology (BAT) for all toxic pollutants no later than July 1, 1984. BAT for nonconventional pollutants must be achieved by 3 years after promulgation but no later than July 1, 1987, and BCT, or the best conventional technology for conventional pollutants, such as biological oxygen-demanding materials, by July 1, 1984. These targets were set in the expectation that the Environmental Protection Agency would promulgate guidelines in a timely fashion for the 26 industrial categories initially to be regulated by the 1977 amendments to the act. The Agency has been unable to conform with this expectation, and is now under court order to promulgate all guidelines by late in 1983.

For most of the 26 industries required to comply with these standards, it will be impossible to meet the July 1984, date for compliance which is mandated by law. Guidelines for most of these industries have not yet been promulgated. Testimony at last year's hearings of the Environmental Pollution Subcommittee demonstrated that 3 years after promulgation would probably be necessary to write permits and design and construct facilities. Such as extension, important to many industries, will be essential to the steel industry, for which guidelines were not promulgated until May 1982. In fact, these guidelines are under litigation and may be revised further. I am not being parochial, Mr. President, when I say that the steel industry, so important to my own State of West Virginia, is equally important to the welfare of the Nation as a whole.

The bill I introduce today would extend these deadlines. Three categories of treatment are addressed in this measure: BAT and BCT deadlines for toxic, nonconventional and conventional pollutants; recently issued BPT (best practicable technology), a minimum requirement for all pollutants—confined to guidelines issued after January 1, 1982, such as those for parts of the steel industry; and permits based on best engineering judgment for pollutants for which guidelines have not been established but which have been granted in lieu or effluent guidelines for BAT, BCT, and BPT since January 1, 1982. These deadlines may be extended to not later than 42 months after the date of enactment of this legislation, or not later than 36 months after the date of promulgation or issuance of the appropriate effluent guidelines or permit, whichever is later.

This extension will give industry a minimum of 3 years after Environmental Protection Agency promulgation of guidelines to comply with requirements, with all industries with previously issued guidelines achieving compliance by 3½ years after the bill is signed into law.

I look forward to working with Environmental Pollution Subcommittee Chairman JOHN CHAFEE and full committee Chairman BOB STAFFORD in the development of this amendment to the Clean Water Act.

Mr. President, the failure of the Environmental Protection Agency to promulgate industrial standards has also had a severe impact on the ability of industry to comply with the pretreatment requirements of the Clean Water Act. Although a provision of the amendment I considered offering last year dealt with this, I have not addressed this issue in the context of the bill which I introduce today. When the Committee on Environment and Public Works considers amendments to the Clean Water Act, however, it may be appropriate to add language which will deal specifically with the problems being encountered by industries in which diverse manufacturing operations require the application of more than one categorical pretreatment standard.

One example of such an industry would be an automotive manufacturing plant, in which waste water from each individual operation is ultimately combined to achieve cost-effective compliance with water quality standards. Such an industry is faced with severe practical problems in complying with the Environmental Protection Agency's categorical pretreatment standards, particulary when they are issued at widely different times. The discharge limits imposed by the combined waste-stream formula will change as subsequent pretreatment standards are promulgated. This means that this industry, as well as others having integrated operations, will be uncertain about the form of future compliance obligations. It will make it impracticable, if not impossible, for such industries to build new treatment plants until all applicable standards are promulgated.

It may be appropriate to incorporate into section 307(b)(3) of the Clean Water Act as designation of an integrated facilities category, to be defined as a facility in which more than one waste stream is subject to categorical standards, issued at different times, entering a publicly owned treatment work. Under the law, compliance with pretreatment standards would be mandatory within 3 years after promulgation of the last categorical standard affecting such a facility.

As I said, Mr. President, I have not included this concept in the legislation which I introduce today. But I believe the committee should give attention to this problem when it considers other amendments to the pretreatment provisions of the Clean Water Act. It is my understanding that Chairman STAFFORD and Subcommittee Chairman CHAFEE are committed to reporting out this legislation by mid-March, and I will support their efforts to do so.●

By Mr. GARN (for himself, Mr. PROXMIRE, Mr. NUNN, Mr. COHEN, Mr. TOWER, Mr. MOYNIHAN, Mr. LAXALT, Mr. THURMOND, Mr. ARMSTRONG, Mr. TRIBLE, Mr. MATTINGLY, Mr. HATCH, Mr. HELMS, Mr. PRESSLER, Mr. ABDNOR, Mr. SYMMS, Mr. EAST, and Mr. WALLOP):

WEST VIRGINIA SOCIETY OF PROFESSIONAL ENGINEERS

P. O. Box 367, Charleston, WV 25322
6114 MacCorkle Ave., SW, St. Albans, WV 25177
Telephone 304/768-9791

November 1, 1983

The Honorable Robert A. Roe
House of Representatives
Rayburn House Office Building
Room 2243
Washington, D.C. 20515

Dear Mr. Roe:

My sincere thanks to you for permitting Mr. John Hart, P.E. to present the position of this organization on amendments to the Clean Water Act to your Subcommittee during your recent hearings.

It is true that we inadvertantly failed to provide a copy of our remarks to NSPE prior to the hearing, and as stated in Mr. Weinerts letter to you of October 26th we are a small minority of the national organization. Nevertheless, we do speak for the state of West Virginia and the issues of collector sewer funding and 75% grants are of such magnitude to the success of the water pollution control effort in West Virginia that we had to make this known directly to you.

Confusion, if it exists in this instance must be with those who are trying to focus divergent views into one statement to present for hearing. But in reality it is your comittee that should have the divergent views so you can, sift the wheat from the chaff and produce realistic, workable legislation. This is the meat of what democracy is all about.

We are most pleased to know our views correspond with yours. If we may be of service to you in anyway please let us know.

Sincerely,

GOUTY ASSOCIATES, INC.

Otis D. Gouty, P.E.
President

lgb

cc: Honorable Nick Joe Rahall, U.S. Congress
Don Weinert, Exec. Dir., NSPE

GOLDEN ANNIVERSARY

"50 YEARS OF SERVICE TO THE STATE OF WEST VIRGINIA"

BILL SHEFFIELD
GOVERNOR

STATE OF ALASKA
OFFICE OF THE GOVERNOR
WASHINGTON, D.C.

October 6, 1983

RECEIVED
OCT - 7 1983
PUBLIC WORKS AND TRANSPORTATION COMMITTEE

The Honorable James J. Howard
Chairman
Committee on Public Works
and Transportation
U.S. House of Representatives
Room 2165
Rayburn House Office Building
Washington, D.C. 20515

Dear Representative Howard:

The State of Alaska has been actively involved in and concerned about Section 404 of the Federal Water Pollution Control Act for a number of years. As your Committee looks at possible amendments to that Act, and Section 404 in particular, we did want to contribute the enclosed statement to the record.

With an estimated 59% of the country's remaining undeveloped wetlands, the State of Alaska continues to have a keen interest in the 404 program. As a measure of that interest, the Sheffield Administration has recently prepared a summary of points which we believe are important to consider in any review of the 404 program. The points address the procedural problems which have arisen in implementing Section 404, while encouraging the relention of its substantive provisions. In particular, we have found the current law allowing State assumption of the program to be cumbersome and counter-productive to the Congressional intent of encouraging such assumption by States.

We hope that you find our "seven points" helpful as the Committee considers action on the 404 program. If you have any questions or desire any further information, I would be happy to oblige.

Sincerely,

John W. Katz

John W. Katz
Director of State/Federal
Relations and Special
Counsel to the Governor

Enclosure

STATE OF ALASKA
SHEFFIELD ADMINISTRATION
RECOMMENDATIONS ON
SECTION 404 OF THE
CLEAN WATER ACT

The seven points below represent the Sheffield Administration's formal outline on possible amendments to Section 404 of the Clean Water Act. The paper responds to the need for the State of Alaska to convey its recommendations to its Congressional delegation in Washington, D.C. It updates the State of Alaska's recommendations presented as testimony before the U.S. Senate Committee on Environment and Public Works on July 8, 1982. The State does not currently seek substantive amendments to Section 404. The State is interested, however, in exploring alternatives which would improve the procedural aspects of the 404 program and make more attractive the possibility of State assumption of the 404 program, including State administration of the 404 program on State lands.

The seven cornerstones of the State of Alaska position are:

1. Retain the substantive provisions of Section 404 as they currently exist. Retain the current regulatory jurisdiction over phase I, II, and III waters of the United States.

2. Streamline the 404 permitting process through all available avenues.

3. Encourage flexibility within individual Corps' districts for resolving agency disputes at the regional level rather than at the national level.

4. Establish reasonable but definite time periods for permit review, while providing for extensions when properly justified. Continue use of preapplication and pre-decision conferences.

5. Consistent with Senator Murkowski's directive to resource agencies, advocate the completion of local, State and federal wetland management plans or guides as a desirable means of expediting 404 permitting through mapping, classifying and managing wetlands according to relative value.

6. Support changes that will make delegation of the 404 program to States more acceptable. Support management or other alternatives which allow for direct State administration of the 404 permit program on State lands. (Alternatives here include assumption of the 404 program by the State on State lands; the use of general and regional 404 permits on State lands; and local administration of general permits in areas with approved local wetlands management plans.)

7. The State of Alaska encourages federal regulators and legislators to consult with the State prior to making major changes in Section 404 or implementing regulations.

Kimberly-Clark

November 10, 1983

Representative Robert A. Roe
Chairman, Water Resources Subcommittee
House of Representatives
2243 Rayburn House Office Building
Washington, DC

Re: Clean Water Act Position Statement of Kimberly-Clark Corporation

Dear Representative Roe:

Kimberly-Clark Corporation appreciates this opportunity to provide input to the Water Resources Subcommittee regarding Clean Water Act issues and amendments.

A major U.S. manufacturer of fiber-based products for personal care, service, institution, and other diverse markets, Kimberly-Clark Corporation has operations throughout the U.S. covering all phases of pulp and paper production, nonwoven fabric manufacturing, and aircraft refurbishing. Twenty-nine Kimberly-Clark facilities in seventeen states are directly or indirectly affected by the Clean Water Act.

Kimberly-Clark comments focus on five specific issues in the Clean Water Act (CWA) renewal and amendments. The five issues are discussed in detail below and are supported by examples of Kimberly-Clark's concerns.

1. Dams/Water Quality

The significant adverse effects of large dams on downstream water quality are now well established. This phenomenon was documented in testimony before the Water Resources Subcommittee by the National Wildlife Federation, which demonstrated that dams can cause major dissolved oxygen and other water quality problems. Kimberly-Clark shares this concern.

As a case in point, Kimberly-Clark cites the Coosa River in Alabama from Logan-Martin Dam to Lay Lake. Logan-Martin Dam is a large peaking power dam constructed in 1964 by Alabama Power Company. It has drastically changed the flow regime of the river during the critical water quality months of May through October.

Kimberly-Clark Corporation 401 North Lake Street Neenah, Wisconsin 54956 (414) 721-2000

In the past, the Coosa River was characterized by a continual, slowly changing flow. Now, its flow changes frequently and is characterized by large fluctuations (Attachment 1). For example, flows below the dam can change from approximately 500 cfs (dam leakage) to 10,000, 20,000 or 30,000 cfs (operation of one, two, or three turbines) in less than an hour.

A concomitant change wrought by the dam is a reduction in lowest recorded one-day flows. Attachment 2 indicates that summer, one-day low flows were reduced by as much as 80 percent, from 1300 to 436 cfs. This type of change can severely affect water quality (Attachment 3) and result in increased stress to aquatic life.

The ability of industries to discharge wastewater to the river downstream from the dam is restricted by the State of Alabama on the basis of low flow and dissolved oxygen concentrations. At our Coosa Pulp & Paper Mill, ten miles downstream from the dam, wastewater must be stored in a 1.6 billion gallon lagoon system, sometimes for as long as a month, until the turbine operation provides adequate flow and the dissolved oxygen levels rise above designated minimum levels. The net result is that the mill incurs significant additional operating problems to compensate for the unregulated adverse impacts of the dam's generating operation.

Other large dams similarly affect aquatic life, recreation, aesthetics, municipal treatment plant and industrial operations. Kimberly-Clark believes that an amendment to the Clean Water Act is necessary to address water quality problems associated with designated categories of large dams.

H.R. 3282, introduced by Chairman James Howard, includes a provision that the Environmental Protection Agency (EPA) study and monitor the water quality effects attributable to dams and recommend control measures. This provision is a step in the right direction, and Kimberly-Clark fully supports its intent. EPA needs additional legislative direction in establishing the minimum water quality standards which must be met by operators of designated categories of large dams.

2. Finalizing BCT Effluent Guidelines

Best Conventional Pollutant Control Technology (BCT) effluent limitation guidelines for the Pulp and Paper Point Source Category have not been promulgated, even though these guidelines have been under development by EPA for over five years and final compliance is required under the present Water Act by July 1, 1984. Attachment 4 provides a brief history of BCT effluent guideline development for the Pulp and Paper Industry.

BCT proposals have been a shifting target for both the Pulp and Paper Industry and state regulatory authorities, making planning to meet anticipated BCT requirements a complex and frustrating exercise. The latest shift is the result of EPA's proposal to use new cost data from Publicly Owned Treatment Works (POTWs), but not industrial Wastewater Treatment Plant (WWTP) costs, in calculating BCT "cost reasonableness" benchmarks. This could potentially change BCT limitations in ten industry subcategories.

Nor does the BCT development history for the Pulp and Paper Industry presage confidence in the stability of BCT effluent guidelines once they are promulgated in "final" form. EPA currently has the option of revising "final" BCT guidelines at any time. In fact, Section 301(d) mandates that BCT effluent limitations be reviewed at least every five years. Considering BCT development to date, "final" BCT guidelines may be subject to frequent revision. Pulp and Paper Industry investments to meet "final" BCT guidelines will likely miss this moving target.

To ensure the stability of final BCT effluent guidelines, Kimberly-Clark recommends that once final BCT standards are published, they be held constant for 10 years. This would remove the "moving target" aspect of BCT standards. The ten-year period of unchanging standards should apply only to BCT.

Control of conventional pollutants at final BCT levels for ten years would provide adequate time for evaluation. Such standards should be more than sufficient to protect against the actual environmental effects of conventional, non-toxic pollutant discharges by most dischargers, and EPA has ample, alternative authority to deal with

specialized water quality problems. A fixed period of time will further ensure that compliance investments can be made with reasonable confidence.

3. Ten Year Permit Life

Kimberly-Clark currently has five major NPDES permits which expired in 1981 or 1982 and that have not yet been renewed due to the current backlog of permit renewals at both the Federal and State level. Extending permit life from five years to ten years would help to relieve permit backlog by reducing paperwork. Existing reopener provisions currently in effect or written into a permit at the state's discretion would ensure that ten year permits do not become outdated.

4. 301(h) Waivers

Kimberly-Clark views 301(h) waivers of secondary treatment as a program which should not be limited to ocean environments, but where justified be extended also to major inland waterways.

Existing 301(h) regulations allow waiver applications from municipalities discharging to estuaries and bays. The use of secondary treatment waivers for discharges to marine environments should be limited to deep ocean discharges. Bays and estuaries often contain unique and sensitive aquatic life, breeding areas, and commercially important fisheries that should not be subject to pollutant discharges. Kimberly-Clark recommends that a CWA amendment prohibit 301(h) waivers for discharges to bays and estuaries.

In contrast, major inland waterways are very effective in assimilating conventional pollutants. Rivers such as the Mississippi can adequately assimilate municipal wastewater that has received only primary treatment without degradation of water quality. Any such waivers would, of course, have to be based on careful assimilative capacity modeling to ensure that they would not have adverse environmental consequences and would then have to be carefully controlled.

301(h) waivers for major inland waterways would have two immediate benefits. Municipalities obtaining waivers would benefit from immediate and future savings of capital and operating expenditures. Municipalities in

need of Federal funds for wastewater construction projects could benefit from the greater availability of funds. Waivers for major inland waterways would also have secondary benefits. For example, reduced municipal sludge disposal requirements would assist with the growing solid waste disposal problem.

Kimberly-Clark supports a CWA amendment that would allow 301(h) waivers for major inland waterways.

5. Reporting Hazardous Waste Mixture

Kimberly-Clark believes that CWA amendments should include a provision requiring reporting any hazardous wastes sent to POTWs in liquid mixtures since they can seriously disrupt treatment plant operations to the detriment of all indirect dischargers. Seventeen Kimberly-Clark facilities discharge all or a portion of their wastewater to POTWs; we are concerned that these POTWs continue to operate effectively.

We believe Kimberly-Clark Corporation's positions are worthy of serious consideration in formulating the Clean Water Act Amendments. Our representatives are prepared to further discuss any of these issues with you or members of your staff. Thank you for your consideration.

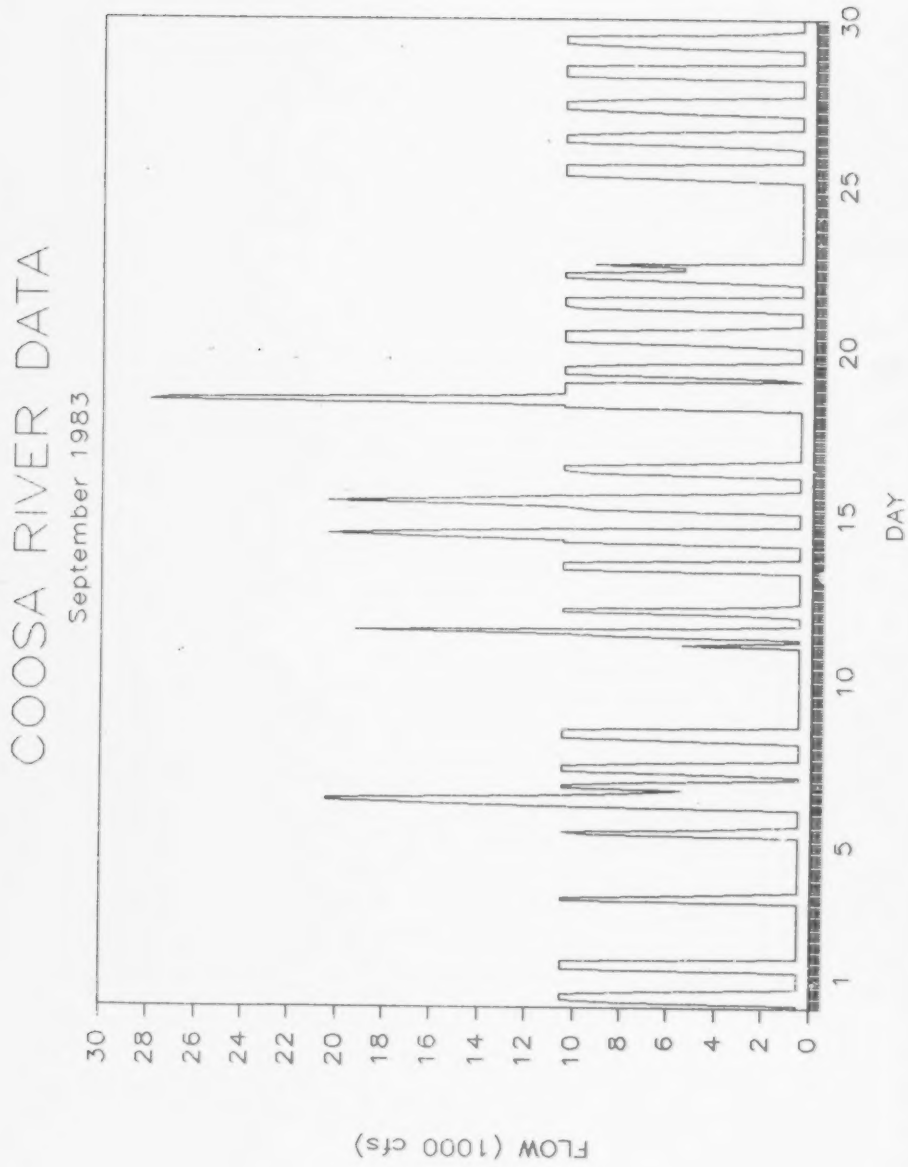
Sincerely,

E. E. Dickson

E. E. Dickson, Director
Environmental and Energy Engineering

EED:n

Attachment 1



Attachment 2

Coosa River at Childersburg
Lowest Recorded One Day Flow (cfs)*

Month	Before Dam (50 years)	After Dam (13 years)**
June	2510	500
July	2290	480
August	1500	558
September	1300	440
October	1340	436
November	1680	500

* At Childersburg gaging station, approximately 13.3 miles downstream from Logan Martin Dam.

**1966-1978

Attachment 3

SUMMARY OF DISSOLVED OXYGEN ANALYSIS
KIMBERLY-CLARK INTAKE

D.O. CONCENTRATIONS (mg/l) (1)
PRE-DAM (1949-1963)

MONTH	HIGH	LOW	MEAN
July	8.0	6.1	7.1
August	8.6	6.2	7.5
September	9.2	7.1	7.9
October	11.6	7.6	9.2

DAILY AVERAGE D.O. CONCENTRATIONS (mg/l) (2)
POST-DAM (1976-1980)

MONTH	HIGH	LOW	MEAN
July	7.3	2.8	4.9
August	7.5	2.9	4.8
September	7.5	3.1	5.2
October	8.4	4.3	6.6

(1) Determined from monthly grab samples

(2) Determined from bi-hourly samples

Attachment 4

BCT History
Pulp and Paper Point Source Category

DATE	EVENT
August 29, 1979	BCT Methodology Published
November/ December 1980	Proposed Development Document for Effluent Limitation Guidelines Published
January 6, 1981	First BCT Proposal
July 28, 1981	BCT Methodology Revised by Court Order
October 29, 1982	EPA Revised Methodology Published and Reproposal of BCT
June 2, 1983	EPA Proposal to use Revised Cost Data to Change Proposed BCT
September 27, 1983	EPA Withdraws Proposal to Use Revised Cost Data Subject to Reevaluation
??	Final BCT Standards Issued

20-955 O—84——223

RAY KOGOVSEK
3RD DISTRICT, COLORADO

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WASHINGTON, D.C. 20515
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House of Representatives
Washington, D.C. 20515

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303-241-8800

July 19, 1983

The Honorable Robert A. Roe
Chairman
Subcommittee on Water Resources
Committee on Public Works and
Transportation
B376 Rayburn HOB
Washington, D.C. 20515

Dear Chairman Roe:

In your Subcommittee's deliberations in connection with hearings on July 19 and 20, 1983, I would like to call to your attention two related situations which bear on proposed amendments to the Federal Water Pollution Control Act.

First, there are instances where industrial point sources have, through their own efforts and resources, met and exceeded the state and federal water quality standards for the streams on which they are situated. These systems have, in fact, made their discharges "fishable and swimable." I believe you will agree that these efforts should be recognized; not penalized.

Secondly, when any further technology requires the consumption or destruction of water, a very precious commodity in the arid west, state water rights of downstream users are often breached. I am confident that this is not the intent of the Subcommittee's efforts.

For your interest, I have attached specifics on one case which combines the two considerations. I respectfully request that these facts be included in the record of your Subcommittee's hearings.

Thank you for your consideration of this important matter.

Sincerely,

Ray Kogovsek

RAY KOGOVSEK
Member of Congress

RK:ml

Enclosure

Testimony Presented to The

Subcommittee on Water Resources

of the

Public Works and Transportation Committee

of the U.S. House of Representatives

by

William R. T. Crolius
Vice President, Crane Co.
in
Behalf of CF&I Steel Corp.
a Subsidiary of Crane Co.

Conclusions - Recommendations

Chairman James Howard has stated in his introduction to his bill to amend the Federal Water Pollution Control Act, his dedication to the continuing protection of stream quality standards. His goal is expressed as "fishable and swimable" water.

1. In recognition of such objectives, any legislation, in fairness, should recognize those programs and systems in place, which have met or exceeded such standards and which continue to monitor and improve those systems.

2. A further consideration of new legislation should include the consideration of varying climatic conditions, state water rights laws and the crucial requirement not to destroy water in the arid regions of the United States.

Mr. Chairman:

My name is Rich Crolius. I am a Vice President of Crane Company, a leading manufacturer of building products and fluid controls. Our headquarters are in New York City.

Our largest subsidiary, CF&I Steel of Pueblo, Colorado, has asked me to bring to the attention of the committee our environmental success story. At the same time, our success has created a problem, which may not be unique to us, and which bears on these hearings.

CF&I Steel Corporation stands on the south side of the Arkansas River, in the southeast corner of the city of Pueblo. The river originates about 130 miles to the northwest of Pueblo, travels as a mountain stream through Chaffee, Fremont and Pueblo counties to Pueblo Reservoir west of the city. From that point, the Arkansas becomes a meandering plains stream through arid land eastward to the Kansas line.

In some dry seasons, the treated discharges from the city of Pueblo and CF&I represent the entire volume of the river water, which is so important for downstream municipal water supply, agricultural irrigation and minor recreational use.

Water in the Arkansas - as well as all other water in Colorado - belongs to the state. Users must have water rights and state permits, which require both quality and quantity of discharge. Arkansas water, largely from snow melt, is used over and over for a variety of needs. Water is a very precious commodity in an area of very light rainfall.

In the early 1960s, CF&I embarked on a modernization program. An important segment of that effort was - and continues to be - both air and water quality improvement. At that time, there was no Federal EPA nor were specific quality standards available. This program was

aimed at both cleaning up steel plant discharge and, also, maintaining quantity of water to downstream users.

Working with the State of Colorado (and with EPA after 1970), CF&I's water quality program took shape and by 1974, our waste water process facilities were in place. Since then, discharges back into the Arkansas River have met all state and federal standards. We have continued to monitor and improve this quality system.

Within the flow, from our treatment plant to our final river discharge, nine species of fish reside and the settling lagoons have become wildlife sanctuaries for land birds, water fowl, and small mammals.

With the CF&I discharge at present control limits, the river meets all water quality standards established for the several uses assigned by the State and Federal agencies to the Arkansas - these are municipal water supply, fishing, agriculture and recreation. We are proud of that success. Therein lies our problem.

The recent technology-based steel guidelines promulgated by the EPA in 1982 would require substantial revision to our present system. Additional technology will not improve Arkansas River quality. It will destroy, through added rapid evaporation, water which is badly needed downstream.

The best available technology defined by EPA is environmentally undesirable for the Arkansas River. We ask this committee to consider recognizing that in the instance of the Arkansas - and presumably in other steams which are clean, useful and attractive - any further technological requirement will be wasteful of resources, natural as well as material. Indeed, they may be environmentally counter-productive. Provisions should be made in the Act to exempt such situations.

Thank you for the opportunity to bring this unusual, but probably not unique situation to your attention.

THE LONG ISLAND SOUND TASKFORCE

of The Oceanic Society

December 14, 1982

The Honorable James L. Howard
Chairman
Committee on Public Works and
Transportation
2165 Rayburn House
Washington, D.C. 20515

Dear Congressman Howard:

It is my pleasure to submit to your Committee, a statement of support for Section 319 of H.R. 3282 concerning the establishment of management conferences for estuaries in need of scientific and technical assistance together with mutual cooperation from the riparian states.

The enclosed statement directs itself to two aspects: 1) the consideration of Long Island Sound as an estuary under the definition found in the Clean Water Act; and 2) having received recognition as a estuarine system, a statement of need for Long Island Sound. The first section cites existing scientific literature to document the estuarine nature of Long Island Sound. The second portion of the statement attempts to highlight the existing need for management and research on the Sound.

Since we recognize that the Committee has an interest in time as well as content, the statement is not exhaustive in its detail or scope. Should additional documentation be necessary, we will gladly gather further documentation of need from area researchers, governmental officials, and commercial users.

Thank you for this opportunity to add the enclosed statement to your consideration of Section 319 of H.R. 3282.

Respectfully Submitted,

Whitney C. Tilt

Whitney C. Tilt
President

cc: Congressman Stewart B. McKinney

Stamford Marine Center Magee Avenue Stamford, Connecticut 06902 (203) 327-9786

STATEMENT OF SUPPORT FOR SECTION 319 OF H.R. 3282
FOR LONG ISLAND SOUND

Section 319 of H.R. 3282 is important to the Long Island Sound estuary for numerous reasons. The purpose of the following statement is to attempt to qualify some of the reasons and place them in context of the ecology of Long Island Sound and the socio-economic health of the Long Island Sound region.

Before stating specific needs and rationale, it is important to understand the character of the Sound.

Though biologically a single body of water, the Sound is politically, economically, and sociologically fragmented. One important result of this fragmentation is a lack of coodinated planning, monitoring, and response. While estuaries like the Chesapeake have drawn coordinated response in addressing its problems, Long Island Sound has not, nor does the existing political system lend itself to state/local implementation of a coordinated response. A issue deemed important on one end of the Sound may be unknown at the other end even though associated impacts may threaten the entire estuary. One area's economic well-being may rely on a marine activity that another feels is totally unacceptable.

What is needed for Long Island Sound is a central coordinated planning process. The management conference proposed by Section 319 is the beginning of such a process.

This statement addresses the following:

Long Island Sound as an Estuary
Case for Research and Management Need
Additional Research Needs

LONG ISLAND SOUND AS AN ESTUARY

Long Island Sound may be regarded as an estuary under the definition of Section 104(n)(4) of the Federal Water Pollution Control Act. The following is submitted in support of this statement.

Documentation of the Sound's estuarine nature is found in Coastal and Offshore Environmental Inventory, Cape Hatteras to Nantucket Shoals published by the University of Rhode Island in 1973. The report defines the Sound as a "Type B, moderately stratified estuary." Here estuary is defined as "a semi-enclosed coastal body of water which has free connection with the open sea and within which sea water is measurably diluted with fresh water derived from land drainage (Pritchard, 1967)." In addition, a Type B estuary is defined as an estuary where "tidal mixing plays an important role in the circulation. Mixing occurs between the

upper seaward flowing layer and the higher salinity water flowing up the estuary along the bottom, thus increasing the net volume of flow." Other Type B estuaries include Narragansett Bay.

In Coastal Ecological Systems of the United States, Odum et al defines Long Island Sound as a "Medium Salinity Plankton Estuarine System." Examples of such estuaries include the Chesapeake, Narragansett, and Delaware Bays. Odum states "that the precise delimitation of the middle estuary is not possible because of the spatial and temporal variability exhibited by such components." Hence as a result of this delineation problem, the natural geological boundaries of estuaries such as the Chesapeake Bay, Narragansett Bay, and Long Island Sound should be recognized as delineating the boundary of the estuary.

Riley in Oceanography of Long Island Sound (1954) found salinity in the Sound to be the highest in the eastern end, though this area was subject to rapid and extreme freshening during periods of high flow in the Connecticut River while the western end was ordinarily 3-5ppt fresher than eastern end. The range of salinities recorded ranged between 24 and 31 ppt (parts per thousand). The salinity of ocean water is generally greater than 35 ppt.

The National Marine Fisheries Service's Environmental Baselines for Long Island Sound, 1972-73 maps the range of salinities occurring in the Sound on a seasonal basis. NMFS found surface salinity averaging between 20-22 ppt during April with the western end generally exbibiting less saline waters than the eastern end. In September, the overall surface salinities increase with an average of 24-26 ppt found throughout the Sound. Salinities along bottom are higher than those found on the surface especially during the the warm summer months.

The research cited above accounts for a majority of work done to date. Certainly it defines Long Island Sound as an estuary in the same right as the Chesapeake and Narragansett Bays.

CASE FOR RESEARCH AND MANAGEMENT NEED

The need for research and management efforts on Long Island Sound is paramount. The most comprehensive report done to date on Long Island Sound, the Long Island Sound Report conducted by the New England River Basins Commission (1975) identified the need for directed management and research efforts. The report called for the formation of a Long Island Sound Committee to oversee this management and research effort. Other reports have continued to echo this need.

A look at the political morass of the Long Island Sound region soon gives a clear indication of why comprehensive management is lacking on the Sound. Sharing some authority over Long Island Sound are: 2 EPA regions; 2 Army Corps of Engineer Division/Districts; 2 states; the U.S. Fish and Wildlife Service;

National Marine Fisheries Service; Interstate Sanitation Commission; and others. In addition, the two states have very different systems of government: Connecticut relies on a Hartford to individual town system. Some 24 towns are found directly on the Connecticut shoreline. In New York, the system operates from Albany to County seat to individual township. New York has four counties on Long Island Sound with anywhere from 16 to 37 townships/towns depending on how they are counted (please see Attachment A for listing of regional counties and towns). The U.S. Coast Guard is perhaps the only agency that views Long Island Sound as a single body of water. Parochial self interest and cross-Sound/trans-Sound disputes are more the rule than the exception.

Examples of the need for an comprehensive management/research approach are numerous. A few examples follow:

Water Quality of Long Island Sound has improved over the last 10 years, due in large part to the construction of sewage treatment plants funded by the Construction Grants Program of the Federal Water Pollution Control Act. However documentation of this improvement along with the identification of problem areas remains casual, where it is done at all. For example, no comphrehensive Sound-wide surface water quality testing is conducted outside the testing of beaches and shellfish areas for bacteria. In New York, two counties do regular testing, Westchester and Nassau, but the data are not always refined into working reports and these data are not shared on a regular basis with other portions of the Sound. The Interstate Sanitation Commission has regularly seen its budget slashed until the scope of its testing is reduced to the extreme western portion of the Sound. The result is a lack of trend analysis, nor do the monies currently spent effect any real basis for management decisions. The data that are available show some improvement in bacterial levels in western Long Island Sound but the chemical sampling' results do not demonstrate the same improvement. Dissolved oxygen levels are chronically low with a recent Interstate Sanitation Commission report concluding that no available dissolved oxygen capacity exists in western Long Island Sound and the East River during the summer months.

In addition, while advances have been made in wastewater treatment, a great deal of work is still necessary in the management and control of combined sewer overflows and sub-standard treatment (less than 85 per cent removal of suspended solids and biochemical oxygen demand). Long Island Sound water quality is also directly linked to New York City water quality via the East River. A recent New York Department of Environmental Conservation report estimated that in dry weather, the NYC wastewater treatment system discharged approximately 1,584 million gallons per day of treated wastewater, bypassed 316 mgd of sewage, 927,000 pounds of BOD, and 888,000 pounds of suspended solids. A large proportion of that load is discharged into the East River whose net flow is into Long Island Sound.

Dredging and Dredged Material Disposal has pitted Long Island versus Connecticut with Westchester and New York City being sided with Connecticut. While great strides have been made in the management of dredging and dredged material disposal, a management plan reflecting this state of the art does not yet exist for Long Island Sound. As a result of the large number of rivers found along the northern shore of the Sound, some 95% of the dredging load is centered on the north shore. Long Island objects to all open water disposal in Long Island Sound while failing to offer a feasible alternative. Law suits, political maneuvering, and poor use of "science" are part and parcel of the dredging dilemma in Long Island Sound. In addition to the political problems which hamper effective management, there remains an active dredging need that must be aligned with the need for maximum resource protection. Many of the sediments from the Sound's industrial harbors are enriched with organic and inorganic pollutants. Inproper handling and disposal could have significant impacts on the adjacent shellfish and other marine organisms and the industries dependent on them.

Commercial fisheries are of growing importance to the Sound region with oysters, hard clams, and lobster leading the fisheries market. Here again, a general lack of research and Soundwide management has resulted in impacts to the fishery and rivalry between states and opposing ends of the Sound. Currently the Sound's oyster production is excellent with the production forecast strong. The Long Island Sound oyster fetchs 30% more per bushel than its Chesapeake counterpart, yet much of the potential oyster ground in Connecticut remains closed because of chronic water pollution problems or other impacts. The movement of the "red tide" or PSP (Paralytic Shellfish Poisoning) from the north and MSX from the south are potential hazards to the industry. In 1982, the lobster fishery had its best year ever. 1983 saw that catch almost doubled. Yet the fishery had pitted potters against trawlers with a good deal of legislation recently installed. Even with good enforcement of the legislation, much data are needed for future management of the growing lobster fishery, especially if the impacts of the Maine fishery are to be avoided. Finfish are mostly important as a recreational resource. The recent discovery of the parasite *Glugea stephani* in windowpane and winter flounder is one example of the fishery research necessary. Winter flounder is one of the most important finfish species in the Sound, and preliminary findings show that this parasite appears to have a significant effect on flounder populations. Migratory and anadramous species such as the bluefish and stripped bass also have a variety of research needs in Long Island Sound.

Recreational boating is extremely important on the Sound. While exact numbers are not available, the Sound is recognized as the largest boating center in the country with up to 110,000 vessels on Long Island Sound during a sunny summer weekend. The

continual loss of marina services to residential development and non water-dependent uses; the potential loss of 100% federal funding for federally authorized channels (there are 40 in Long Island Sound and the upper East River); and the continuing conflict over the associated impacts of recreational boating (ie., impacts from dumping of heads; impacts from anti-fouling paints; "buffer zones" around marinas, etc.) all represent the need for research and management.

A recent survey conducted by the Connecticut Marine Trades Association found the Connecticut boating industry to be the cause of a minimum of $281 million worth of business activities in the state. A similar study for the New York marine trades is not available but boating is of major importance there also. However as use increases, so does the conflict and the potential impact to the estuaries natural systems.

The above are just a few examples with commercial shipping, cross-Sound ferry service, shoreline erosion, aquaculture expansion, and public access to the Sound a few more examples of the need for coordinated management and research.

ADDITIONAL RESEARCH NEEDS

In the statement above, several research needs were identified. For the most part they lie within the realm of public policy research, rather than research in the traditional sense. Examples of needed research and its applications follow. It should be recognized that this is only a brief "shopping list" and that discusssions with leading researchers in the Long Island Sound region would yield a greater number of research proposals.

Impact of heavy metal contamination of sediments to fisheries and environmental health of estuary. Many of the analyses conducted on selected harbor sediments show extremely elevated levels of numerous heavy metals ranging from zinc and copper to arsenic and cadmium. The impact of these metals along with their ability to move through the food chain is not well understood at this time.

Water dynamics and net flow of East River. As the tidal strait between the massive pollution loadings of New York harbor and Long Island Sound, the water flow dynamics of the East River are still poorly understood. A complete understanding and ability to model pollution loadings via the East River is extremely important for water quality management in the Sound.

Effects of sewage chlorination on the marine environment. Currently all sewage treatment plants in Connecticut chlorinate their sewage year round. The effects of this practice are not evaluated for Long Island Sound, but research conducted on other estuaries suggests that this practice is expensive, has no proven health benefits, and may adversely impact marine ecosystems. New

York chlorinates on a seasonal basis.

Effect of sewage effluent on Long Island Sound. More than 1.1 billion gallons of sewage effluent enters the Sound each day. This does not account for additional volume during storms, or for effluent contained in river waters entering the Sound. The assimulative capacity of the Sound, especially in the western end, is not known but proposals such as the recent 301H waiver proposals make this research extremely important.

Restoration of chronically polluted embayments is a pressing need. Many embayments in New York and Connecticut have suffered long term impact from various forms of pollution. Many of these embayments are located near population centers, but because of their degraded condition offer little to no recreational or commercial benefits. Methods directed at restoring these areas would be an important contribution to the Sound's overall benefits to the region.

208 or "non-point" pollution was a popular buzz word in past years but most efforts to date have centered on freshwater systems with little regard to its impact to the Sound, ultimately the final sink for contaminants found in freshwater watercourses. In addition, I suspect, without being able to substantiate the claim, that while water quality (aquatic and marine) has improved over the last 10 years, little additional improvement has been made recently. In fact, some degradation in specific areas may have occurred in past few years as enforcement has waned due to budget cuts and "environmental zeal" has lessened.

Expansion of aquaculture offers great commercial potential for Long Island Sound. However advances in culture techniques, definition of the legal problems (such as who has right to use of the water column), and expansion of the species cultured, all have research requirements.

The Coastal Energy Impact Program has conducted two years of analysis for the western Connecticut shoreline. To have significant impact on management and policy, this program must be expanded to other areas of the Sound. Data collected on species distribution and densities; benthic community assemblages; and hydrocarbon analyses of the sediments are all vital to a fuller understanding of the Long Island Sound ecosystem.

The above is just the beginning of the discussion on the management and research needs of Long Island Sound. The Sound has been called the "American Mediterranean" and the "Urban Sea". It ranks as one of the most populated estuaries in the United States and that association has left its impact on the physical, chemical, and biological nature of the estuary.

In February 1971, a weekend issue of Newsday announced that Long Island Sound was "dead" and stated, "the sun will rise a trembling red in the suffocated haze...[and] the Sound will lie

still against the petrochemical black beaches." The Sound is no longer "dead", though numerous areas remain chronically polluted. However since that Newsday article little to no progess has been toward the management of the estuary as a single body of water. Section 319 of H.R. 3282 offers the states of Connecticut and New York an opportunity for comprehensive management of Connecticut's only marine resource and one of New York's most potentially valuable marine resources.

Respectfully Submitted,

Whitney C. Tilt

Whitney Tilt
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Note: many of the environmental management and research issues mentioned above have been simplified for the purposes of this statement. Additional background on these issues along with the identification of other issues is available on request.

METRO
Municipality of Metropolitan Seattle
Exchange Bldg. • 821 Second Ave., Seattle, Washington 98104

September 26, 1983

Honorable Robert A. Roe
Water Resources Subcommittee of the
Committee on Public Works and
Transportation
B376 Rayburn House Office Building
Washington, D.C. 20515

Attention: Mr. Errol Tyler

Dear Representative Roe:

I have recently become aware of the testimony given by Dr. Benjamin C. Dysart, III on behalf of the National Wildlife Federation before the Water Resources Subcommittee on August 2, 1983. It is not my intention to comment on the merit of the proposals contained in his presentation. However I have noted several factual errors which I would like to correct and clarify for the subcommittee members and the record.

Water quality conditions in Puget Sound and the impacts on the Sound from municipal wastewater sources, including Metro's four primary plants, are cited frequently in the federation's testimony. This information is often inaccurate or inaccurately presented. On page 7 the metric ton loadings of zinc, copper and lead should be corrected to reflect generally accepted scientific data. Metro's 1983 Toxicant Pretreatment Planning Study (TPPS) C1 report gives the annual loading to the central basin of Puget Sound from municipal effluents as 34 metric tons (MT) of zinc; 2.5 MT of copper and 15 MT of lead. These numbers are many orders of magnitude smaller than those cited by the federation, 3,690 MT zinc, 1,958 MT copper and 3,690 MT lead. We were unable to locate the source cited by Dr. Dysart, "Trovik, 1983". I believe there may have been a typographical error and the individual cited is Solvieg Torvik a reporter for the Seattle Post-Intelligencer newspaper. I have enclosed the two articles by her which I believe Dr. Dysart was referencing.

We question the assertion that "toxic contamination" is a reason for shellfish harvesting closures. Harvesting has been closed due to bacterial contamination and red tide, not high toxicant counts. Health agencies have noted that these areas would be closed with or without treatment plants, much less with or without secondary treatment. Also to the best of our knowledge, no central basin beaches have been closed to swimming because of public health

risks due to municipal discharges. It is also our understanding that the major sources of high concentrations of organics in Commencement Bay are not related to municipal wastewater dischargers but rather to past direct industrial dumping directly into and adjacent to Commencement Bay.

Page 11 states that Metro's Richmond Beach plant's effluent "contains pollutants whose concentrations will exceed EPA's Water Quality Criteria for the protection of marine life." A review of the effluent characteristics data presented in our Richmond Beach waiver application clearly shows that following initial 100:1 dilution, the concentration of toxicants present in the discharge will all be far below the EPA acute and chronic criteria for ambient conditions. On page 13 the federation proposed that POTW effluent meet these criteria after initial mixing and contends that this is not currently the case for four of the EPA tentatively approved plants, including Richmond Beach. Obviously, for the Metro plant, the opposite is true and all criteria are met following dilution.

On Page 16 the federation quotes the Draft TER prepared by Tetratech for EPA on Metro's West Point waiver application. Based on the paragraph cited the federation concludes that there were "significant data gaps" and that EPA projected a balanced indigenous population (BIP) based on inadequate information. The section cited by the federation is one small part of a 378 page evaluation of our application by Tetratech. Any quotations from this document are solely one consultant's opinion.

In the introduction to EPA's September 1981 West Point tentative decision document, EPA explains that the TER prepared by Tetratech was prepared subject to the guidance and review of the EPA task force. On pages 16,17 and 18 (attached) of the same document, EPA explains why they concluded that "the West Point discharge will not interfere with the presense of a BIP beyond the ZID." EPA also concludes that improved solids removal in the West Point discharge and an effective toxics source control program are expected to mitigate any potential long-term discharge-related effects (page 18). Monitoring is also proposed to further examine solids deposition and benthic communities in the deep waters of the central basin in relation to solids loadings of the plant to demonstrate the discharge will not have any long-term effects. I believe that this information demonstrates EPA's decision to have been well informed and that adequate monitoring is proposed to accurately track long-term trends.

As a final comment it should be pointed out that in its definition of estuaries the federation fails to differentiate between semi-enclosed, well-flushed systems such as Puget Sound and enclosed, shallow embayment-type estuaries. Metro believes that the substantial variety of estuarine types is such that a total exclusion of all types of estuarine waters from the waiver process is arbitrary and not correlated in any way with actual quality of the receiving water.

I appreciate your careful consideration of our comments and earnestly request the record be clarified to reflect more accurate information with respect to Puget Sound and the Municipality of Metropolitan Seattle's wastewater treatment facilities. We would be pleased to make a presentation to the subcommittee on these issues at any time. Please contact me at 206-447-6591 if you would like to invite us to speak or if I can provide further clarification of our comments.

Very truly yours,

John B. Lampe
Superintendent of Water Quality

JBL:khb

cc: Dr. Benjamin C. Dysart, III
Mr. Lee White, White, Fine and Uerville
Mr. Mike Lowry
Senator Gorton
Mr. Ron Linton
Mr. John Spencer
Mr. Robert S. Burd

Source: EPA Tentative Decision Document
Analysis of the Section 301(h) Secondary Treatment
Waiver Application for Seattle, Washington West Point Plant;
"EPA Office of Marine Discharge Evaluation, September 1981"

(c) Biological Impact of Discharge [40 CFR 125.61(c)]

- BIP Beyond The ZID and Absence of Extreme Adverse Impacts Within The ZID [40 CFR 125.61(c)(1)(i) and (ii)]

An applicant must demonstrate that a balanced indigenous population (BIP) of shellfish, fish, and wildlife will exist in all areas beyond the ZID that might be affected by the proposed modified discharge. In addition, conditions within the ZID must not contribute to extreme adverse biological impacts within the ZID or contribute to adverse effects beyond the ZID.

The application included a series of eight studies conducted in the vicinity of the applicant's outfalls to evaluate the effects of primary effluent upon plankton, benthic invertebrates, macroalgae, and fish assemblages of Puget Sound. Based on an assessment of the data available in these studies as well as other studies conducted for the applicant and more general references addressing the impacts of municipal discharges on benthic communities (Pearson and Rosenberg, 1978, Word, 1979), it is concluded that the West Point discharge will not interfere with presence of a BIP beyond the ZID. The following findings are pertinent to this conclusion:

1) Phytoplankton biomass and productior measures of community function, are within the r...e of values expected for highly productive estuarine waters. Comparison of annual production for pre-discharge and post-discharge years shows no major stimulation of algal growth in the central basin following initiation of discharge.

2) Intertidal invertebrates sampled at beaches near West Point and Lincoln Park beach, a site removed from direct discharge impacts, show a similar occurrence of dominant species of bivalve molluscs and a high similarity in the communities of epifaunal (urface-dwelling) organisms. Further comparisons between the infauna (organisms dwelling within the bottom) are precluded by the inadequate sample size; however, the above results indicate the absence of adverse impacts.

3) Macroalgae sampled near West Point and other municipal discharges as well as the Lincoln Park control site show some effects related to the existing discharge such as decreased diversity and changes in growth and reproductive rate of the kelp. Density of the kelp beds indicates these

alterations are not severe. The probable cause is suspended solids loading from the discharge.

4) Demersal, or bottom-dwelling fish, in the vicinity of the West Point outfall show no significant difference in the frequency of occurrence of the 15 most common species when compared with areas distant from the discharge. Species diversity of the community is lower, most likely due to organic enrichment from the discharge; however, the magnitude of this change is not significant in view of the above finding regarding dominant species. Pelagic fish (non-bottom dwelling species) were surveyed in Central Puget Sound during February June, September, and December, 1975, with an additional survey in March 1976. The surveys consisted of acoustic transects, mid-water trawls, and beach seines to provide a quantitative assessment of the temporal and spatial distribution of pelagic fishes. A test for significnat differences in species diversity was not possible for for pelagic fishes, because the pooling of data over large geographic areas obscures site specific differences, although they do identify a general BIP for pelagic fishes in the Central Puget Sound (TER, Part B, Section 6). In addition, patterns of fish egg abundance of dominant fishes (both pelagic and demersal) collected by beach seines at West Point and at the control beach were very similar. Moreover, futher examination of the health of fish communities demonstrates that the incidence of fish tumors and parasites is actually lower in the vicinity of West Point than at Point Pully, the control site.

However, there is evidence of alterations in the benthic community in the vicinity of the discharge. [TER, Part B, Sections 6 and 7]. Benthic invertebrates, because of their relative immobility, are an important indicator of impacts from a point-source discharge. Data from both within and beyond the West Point ZID show changes in the Infaunal Trophic Index (a measure of community function that can be related to pollution), number of individuals, and species abundance when compared to reference sites. Lower sediment organic content in an area extending northwest to southeast across the discharge zone bears out the conclusion of Thom, et al., (1979) that scouring by strong currents and resulting sediment instability is are the likely cause for decreased richness and abundance of organisms in this region. Some effluent suspended solids may settle beyond this zone where an enriched community of filter-feeding invertebrates was found by Thom, et al., (1979).

A lack of replicates and inadequate sample size do not allow firm conclusions with respect to the extent of change or its cause. Although at present major perturbations are not evident, the cumulative impacts of continued discharge of solids at the current level is a matter that will require careful observation over the long-term. Improved solids removal in the West Point discharge and an effective toxics source control program are expected to mitigate these potential long-term discharge-related affects.

The application suggests that deposition in deep water habitats is a likely fate for sewage wastes (Application, Part B, Section 1, Subsection C, and Section 4, Appendix IX), and there is evidence that sewage particulates are accumulating in the deep waters of the central basin adjacent to the West Point outfall. Evidence of far-field biological perturbations are limited. Foraminifera may be used as an indicator of effects on the BIP. Studies by Harmon, et al., (1977) attributes the dominance of at least two species of foraminifera in deep waters near the outfall to the enriching influence of sewage particulates. There is no evidence of substantial adverse effects on foraminifera. However, Harmon cites sediment displacement to deep waters as a "major process immediately off West Point." Incorporation of sewage particulates into sediment systems can alter biological communities substantially through organic enrichment favoring deposit-feeding, pollution-resistant species, or through toxic effects on sensitive species (Pearson and Rosenberg, 1978). The monitoring program will examine solids deposition and benthic communities in the deep waters of the central basin in relation to the solids loading of the modified discharge to determine if the discharge will have any long-term effects.

- Additional Biological Requirements For Saline Estuarine Dischargers [40 CFR 125.61(c)(1)(iii)]

o Benthic Restriction Within ZID [40 CFR 125.61(c)(1)(iii)(A)]

Benthic populations within the ZID of the proposed modified discharge must not differ substantially from the benthic populations which exist immediately beyond the boundary of the ZID.

Data presented in the application indicate that there are no substantial biological changes within the ZID (TER, Part B, Sections 6 and 7). Data on the benthic community including Infaunal Trophic Index, number of individuals, and species abundance indicate biological modifications are not substantial. As discussed above data presented in the application and analyzed in the TER, Part B, Section 6 indicate

Pacific Northwest Jan/Feb 1983

Scannings

Poverty Bay

The muck stops here

The Samoans addressed their sewage disposal problem by building outhouses over the ocean. They were called "tidal flush toilets" because the tide was supposed to carry the effluent out into the vast Pacific and dissipate it harmlessly. But the system had its flaws. Not only did the waters become polluted, but low tides left sewage to bake on the beaches under an equatorial sun, a stunning assault on the senses.

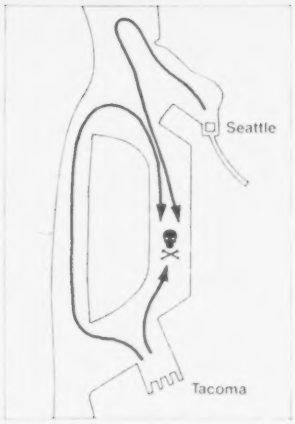
The 2 million people who use Puget Sound as a cesspool also blithely put their trust in the tides. Every day, 230 million gallons of chlorinated sewage effluent is poured into Puget Sound, most of it lacking secondary treatment. In addition, 3,690 metric tons of zinc, 1,958 metric tons of copper, and 6,789 metric tons of lead enter the sound annually.

Dumping into the sound has been tolerated on the theory that it is deep and well flushed. But recent scientific investigations into the movement of tides and currents suggest that the sound may be more prone to pollution buildup than previously thought.

Dr. Herbert C. Curl Jr., an oceanographer with the National Oceanographic and Atmospheric Administration, is overseeing the first study of overall pollution transport in the sound. Obviously, says Curl, much of what is put into the sound and stays dissolved is carried out into the Strait of Juan de Fuca. But already he has found that a good deal more material than most people have assumed is left behind in the bottom sediments.

Curl says most of the pollution ends up in the main southern basin of Puget Sound because of the way the tides move. According to him, the final resting place for a large share of those pollutants is probably Poverty Bay, east of Vashon Island, north of Tacoma's Commencement Bay and about seven miles south of Seattle's Seahurst Park, the proposed site of the Municipality of Metropolitan Seattle's (Metro's) controversial new sewage treatment facility.

As Curl explains it, fresh river water floats on top of the sound and salt water coming from outside the sound stays on the bottom. The salt water moves slowly southward while the fresh water moves northward and out of the sound. The Skagit River flows into the sound from the north and, in spite of some agricultural pollution, is relatively clean and dilutes more contaminated sediments. The main polluter is the Duwamish River, which carries not only much of Seattle's sewage, but also a host of metals and chemicals from the industries at the mouth of the river.



Pollutants are carried by deep currents to their final resting place in Poverty Bay.

From Seattle, Curl says, the pollutants piggyback onto soil or biological particles, hitching a ride into the central basin's main channel. There, by leaps or crawls, days or months, depending on storms, tides and currents, the pollutants travel south down to Poverty Bay and settle into the sediments.

Meanwhile, pollutants near Tacoma and Sinclair Inlet are picked up by currents and take a fast ride north on the west side of Vashon Island, through Colvos Passage. They may circle the island twice (the current always flows north there at all depths) before they come to rest in Poverty Bay, says Curl.

The "worst actor" coming into the sound is lead, according to Curl. Lead comes from cars and industrial sources, and there is more of it at the mouth of the Duwamish than in Tacoma's infamous Commencement Bay. Every time the Duwamish is dredged, lead-loaded sediments are carried off by barge to Four Mile Rock off Magnolia Bluff. There they are dropped off a 300-foot cliff into the main channel which, Curl says, takes them on a leisurely trip south.

Metro is conducting an $8 million study of the effects of its effluents on the sound, but the scope of the study is limited to what Metro defines as its sphere of sewage influence — the areas around its own outfall pipes.

While Curl praises Metro's efforts, he also says that the fragmented approaches being taken to the problem by various agencies pose problems. As he puts it, "Water doesn't know any political boundaries."

Solveig Torsk

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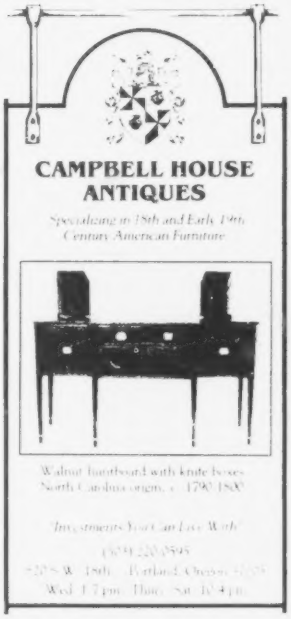

How much pollution can Puget Sound bear?

By Solveig Torvik
PI Reporter

PI 5-2-82 B4

Your rusty car is sitting in the driveway leaking oil from the crankcase. You've just put a new chain link fence around your yard, and you've spilled a little weed killer on your sidewalk.

Then it starts to rain.

The oil from your car, mixed with particles of rust, seeps down the driveway, into the street and down the storm sewer. Zinc washes off your fence and into the sewer. The weed killer runs down the sidewalk into the sewer.

If your neighborhood is on a separated storm sewer system, as is the case with half of Metro's customers, the zinc, oil and weed killer will travel directly into Puget Sound untreated.

The zinc at first will fall into the bottom sediments close to shore near Elliott Bay. The oil and weed killer are likely to travel farther, following the currents south.

But the zinc may follow at a much slower pace, as the high tides stir up the bottom and heave the pollutants south.

Eventually — days to years later — they all are likely to arrive in Poverty Bay east of Vashon Island.

There they will come to rest, scientists think, along with many of the pollutants that enter Puget Sound from the area between Tacoma and Seattle's West Point.

****

Off Port Townsend, above what is called the Admiralty Sill, the scientists aboard the gleaming white research ship McArthur are standing by on the fantail while a large "rosette," clasping empty metal sample bottles, is lowered into the water by a hydraulic winch. Electronic sensors connect the contraption to a computer in the chart room.

Scientists are looking into the seemingly clean waters of Puget Sound for traces of your crankcase oil, zinc, and a plethora of other pollutants from industrial sources that have dribbled unnoticed into the sound for decades.

They want to know where this pollution comes from and where it goes. And they want to know how much of it the sound can stand before it is irreparably damaged.

Herbert C. Curl, an oceanographer with the National Oceanographic and Atmospheric Administration, is heading a team of seven scientists that is taking the first overall look at pollution transport in the sound.

"The long term question we're asking is: As population grows and industry increases, what's going to be the effect on these bottom sediments? There's no reason to think more water will flow into the sound (to clean it), but we do know that the pollution load will increase," he says.

Curl's colleague in NOAA, Dr. Donald Malins, has found high incidences of diseased bottomfish near the sound's urban shorelines where toxic chemicals and heavy metals are most prevalent. That's one red flag that something is going wrong in the sound.

The prolonged red tides that have made shellfish from some areas in the sound inedible may be another, says Curl.

A large share of the pollutants dumped into Puget Sound end up in Poverty Bay, according to a National Oceanographic and Atmospheric Administration study

NOAA research on the East Coast has led to suspicions that an increase in trace metals is likely to suppress the growth of a plankton called diatomsone. This allows another plankton called dinoflagallates, which causes red tides, to flourish.

"I think it's a good hypothesis," says Curl, adding that if the theory proves true, the biologic cycle involved means that "red tide leads to still more red tide."

Controversy over how well the sound cleans itself has led to Curl's study. Some people assume that the sound cleans itself regularly by discharging pollutants out into the Pacific through the Strait of Juan de Fuca. Others fear pollution is trapped in the sound.

"Clearly the stuff is going somewhere," says Curl. Otherwise, Puget Sound would look like the muddy Mississippi River.

But southern Puget Sound is "not as well flushed as we thought at one time," he adds.

While some pollution does go out through the strait, Curl says, "We think a lot of it is retained in the sound." How much is part of what he's trying to discover by studying the movement of fresh and salt water currents and the influence of river deposits. He has been at it two years already and expects to spend three more years and a total of $3.5 million before the answers are in.

Curl's study is focusing on what happens between the Admiralty Sill near Port Townsend and the Narrows Sill at the Tacoma Narrows. These two shallow areas strongly influence the passage of water in the sound.

The Admiralty Sill, under the route of the Keystone Ferry, is the only place on the sound where salt water and fresh water mix all the way to the bottom.

Curl says that what happens in between the Admiralty and the Narrows sills will determine how well Puget Sound survives the onslaught of chemical pollution.

He believes pollution discharge should be kept in the north as much as possible because there the circula-

pg. " How much pollution can Puget Sound bear" Cont'd

STAFF PHOTO CARY W. TOLMAN/P-I PHOTO

Herbert C. Curl, a NOAA oceanographer heading the first team to study the movement of pollutants in Puget Sound

tion is better and pollutants are more apt to be diluted by clean rivers. The Skagit, the major cleansing force in the sound, not only dilutes chemical pollutants but also buries them under soil deposits.

The farther south you go, however, the more polluted the bottom is because the curents carry urban pollution in that direction and the influence of the Skagit is not as pronounced. The levels of lead, zinc, copper and cadmium increase, Curl says.

Unlike the Skagit, the Duwamish River desposits a heavy load of pollutants into the sound.

The metals brought into the sound by the Duwamish never decompose and some are apt to travel with the current under certain chemical conditions.

"Potentially the worst actor now coming into the sound is lead," says Curl. "There is a much higher concentration of lead in the mouth of the Duwamish than in Commencement Bay." (Commencement Bay is one of the top ten most polluted places in the nation, according to the Environmental Protection Agency.) The lead at the mouth of the Duwamish, Curl adds, probably comes from Harbor Island industries.

Lead harms the central nervous system of humans and fish. He predicts that an increase in lead levels will cause the fish to behave abnormally and that fish populations may decline.

One problematic source of pollution in the sound is Metro's chlorinated sewage. "You're damned if you do and you're damned if you don't" is the way Curl puts it.

While the treatment "tends to produce pretty clean effluent," he says "you end up with all kinds of bad actors" such as polychlorinated butadiene which is both a carcinogen and a toxin.

He thinks the sewage should be treated with ultraviolet light.

North for sewage

And he's learned enough about the sound's circulation of pollutants to say that all things like expense being equal, Metro's proposed Seahurst outfall should be moved north. "I'd go north to West Point," he says, where there would be maximum dilution.

He also notes wryly that Metro "made its decision before doing their research" on whether the location at Seahurst, which is just north of Poverty Bay, would harm the environment more than some other location.

In the small lab aboard the McArthur, oceanographer Sharon Walker uses a computer to tally the number and size of particles in samples of sound water. The particles — soil or biological forms — are important because the chemical pollutants piggy-back onto them and hitch a ride around the sound.

As the ship works its way south, the particle count registered on her computer rises.

In the chart room above Walker, meanwhile, another computer instantly reads out the temperature and salinity of the water in the sample bottles attached to the rosette. This tells the scientists the changes in the density of the water, how well it mixes vertically, how many layers of water there are and in which direction the layers are moving. All this helps predict which way pollution will travel, says Curl.

The fresh water entering the sound from rivers and runoff stays on the surface and the salt water remains on the bottom. Depending on the tide, the salt water will run in one direction and the fresh water in another.

Curl is tracking the movement of salt and fresh water to discover where pollution-bearing particles will be deposited.

Curl says that up to now, agencies have tried to treat "single point sources" in their fight against pollution. But he argues that the Puget Sound Council of Governments should take a sound-wide view and worry about the total effect of all the pollutants that are loading the sound. As the Poverty Bay example illustrates, pollution often moves from one community to another heedless of jurisdictional boundaries.

Poverty Bay receives "the highest net deposition" of pollutants because of the way the currents work, says Curl.

On the west side of Vashon Island in Colves Passage, the current always travels north at all depths, unlike other places in the sound. But it moves so fast that very little is deposited there, and the water is carried in a circle around the island. Pollutants from Tacoma and Sinclair Inlet are likely to make a couple of trips around the island before coming to rest in Poverty Bay on the island's east side, he says.

Crude less damaging

Oil spills on the sound, the bugaboo of environmentalists, would do less damage if crude oil rather than gasoline or diesel oil number 2 were spilled, he says. This is because crude oil is still in its "natural" state and not toxic.

A surprising finding of a NOAA study on oil spills in the Strait of Juan de Fuca was that the surface water didn't always move out toward the ocean but instead headed back into the sound, he says. A crude oil spill, however, would be "catastrophic" for birds on Protection Island, Curl adds.

And one near Seattle would move in large circles and eventually paint the beaches on both sides of the sound, he says.

Oil company spokesmen have made the argument that oil spills in a contained area such as the sound are easier to mop up than one on the open ocean, but Curl shakes his head.

"I don't know of any major oil spill that has ever been mopped up."

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TESTIMONY OF
THE HONORABLE
STEWART B. MCKINNEY

HEARING BEFORE
THE COMMITTEE ON PUBLIC WORKS
AND TRANSPORTATION

ON

AMENDMENTS TO THE
CLEAN WATER ACT

DECEMBER 16, 1983

Introduction

I wish to thank you, Mr. Chairman, and the members of the committee for this opportunity to present testimony concerning Section 319 of the Water Quality Renewal Act. I am sure we agree that revising and strengthening the Clean Water Act is an economic and environmental priority; and that through compromise and creativity effective regulations will be conceived and implemented. I commend the committee for their tireless efforts in this regard.

Today I submit basic scientific evidence which will confirm Long Island Sound's estuary status and outline the need for further research and pollution abatement measures. Widely recognized as one of our nation's largest boating centers, Long Island Sound is unfortunately a victim of human carelessness and industrial encroachment. However, I am confident that Congress will recognize Long Island Sound's recreational and commercial value and protect the integrity of its waters by including it under Section 319 of the Water Quality Renewal Act.

Connecticut and New Yorks' Urban Estuary

According to the National Oceanic and Atmospheric Administration (NOAA), Long Island Sound is a long, narrow and shallow estuary located between New York and Connecticut. Ocean water flows in and out of the sound through the opening in the eastern end and fresh water, entering the sound along the Connecticut coast, dilutes the seawater. The major contributor of fresh water is the Connecticut River, which accounts for nearly 80% of the fresh water supply.

Section 319 of H.R. 3282, the Water Quality Renewal Act, would require that in instances of interstate sourced estuary pollution, the Environmental Protection Agency (EPA) must convene a management conference to formulate a comprehensive water quality restoration plan. For the purposes of this act, an estuary is defined as it is by the Clean Water Act of 1972: "All or part of a river or stream or other body of water having an unimpaired natural connection with the open sea in which sea water is measurably diluted by fresh water." Clearly, under this definition the Sound is a large estuary; estuarine properties are also found in the many harbors and river mouths of the sound.

Surface water salinity at the eastern end of the sound known as the "Race" is approximately 30 parts salt per 1000 parts water. At Stamford, near the western end, the salinity decreases to about 26 parts per 1000. Since salt water has a higher density than fresh water, the surface water is typically less saline than the water near the bottom. The saline-laden bottom water flows westward and under the fresh water into the sound, while the less saline surface water flows eastward into the open sea. This characteristic is known as estuarine circulation and it occurs during both ebb and flow tides.

Eutrophication

According to the most recent sound-wide data compiled by the National Oceanic and Atmospheric Administration, phosphate concentrations in Long Island Sound doubled between 1950 and 1970, while nitrogen levels also increased. One potentially dangerous effect of an increase in the phosphate and nitrogen levels of an aquatic system is over-enrichment -- eutrophication. This phenomenon could cause a significant reduction in the aquatic life of a system and, if remedial action is not taken, render it completely lifeless. Full-scale eutrophication of Long Island

Sound would be a major tragedy for both Connecticut and New York. It must be avoided at all costs. Let me explain.

An aquatic system free from pollutants remains at a point of homeostatic equilibrium, it is self-adjusting and self-regulating. Each of its components -- primary producers (algae), primary consumers (fish), secondary consumers (fish or birds) and decomposers (bacteria) -- interact and the system achieves a period of long-term stable growth. These interactions (trophic levels) produce waste which is broken down by bacteria. The system is essentially closed because the decomposition process produces substances that are attractive to algae. However, an aquatic system is scientifically known as an open-system because an external source of energy -- sunlight -- is primarily responsible for algae growth through photosynthesis.

Phosphate and nitrogen concentration increases result in a stimulation of algae growth and a subsequent buildup of surface algae. Unable to absorb sunlight to photosynthesize, the bottom layers of algae begin to die off. As this occurs, bacteria begins to decompose the dead algae. However, since decomposition is dependent on oxygen and the overall system is receiving less sunlight and is able to manufacture less oxygen, the aquatic system becomes over-enriched. Bacteria, struggling to decompose

the algae, depletes the system's oxygen supply. Aquatic life begins to die off at a tremendous rate.

Although eutrophication is increasing in Long Island Sound, it is not too late to implement corrective measures and defuse the dangerous situation. Phosphate and nitrogen contaminants entering the Sound from detergents and fertilizer run-off, respectively, must be reduced if we are to avoid full-scale eutrophication. Unfortunately, contaminant studies in Long Island Sound are infrequent and too brief to be conclusive. What is urgently needed is a comprehensive pollution monitoring program. Inclusion of Long Island Sound under Section 319 of the Water Quality Renewal Act would establish such a program.

Trace Metals

A 1972 study conducted by the National Marine Fisheries Service of 13 trace metal concentrations in Long Island Sound (the latest Sound-wide review of trace metals) revealed extremely diverse distributional patterns. Of the 13 metals tested only five had similiar patterns: chromium, copper, lead, zinc and nickel. These five had their highest concentrations in the extreme western end of the sound, while most of the others -- antimony, cadmium,

cobalt, silver, mercury, selenium and scandium -- lacked uniformity in their distributional patterns. Manganese, however, was found to have high concentrations in both the eastern and western end of the sound.

The determination of trace metal concentrations is important because high levels could result in the contamination of marine life. However, adequate information-gathering techniques are not employed in Long Island Sound. Connecticut only tests beaches and shellfish areas, while New York, Nassau and Westchester counties conduct periodic tests of their harbors, but the data compiled is not always distilled into practical reports and shared with interested organizations. Moreover, no sound-wide surface water pollution monitoring is conducted at all.

Long Island Sound is a valuable resource to both Connecticut and New York. Considered by many to be the finest recreational boating area in the United States, the Sound is also a source of livelihood for innumerable fishermen and lobstermen. It must be protected by careful management and scientific review. Occasional trace metal studies do not satisfy this requirement.

Conclusion

On any sunny summer weekend more than 110,000 commercial and recreational vessels dot Long Island Sound. Millions of Americans visit the sound each year; and if its waters are protected, millions more will utilize this urban estuary.

Perhaps the best known example of an interstate estuary in trouble is the Chesapeake Bay. Bordered by Maryland, Pennsylvania, Virginia and the District of Columbia, the bay has long been a subject of jurisdictional controversy. However, these three states and the District, with technical and financial assistance from the U.S. Environmental Protection Agency (EPA), have agreed to put self-interest aside and cooperate in repairing the bay's damaged ecosystem. Long Island Sound's inclusion in the estuaries provision of the Water Quality Renewal Act would ensure similiar EPA assistance for both Connecticut and New York. As is evident by the on-going Chesapeake Bay restoration project, it is possible for jurisdictional conflicts to be resolved for a mutual interest.

I therefore urge the committee to recognize the critical need for an effective pollution monitoring program in Long Island Sound. I think I speak for New Yorkers, citizens of Connecticut, as well as for all Americans, when I state that the integrity of our nation's water resources must be protected. The decisions we make today may not affect us directly, but future generations will either pay the cost of our mistakes, or reap the benefits of our achievements.

HENRY W. MAIER
MAYOR

OFFICE OF THE MAYOR
MILWAUKEE

December 6, 1983

The Honorable Robert A. Roe
Chairman
Water Resources Subcommittee
Public Works and Transportation Committee
U.S. House of Representatives
Room B376, Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Roe:

I would like to submit the following comments on reauthorization of the Federal Water Pollution Control Act of 1972. These comments should be included as part of the record for the reauthorization created as a result of public hearings recently completed on this matter.

I would also request that if future hearings are scheduled prior to mark-up of amendments to the Federal Water Pollution Control Act that I be allowed to personally elaborate on these comments before your honorable committee.

Please consider the following comments as submitted on behalf of myself, the City of Milwaukee and the United States Conference of Mayors.

1. Non-Point Pollution Control

We are in general agreement with the principles enunciated in H.R. 4037 recently introduced by Representative Oberstar. We agree that non-point pollution represents a significant obstacle to achievement of water quality goals proclaimed in the 1972 law. In the rivers and streams which flow through Milwaukee, we have identified, and are in the process of identifying, the precise stream loadings due to non-point source pollution. Our preliminary studies show that some fifty percent or more of all pollutant loadings are the result of non-point pollution loadings occurring upstream from the jurisdictional boundaries of the City of Milwaukee.

In our opinion, the provisions of H.R. 4037 do not go far enough in requiring that non-point sources of pollution control be addressed at a rate that assures that our significant investment in point source pollution control will realize the water quality benefits that should be attainable given an investment of such magnitude. Milwaukee will invest some $1.7 billion in current dollars over the next decade or so to meet secondary treatment and point source requirements of the law. This investment, which covers treatment

plant expansion and upgrading, rehabilitation and expansion of our interceptor sewer system, including treatment of wet weather overflows from combined storm and sanitary sewers, is proceeding under the auspices of a consent degree entered into in 1977 between Milwaukee and the State of Wisconsin Department of Natural Resources. Milwaukee has, and is willing, to proceed in all good faith to meet the requirements of the Federal Water Pollution Control Act. In turn, we ask that the Congress address our concerns in the area of non-point source control to assure that our efforts do not result in the municipal folly of our time.

In my opinion, the best way to assure that non-point improvements are made commensurate with point source efforts is to require that non-point efforts be carried out on a mandatory basis. While recognizing the technological and institutional improvements necessary to implement non-point source controls are in many ways more complicated--though costing far less dollars--than point source controls, I firmly believe that mandatory efforts will be necessary to protect the massive investment by the public and private sectors in meeting water quality requirements and in achieving the secondary treatment requirements of the law.

2. Construction Grant Funding

We endorse the provisions of H.R. 3282 which would increase the spending authorization for the construction grants program. We are in substantial agreement with those that have previously testified that current authorization levels are sorely inadequate to meet the time deadlines required under the federal law.

We further urge that the Congress review its commitment to local units of government to assure that enforcement practices are tied to realistic levels of funding under the construction grants program. In this regard we would also ask that the Congress review the precipitous drop in the federal share under the construction grants program in light of the commitment made to local government in 1972.

3. Enforcement

We would recommend that the National Pollution Elimination Discharge System established under Section 402 of the 1972 law be modified to allow for inclusion of factors other than those currently considered. Possible factors would include:

- status of Section 208 plans including implementation of best management practices identified under such plans;

- federal, state and local funding commitments and compliance schedules necessary to realistic achievement of water quality goals and protection of public health;

- suspension of mandatory deadlines in those cases where compliance can be demonstrated as impossible to achieve within the deadlines established by the Congress.

In this regard, Mr. Chairman, we would ask that the current proposals to extend the length of a discharge permit from a five to ten year period be rejected in those instances where consistent compliance cannot be achieved within the time allotted under the provisions of a properly issued permit.

In these cases, primarily in major metropolitan areas, we would recommend that permits be predicated upon the progress expected to occur during the life of the permit. Permits issued under this exception should contain enforceable compliance schedules which are to be met during the life of the permit and should be subject to the same legal and procedural safeguards as those currently contained in Section 402.

This recommendation should not be regarded as a turning away from the goals of the Act but rather as a way of insuring that maximum progress is made against those goals even in cases where the magnitude of the task at hand requires a long term sustained effort. The issuance of discharge permits under this proposal could and should be coordinated with the provisions of the separate track funding proposal suggested by the Association of Metropolitan Sewerage Agencies (AMSA). This would integrate the requirements of Titles II, III, and IV in a manner that has been sorely lacking since passage of the original law in 1972.

We believe that permits issued in this manner can be a more effective tool for assuring that maximum progress is made based on the flexible requirements of negotiated compliance schedules which recognize the systemic relationships of sewerage systems in major metropolitan areas. For example, it may make common sense to spend resources and time on the improvement of sewer systems prior to the construction of treatment facilities to assure the maximum return on total investment in the system. We disagree with the fixation that has been placed on the construction of new waste treatment plants without regard to contributions from other point and non-point source discharges which can negate the water quality benefit of treatment plant investment. In this sense we agree with the suggestion of AMSA that comprehensive facilities implementation plans provide the basis for the development of multi-year project schedules.

4. Common Law

We would strongly urge the Committee to resist any and all efforts to overturn the decision of the United States Supreme Court in Illinois v. Milwaukee II. Litigation of this nature only serves to restrain legitimate efforts to attain water quality goals by placing at risk the massive investment necessary to protect our water resources. The Committee has held hearings on this matter and therefore I will simply associate myself with the testimony presented before the Committee on this matter on July 29, 1982 by counsel for Milwaukee, Mr. Richard Cutler, without reiterating the legal, political, technical and economic arguments contained therein.

One additional point can be made on this issue, however, regarding the adequacy of the judiciary to deal with controversies such as those presented in Illinois v. Milwaukee. With the growing body of information on all environ-

mental issues, be they germane to water, air, toxic substances, hazardous wastes, it may prove necessary to establish special environmental courts charged with the responsibility of overseeing controversies generated by the increasing complexity of environmental law. If "safety nets" are necessary for the protection of the rights of individuals and the environment, they should be specifically designed to assure that the kind of legal "overkill" that occurred in Milwaukee II would not be repeated.

5. Pretreatment

We are aware of the difficulties implicit in this issue and of the recent testimony of Administrator Ruckelshaus in which he rejected a more flexible approach than the current system which is based on national categorical standards. Local officials throughout the United States are seriously committed to the basic objectives of pretreatment. We do believe, however, that the imposition of federal categorical standards without regard to the administrative and economic burdens imposed belittles the competency and commitment of those charged with basic responsibilities in this crucial area. Therefore we would ask that a more flexible approach be developed which would recognize those local efforts which have proceeded in good faith in face of a substantial lack of national direction.

In closing, Mr. Chairman, I would emphasize that the Federal Water Pollution Control Act of 1972 is sound and comprehensive legislation. What is suggested above would not, in my opinion, require more than minor modifications to the law as it stands today.

I hope my comments are constructive to your deliberations and would ask that I be allowed the opportunity to elaborate on these concerns if additional hearings are scheduled after the first of the year.

With all best wishes, I remain,

Sincerely,

Henry W. Maier

HENRY W. MAIER
Mayor

cc: All Members,
Sub-Committee on Water Resources

National Environmental Health Association

[illegible]
Denver, CO 80203
Phone [illegible]

RECEIVED
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OFFICE OF JAMES J. HOWARD

Respond to:

Phil B. Kirkwood, Jr., M.S., R.S.
President, NEHA
5233 Birchwood Way
Lansing, Michigan 48917

November 15, 1983

The Honorable James J. Howard
Chairman, House Public Works
and Transportation Committee
U.S. House of Representatives
2165 Rayburn
House Office Building
Washington, DC 20515

Dear Congressman Howard:

The National Environmental Health Association is a professional organization with over 4,000 members representing individuals from government, industry, academia, and the military who are employed in environmental health related positions throughout our country. I am pleased to have the opportunity to submit to you our association's concerns relative to the Clean Water Act. NEHA believes that the Act has been successful in maintaining and improving the nation's waters and protecting the health and welfare. We also believe that much can be done to improve the Act's effectiveness through legislative amendments and revised administrative policies.

Therefore, I ask that you take a moment to review our considerations and recommendations which are listed on the attached position paper and to consider them during forthcoming deliberations.

Kind personal regards,

Phil B. Kirkwood Jr.

Phil B. Kirkwood, Jr., R.S.
President

National Environmental Health Association

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Phone (303) 861-9090

NEHA POSITION PAPER ON
THE CLEAN WATER ACT

The National Environmental Health Association (NEHA) is this nation's largest association of environmental health professionals concerned about the quality of our country's environment. We support the continuation of a strong federal Clean Water Act. It is the Association's position that strong water pollution control legislation is essential to the nation's dual protection of the public health and welfare. We view this commitment as inseparable.

While NEHA believes the Act has been successful in maintaining and improving the nation's waters and protecting health and welfare, we recognize that much can be done to improve the Act's effectiveness through legislative amendments and administrative policies enforced by the U.S. Environmental Protection Agency (EPA). It is in this spirit that the following recommendations are made.

I. DECLARATION OF GOALS AND POLICY

Section 101(a) of the Clean Water Act declares the Act's objective "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." To achieve this objective the Act declares two national goals: (1) the elimination of pollutant discharges into navigable waters by 1985, and (2) wherever attainable, "fishable and swimmable" waters by July 1, 1983. Section 101(a)(4) outlines a national policy that Federal financial assistance be provided to construct publicly operated treatment works (POTW).

Recommendations:

1. Delete reference to "1985" in the goal to eliminate pollutant discharges.

2. Change the date "July 1, 1983" to July 1, 1990, as it refers to "fishable and swimmable" waters.

   Rationale: NEHA supports the goals of "zero discharge" and "fishable and swimmable" waters but believes that even under the most optimal circumstances the goals as stated will not be achieved. The pursuit of unachievable goals greatly weakens the Act's credibility, while undermining the case of its most ardent supporters.

3. Delete reference to "financial" in the policy statement as it appears in Section 101(a)(4).

Rationale: Since 1972, more than $37 billion has been spent on the construction of POTWs. EPA now estimates that another $118 billion may be needed to complete the task. Considering the meager gains in water quality that have resulted from such extraordinary expenditures and the need to establish self-sufficiency on the part of municipalities for construction and maintenance of wastwater facilities, NEHA does not see the continual infusion of federal dollars as a long-term solution to the problem. Instead, EPA should assist states and municipalities in developing credible local efforts that ultimately lead to relative financial independence.

II. GRANTS FOR CONSTRUCTION OF TREATMENT WORKS

A major part of Title II of the Clean Water Act calls for federal financial assistance to states for the construction of POTWs. Amendments in 1981 reduced the federal share of grants to states and tightened up the eligibility requirements.

Recommendations:

1. Continue to gradually reduce the federal share of dollars earmarked for the construction of POTWs over the next several years with a scheduled phase-out in seven to ten years.

2. Encourage and assist states and local governments in developing self-sustaining mechanisms to ensure treatment works construction maintenance, expansion, and replacement without reliance on federal grants.

Rationale: For reasons stated earlier, NEHA believes that the massive infusion of federal dollars for the construction of municipal treatment works has proven to be largely inefficient and ineffective. This does not imply that municipal wastewater treatment is not important. NEHA clearly recognizes the relationship of improperly treated municipal wastes to disease transmission and adamantly supports the high level treatment of wastewater effluents. We object, however, to what is widely recognized as a short-term solution to an on-going problem. As an alternative, NEHA urges Congress to support amendments that encourage financing mechanisms not dependent on shrinking federal dollars.

We also presume that along with an increase in local financial responsibility we will witness a corresponding decrease in federal bureaucratic obstacles that have hindered local water pollution control efforts. Our hope is to see effective local programs that get this job done.

III. INNOVATIVE AND ALTERNATIVE TECHNOLOGY

The Act in its 1977 amendments clearly sought to encourage the use of innovative and alternative methods of wastewater treatment. To this end, various financial incentives were provided. However, in many states funds went unused because of an unclear concept of what constituted innovative technology and because of the perceived risks involved in the development of unproven methods.

Recommendations:

1. Clarify the definition of innovative technology and provide guidelines for its development.

2. Give states more flexibility in determining the priority assigned to innovative and alternative projects in relation to more conventional treatment technologies.

   Rationale: NEHA encourages the development of technologies that conserve resources and reduce costs as long as the public health implications of such technologies have been adequately studied and monitored. States should not encourage the development of systems that have been inadequately evaluated.

IV. NONPOINT SOURCE POLLUTION

Section 208 of the Act deals with the control of nonpoint sources of water pollution as part of an overall management approach to areawide pollution abatement. In many ways, Section 208 is the very backbone of the Act tying together the various provisions.

Recommendations:

1. Continue to support the implementation 208 plans at a level consistent with their importance to the overall water pollution control effort.

2. Increase support for the development of techniques to control nonpoint sources of water pollution, including rigorous enforcement of "best management practices."

   Rationale: Implementation of 208 planning recommendations has been sluggish. Nevertheless, these plans are central to a coordinated, long-term approach to regional water pollution control. NEHA encourages the development of incentives and the provision of technical assistance to promote the implementation of 208 plans. NEHA also recognizes that nonpoint sources of pollution may contribute up to 50 per cent or more of the pollution in a body of water. Therefore, if the objectives of the Act are to be fully realized, NEHA believes nonpoint source pollution control must be emphasized to a point equal to that applied to municipal and industrial point source discharges

V. COMPLIANCE DEADLINES

Section 301 of the Act sets compliance deadlines for municipal and industrial dischargers as a step toward achieving the Act's objectives.

Recommendations:

1. Extend the deadline for achievement of BAT and BCT by industries to three years following the establishment of an applicable effluent guideline but no later than July 1, 1987. (EPA is thus expected to have all pre-treatment standards promulgated by July 1, 1984 to provide industry with sufficient lead time to meet compliance deadlines.)

2. Maintain the current standards for municipal dischargers but allow waivers on a case-by-case basis where substantial proof can be shown that achievement of a compliance deadline could not be met due to circumstances beyond the control of the municipal facility.

   Rationale: NEHA believes that compliance deadlines are legally binding and must be met if the Act is to achieve its goals. At the same time, we understand that deadlines sometimes cannot be met due to circumstances beyond the control of the affected parties. Such is the case for municipalities that did not receive promised federal funds to complete projects that would upgrade their facilities or industries where no toxic limitations have been promulgated despite advancing compliance deadlines. Penalties in these situations are not constructive and do not advance the attainment of the overall goals of this important public health legislation.

VI EFFLUENT STANDARDS VS. WATER-QUALITY STANDARDS

The Clean Water Act like its predecessor, the Federal Water Pollution Control Act Amendments of 1972, emphasizes an "effluent standards" approach to water pollution control over a "water-quality standards" approach. Many critics of the Act have suggested that the "water-quality standards" approach should be emphasized.

Recommendations:

1. Preserve the importance and dominance of the technology-based effluent standards as the primary approach to water pollution control.

2. Continue to see water quality standards in a contextual but supportive role.

   Rationale: Pre-1972 water quality legislation emphasized a water-quality standards approach to pollution control. This legislation was largely ineffective because of the difficulty of proving a particular discharger caused an adverse impact. Water quality standards make sense conceptually and philosophically but are difficult to enforce. Post-1972 water pollution legislation has emphasized technology-based effluent standards. NEHA believes these standards are more readily enforced and tend to promote cost effective technological solutions to water pollution control. Our second recommendation however, is just as important. Treatment for treatment's sake does nothing for the Act but does bring about unnecessary costs that cannot be justified. Thus, NEHA supports maintaining a water quality dimension to the nation's control approach. Accordingly if a discharger can demonstrate that water quality objectives will be achieved with treatment levels less stringent than those applicable, the discharger should be regarded as having met his obligation under this law.

VII TOXICS AND PRETREATMENT

Section 307 of the Clean Water Act requires EPA to develop effluent limitations for those toxic pollutants mandated by the 1976 NRDC Consent Decree. It also requires that pretreatment standards be set for pollutants discharged into POTW.

Recommendations:

1. Maintain current emphasis on developing toxic pollutant effluent limitations in accordance with Section 307.

2. Allow municipalities to develop local pretreatment programs in lieu of enforcing federal categorical standards if the POTW meets all applicable permit requirements, has an in-place monitoring program to detect incoming pollutants, and has the resources to carry out the program.

Rationale: NEHA believes that toxic pollutants constitute a major health hazard and should be carefully controlled to prevent accumulation in ecosystems and man. It does not recommend easing of the 1976 Consent Decree as adopted in the 1977 amendments.

NEHA agrees with critics that the controversial pretreatment program has generally been unworkable, complex, confusing and costly. We believe that a large part of the problem can be traced to the attempt to apply national categorical standards to local situations. Thus (consistent with our recommendation regarding local financing and control of POTWs.) NEHA supports giving the local jurisdiction authority to promulgate and manage pre-treatment programs so long as the above noted conditions are met. Presumably so long as permit stipulations are met, the local POTW should be allowed to do what has to be done to insure that influents to the plant are of an acceptable nature.

VIII NPDES PERMITS

The heart of the regulatory program for point source pollution control is the National Pollutant Discharge Elimination System mandated in Section 402 of the Clean Water Act.

Recommendations:

1. Extend the NPDES permit term from five to ten years.

2. Delegate partial program approval for issuance of NPDES permits to qualified states.

3. Upgrade data collection and processing procedures.

Rationale: Critics have charged that the NPDES program is near a state of collapse. While not as pessimistic, NEHA believes that a ten year renewal cycle for permits, delegation of partial NPDES program approval to states, and efforts to streamline data analysis will ease the burden of NPDES program management by EPA. Moreover, it should result in a more effective and credible pollution control program.

IX WETLANDS PROTECTION

Section 404 of the Clean Water ACt has been heralded as a wetlands protection measure. This important section has been the center of controversy, however, ever since the 1972 amendments were passed.

Recommendations:

1. Assign responsibility for overall administration of the dredge and fill materials permit program to EPA.

2. Assign increased responsibility for enforcement to the states.

   Rationale: Many of the problems with implementation and enforcement of Section 404 stem from the Army Corps of Engineers' administration of the program. NEHA believes that the program could be better administered by EPA because of the Corps' conflicting interests in water resources development. NEHA also feels that wherever feasible states should be delegated responsibilities for enforcement of this program to ease burdens on the EPA.

GENERAL RECOMMENDATIONS

To further enhance the effectiveness of the Act's implementation and enforcement by EPA, NEHA makes the following general recommendations:

1. Institute a system of assessing civil penalties of up to $10,000 per day for clear and well documented violations of the Act.

2. Provide stiff criminal penalties, including imprisonment, for individuals or corporations that knowingly and willfully violate regulations so as to threaten the public's health.

3. Delegate authority for implementation of the Act's provisions to the states wherever feasible but only after the states have satisfied EPA that they have the resources and commitment to follow through.

4. Provide sufficient funding to EPA, the states, and local government commensurate with implementation and enforcement responsibilities.

5. Where applicable, the appropriate linkages with other important environmental legislation such as the Safe Drinking Water Act and the Resource Conservation Recovery Act should be constructed so as to avoid potential regulatory conflict.

JAMES L. OBERSTAR
8TH DISTRICT, MINNESOTA

COMMITTEES:
PUBLIC WORKS AND TRANSPORTATION

CHAIRMAN:
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT

MERCHANT MARINE AND FISHERIES

Congress of the United States
House of Representatives
Washington, D.C. 20515

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October 28, 1983

The Honorable Robert A. Roe
Chairman
Subcommittee on Water Resources
House Public Works & Transportation Committee
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed, for the hearing record on the Clean Water Act, are comments prepared by Armco Inc.

I would appreciate your making them part of this record.

With warm best wishes.

Sincerely,

Jim

James L. Oberstar
Member of Congress

COMMENTS FOR THE HEARING RECORD
ON THE CLEAN WATER ACT
BEFORE THE
WATER RESOURCES SUBCOMMITTEE
OF THE
HOUSE PUBLIC WORKS AND TRANSPORTATION COMMITTEE

Prepared By

Bruce A. Steiner
Manager - Environmental Engineering
Armco Inc.

October 17, 1983

Armco Inc. is a major steel manufacturer with nine large steel plants located across the country from Baltimore to Los Angeles. As a basic steel producer, Armco uses large quantities of water and generates large volumes of wastewater which must be treated prior to discharge. The cost to build and operate the necessary waste treatment facilities is a significant part of the cost of steel manufacturing. Armco is, therefore, most interested in the Clean Water Act (CWA) and its amendments. Of particular concern are the compliance deadlines, pretreatment, and Water Quality Standards (WQS).

Compliance Deadlines

The Act currently requires compliance with Best Available Treatment (BAT) by July 1, 1984, about nine months from now. This deadline is clearly inadequate and must be extended. The 1984 deadline was established on the premise that BAT effluent guidelines limitations (ELGs) would be promulgated in mid-1980. On that basis industry would have had 48 months from establishment of the guidelines to compliance with ELGs. In Armco's experience it typically takes 36 months to design and build a major water pollution control facility. Design cannot begin, however, until an NPDES permit is issued. The original 12 months allowed for permit issuance was not unrealistic. There is a widely held perception that ELGs, when promulgated, constitute a precise road map detailing what is required of a company to move from existing levels of control to compliance with BAT ELGs. In the steel industry this perception could not be more wrong. The steel industry guidelines are very complex and difficult to apply, requiring the permit writer to make site specific judgments and engineering interpretations for literally hundreds of variables not specifically addressed by the ELGs. As a result of the difficulty in applying steel guidelines, steel permits often take an extended period to develop. In addition it is not uncommon for state agencies to delay consideration of steel permits because of the manpower required for their development.

Eight of Armco's nine major steel plants require NPDES permits. The ninth plant discharges all wastewater to a POTW. Even though the steel industry guidelines were promulgated in May of 1982, none of these plants have received revised NPDES permits that reflect these guidelines. One permit is out for public notice and should be issued in October. One permit will be public noticed in October and should be issued before the end of the year. The EPA and the states have not begun to develop permits for the remaining six plants. Although Armco has no control over the timing of these six permits, we do not expect any of them to be issued before mid-1984, over two years from promulgation of guidelines.

If timing of permit issuance was the only problem, it would be possible for a company to develop its own effluent limitations from the guidelines and design and build the necessary facilities within 36 months of promulgation. Unfortunately, the complexity of the steel ELGs prevents unilateral development of effluent limitations. For example, one of Armco's plants in Zanesville, Ohio, is presently involved with permit negotiations. At this particular location there are three parties involved: Ohio EPA, U.S. EPA, and Armco. Often there are even more participants in these negotiations. At Zanesville when each of the three parties independently applied the ELGs three different and widely varying effluent limitations were developed. The controls required to comply with these different limitations varied from no additional control in one case,

to EPA's BAT technology in another case, to control which went far beyond EPA's BAT technology. When the permit is issued it is probable that limitations somewhere in the middle of the range, but different than any of the original proposals, will be adopted. From Armco's experience it is essential to wait until the state and EPA develop a permit before the design and construction of controls begin. Because the company has no control over when these permits are developed, Armco recommends that the deadlines in Section 301 be amended to require compliance within 36 months of permit issuance.

Pretreatment

Another section of the Clean Water Act Armco believes should be amended deals with programs for pretreatment of industrial wastewaters. We believe it quite appropriate that the pretreatment portions of the law be reexamined and amended significantly to provide a more workable, practical system of pretreatment permitting. Armco has concerns about pretreatment deadlines similar to those described above. Currently compliance with Categorical Pretreatment Standards is required within three years of promulgation. In the steel industry that is July 10, 1985. Armco has six major discharges to POTWs. Currently (14 months after promulgation) none of these discharges have pretreatment limits established by the local POTW, the state, or EPA. In fact, proper limitations cannot be established at any of these locations until the necessary information on removal credits is developed. In 1977, the Congress amended the Clean Water Act specifically to provide for the granting of removal credits by a Publicly Owned Treatment Works (POTW). EPA's implementation of the removal credit program has resulted in regulations that are so complex and administratively difficult that they tend to discourage rather than encourage cost effective joint treatment of industrial and municipal wastes. EPA's pretreatment program is based on establishing uniformly applicable categorical pretreatment standards and a removal credit system that would allow modification of the categorical standards consistent with removals achieved at the Public Owned Treatment Works (POTW). Where removal credits are not available, the combined cost of pretreatment plus sewer service charges often exceeds the discharger's cost of providing BAT treatment and discharging directly into the receiving waters. Under the present regulations removal credits will not be available for most sources. Several large municipalities have criticized the system as unworkable and do not plan to implement removal credits. Most municipalities are unable to comply with the very restrictive provisions of the removal credit system. Even those few municipalities who are willing and able to establish a removal credit system cannot obtain the necessary approvals in time to help industries with pretreatment standards promulgated in 1983 or before. In addition, a report by the House of Representatives Subcommittee on Oversight and Review of the Committee on Public Works and Transportation in the 96th Congress concluded that the removal credit provisions are unworkable.

Armco currently has several facilities that utilize Publicly Owned Treatment Works (POTW) for co-treatment of industrial process wastes. Examples of problems with the removal credit provisions at three of those facilities are as follow:

(1) Middletown Coke Plant (Middletown, Ohio): This facility currently discharges partially treated Coke Plant flushing liquor into the Middletown, Ohio, POTW. The pretreatment system is currently not meeting the Categorical Pretreatment Standards. Preliminary data on POTW removal efficiency suggest that the combined removal achieved by pretreatment and the POTW is equal to or greater than Categorical Standards. If the POTW receives authority to grant removal credits of 82% for phenol and about 70% for ammonia, the Middletown Works will not be required to provide expensive additional pretreatment facilities. However, should the POTW not receive removal credit authority, Armco must spend several million dollars for a phenol removal system and substantially increase current operating costs to remove additional ammonia.

The City of Middletown is currently in the process of applying for approval to grant removal credits for phenol and ammonia. Based on the historical operating data, it is probable that the City will be granted the authority to give removal credits in the range of those outlined above. Based on the probability that removal credits will be granted, Armco has delayed installation of additional pretreatment facilities. If, however, the credits are denied or delayed in the administrative procedure outlined in 40 CFR 403, then the Coke Plant will be unable to comply with the Categorical Pretreatment Standards by the specified date of July 10, 1985.

(2) Union Wire Rope Wire Mill (Kansas City, Missouri): This plant currently discharges partially treated pickle rinse water and galvanizing quench water to the Kansas City, Missouri, POTW. Union Wire Rope (UWR) is not in compliance with the Categorical Pretreatment Standards and will be required to install additional pretreatment by July 10, 1985. The problem faced by Armco is what type of treatment system should be installed. The treatment technology envisioned by EPA in the development of Categorical Pretreatment Standards included neutralization and gravity settling. Bench scale work at Armco indicates the EPA technology is inadequate to meet the Zinc Standard at Union Wire Rope. Additional solids removal by post-filtration appears to be necessary to achieve the Categorical Standards. If removal credits for zinc are granted, the expensive post-filtration step could be eliminated. The dilemma is whether or not to assume zinc removal credits will be available. We cannot wait for a decision on removal credits because to meet the July 10, 1985, deadline design and installation of the required facilities must begin immediately.

(3) Baltimore Wire Mill (Baltimore, Maryland): The Baltimore Wire Mill currently discharges partially treated Kolene quench water, pickle rinse water, and coating rinse water into the Baltimore Back River POTW. Baltimore Works is currently not achieving the Categorical Pretreatment Standards and must install additional pretreatment in the form of clarification and sludge dewatering. Preliminary treatability studies indicated the need to install post-filtration to remove approximately one pound of nickel and chromium per day. If removal credits were available, there would be no need for post-filtration. Unfortunately, to meet the July 10, 1985, deadline Armco cannot wait for a final determination on removal credits. A decision on what to build must be made immediately. We are again faced with the dilemma of whether or not to assume removal credits will be available.

One solution to this removal credit dilema is to amend Sec. 307(b) to establish a removal credit program and allow EPA to extend pretreatment compliance deadlines on a case-by-case basis where preliminary evidence suggests removal credits are appropriate. Conceptually the removal credit program would consist of a preliminary application by the POTW for removal credits to be submitted within 3 or 4 months of enactment. Approval of the preliminary application would be contingent upon EPA's assessment of the POTW's removal capability. If approved the POTW would be given 24 to 30 months to assemble the detailed treatment and analytical data necessary to fully demonstrate removal capabilities. In those cases where the POTW's preliminary application provides evidence that removal credits will ultimately be approved, EPA has the authority to extend the pretreatment compliance deadlines for industrial users. The extension would be limited to the time required for the POTW to make the necessary demonstration.

Water Quality Standards

In addition to the above sections of the Act, Armco is interested in the outcome of the recent controversy over Water Quality Standards (WQS). On October 29, 1982, the U.S.EPA proposed changes to its WQS Regulations. This proposal was perceived by some as a major relaxation of WQS requirements. As a result, amendments to the Act have been introduced that would block the effects of these regulations.

Armco supports the flexibility the proposed regulations would give to the states. We believe that the proposed regulations are required to prevent unnecessary expenditures to meet some WQS, such as those which are not physically nor economically attainable or those with attainment costs that have no reasonable relationship to benefits.

Since passage of the Clean Water Act, water quality standards have seemingly suffered from "benign neglect" by the EPA and more especially the states. This is because it is clear from the language of the Act and its Congressional history that a nationwide "technology-based" system of environmental controls were intended. In 1972 the reasons for this type of approach seemed clear. The previous state-controlled approach to pollution control, with limited assistance from the federal government, was not meeting the expectations of the people (as reflected in Congress). Pollution control was not consistent nationwide because the motivation of the states involved and the data upon which decisions were based varied. Water quality standards were viewed as a good idea that was not working because of a lack of data on which to base decisions and a lack of commitment on the part of the states. Sufficient data to make water quality decisions took a long time to develop and immediate results were desired in 1972. The technology-based system that was enacted had the potential for fast results.

This system has improved water quality in the nation's waterways significantly. In its March 1976 report, the National Commission on Water Quality stated that "... application of the 1977 requirements (BPT) will restore a large portion of the nation's presently polluted waters to a level of physical and chemical quality sufficient to provide for achievement of the interim goal." Significant progress has indeed occurred. For example, the Ohio River Valley Sanitation Commission (ORSANCO) has reported steadily improving conditions in the main stem of the Ohio River and its major tributaries. The following

excerpt is from ORSANCO's report entitled "Fishes of the Ohio River: A Testimony to Clean Water":

> The relative abundance of various classes of fish since 1968 has shown steady movement toward greater proportions of the more 'valuable' species. This is an indication of improved water quality since fishes known to be relatively intolerant of pollution are increasing in number.

This improvement is primarily a result of BPT application for industrial dischargers and secondary level treatment for municipal sewage plants.

We apparently now have come full circle and rightly so. Armco endorses the emphasis on attaining appropriate water quality standards with technology applied as needed. This approach is the only practical alternative to making water bodies, wherever possible, "fishable and swimmable" as required by the Act, without needless expenditure. We believe that the existing legislative language and EPA regulations are adequate to achieve the goals of the Act. However, to avoid unnecessary hardship and needless expenditures in the pursuit of these goals, Armco strongly supports EPA's proposed WQS regulations.

Legislation designed to block this proposal could have a profound adverse impact on some of Armco's operations. We may be forced to go beyond BAT controls with no appreciable improvement or benefit to anyone. Three examples of these problems are as follow:

(1) Middletown Works (Middletown, Ohio)

The Middletown Works, Armco's largest operation, is a fully integrated steel plant, with an annual production of about 2.2 million tons. It produces cold rolled, hot rolled, and coated steel strip. Pollution control facilities include some of the latest technology available. Wastewaters from the blast furnace, open hearth, B.O.F., and hot forming are all treated in complete recycle systems. Other process waters used on a once-through basis are given extensive treatment before discharge. In fact, the EPA used data gathered from its own studies of the Middletown Works to develop steel industry (BAT) effluent limitation guidelines (ELG).

The Middletown Works discharges to Dicks Creek, a very small stream tributary to the Great Miami River. Data from Armco's studies indicate that plant discharges contribute 50 to essentially 100 percent of the flow to the creek during low flow periods. Even with this high percentage of treated industrial waste, the creek supports a number of fish species including minnows and blue gill. However, because of its very low flow, its narrow and shallow cross-section, and lack of good tree cover for a large part of its length, Dicks Creek is not capable of supporting a balanced population of fish and aquatic life. Regardless of these physical constraints, the use classification currently applicable to Dicks Creek is Warm Water Habitat - the same use and the same WQS established for the Great Miami River and the Ohio River to support a balanced population of fish and aquatic life. This use designation was established in the 1970's when the State of Ohio, in an effort to comply with the CWA, established Warm Water Habitat as a use to be achieved in all waters of the state unless noted otherwise. Dicks Creek was not among those streams which received an

exception from the general classification. At that time, there was insufficient data available to evaluate the attainability or impact of this designation on every stream and stream segment. There was essentially no data available for Dicks Creek. In the past few year Armco has developed substantial data concerning stream flows and quality, and the impact of Armco discharges. We believe that this new data supports a change in the current use designation. This change is not possible, however, without modifications in water quality regulations similar to those proposed by EPA.

If the use designation in Dicks Creek is not changed, Armco will be required to provide additional treatment beyond BAT. It is estimated that this additional treatment will cost $5 to $10 million, an expenditure which is not likely to improve the creek's current ability to support fish and aquatic life.

(2) Hamilton Plant (New Miami, Ohio)

The Hamilton plant is located about 11 miles southwest of the Middletown Works. Its two blast furnaces furnish supplemental pig iron to the steel-making facilities at Middletown. Wastewater from both furnaces is treated in a common recirculation system. All process water discharges through a common outfall to the Great Miami River.

This Armco plant is located along a stretch of the river whose flow has been altered. A hydraulic canal which originates about 2.8 miles upstream of the outfall diverts water away from the main stem to a municipal power plant. This canal bypasses the Armco plant and rejoins the river about 1.4 miles downstream of the outfall. Historical data suggest that during low flow conditions, approximately 80% of the total river flow is diverted through the canal bypassing the Armco plant. State law permits the power plant operator (City of Hamilton, Ohio) to divert all of the river flow through the canal when necessary. In total, this canal bypasses water around 4.2 miles of the natural channel of the Great Miami River.

Despite this fact, the use designation for this river segment (Warm Water Habitat) is the same as the remainder of the Great Miami River. At the extremely low flows experienced in this 4.2 mile segment, it is doubtful that the Warm Water Habitat use could be achieved even in the absence of waste discharges. Nevertheless, without a mechanism to change this designation, Armco is locked into one which is overly restrictive and does not recognize the physical reality of the stream. The current use designation may require Armco to provide expensive controls which go well beyond the BAT level of treatment. Even with these controls it is doubtful that the segment will ever achieve the Warm Water Habitat use designation.

(3) Butler Works (Butler, Pennsylvania)

The Butler Works is a large specialty steel plant with an annual production of about 1.0 million tons. It produces silicon and stainless steel strip.

All wastewater from the works is discharged to Connoquenessing Creek. The most restrictive use designations for Connoquenessing Creek are Warm Water Habitat and public water supply. With the exception of fluoride, the current WQS can be achieved by compliance with BAT effluent limitations. The fluoride originates from the use of hydrofluoric acid to clean specialty steel products.

After considerable study over the past two years, Armco has concluded that the current Pennsylvania Fluoride Standards are inappropriate in two important respects. First, fluoride does not need to be limited for the protection of fish and aquatic life. This conclusion was reached by Dr. Jan Sykora, an aquatic biologist at the University of Pittsburgh, as a result of a recent literature search on the toxicity of fluoride. To Armco's knowledge Pennsylvania is the only regulatory authority that limits fluoride for protection of fish and aquatic life.

Second, Pennsylvania limits fluoride for public water supplies at all locations in the stream whether or not a public water supply currently exists or is planned for the future. The closest use of Connoquenessing Creek as a public water supply is Zelienople's emergency water supply, 20 miles downstream of Butler Works. Because stream flows increase downstream, current fluoride discharges at Butler meet WQS at Zelienople even though they exceed the standards near the Butler discharges.

Armco is currently in the process of petitioning the State of Pennsylvania to modify its fluoride limitations. If EPA regulations or the CWA will not allow this modification, Armco will be exposed to several million dollars in pollution control costs beyond what is required for BAT limitations.

We thank you for the opportunity to present these comments on the Clean Water Act. We will be happy to provide the Subcommittee with any further information you require.

RT4/63

National Association of Home Builders
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Harry Pryde
1983 President

October 19, 1983

The Honorable Robert A. Roe
Chairman
Subcommittee on Water Resources
Committee on Public Works and Transportation
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

On behalf of the National Association of Home Builders, I would like to submit this statement for the record of the Subcommittee on Water Resources' hearings on amendments to the Clean Water Act. Specifically, I wish to address H.R. 4037, introduced by Representative James Oberstar, which would add a new Section 319, entitled "Non-point Source Control Implementation Plans," to the Clean Water Act. NAHB's 112,000 members include thousands of land developers and homebuilders whose businesses would be affected by enactment of a non-point source pollution control program.

This year the homebuilding industry has begun to recover from its worst recession since World War II. If interest rates continue to decline, we will be able to continue to lead this nation's economic recovery. The cost of financing homes has made us doubly concerned with the affordability of the homes we build.

Housing affordability is one factor that prompts our interest in non-point source pollution controls. Our members have considerable experience using these controls, which I would like to explain briefly before commenting on the proposal of Representative Oberstar.

Non-Point Source Pollution and Homebuilding

Our members prepare land for construction and build houses and other structures. We build everything from one single family detached house to apartments to subdivisions. We construct office complexes, shopping centers, schools, industrial facilities and many other structures. The size of our members' projects ranges from additions onto houses to entire planned communities. Our land developer members prepare land for construction by paving roads, installing sewers and utilities, landscaping, and subdividing parcels into buildable lots.

During development and construction, we temporarily remove ground cover from construction sites. Runoff from those construction sites can introduce sediment into waterways for a short period. Local governments often require builders and developers to reduce the amount and rate of sediment runoff in order to protect waterways. Many builders voluntarily reduce erosion in order to preserve valuable topsoil or trees that contribute to the site's value. The most common practices include:

1. The maintenance of vegetative cover. The smallest area needed for construction is cleared, trees retained, and the topsoil conserved by stockpiling, mulching, reseeding and sodding.

2. The use of hay bales, silt fence and brush barriers to trap sediment on site.

3. Sediment basins that catch runoff to allow sediment to settle out and release the treated runoff.

4. Earthen diversion berms with pipes or chutes to direct runoff to basins. These are especially useful on steep slopes.

Builders also take measures to reduce runoff from finished sites. Natural or structural measures may be used, with widely varying impacts on costs. Flexible zoning ordinances that allow cluster housing or planned unit developments can increase open space, thereby increasing rainwater infiltration and improving stormwater management. Subdivision ordinances can actually reduce development costs while reducing non-point source pollution. Narrower streets, fewer sidewalks and porous pavement reduce impervious surfaces and, as a result, the volume of runoff.

Unfortunately, most control measures impose additional costs which are passed on to the consumer. They must be chosen to fit the site and to keep costs at a minimum. The typical control measures on finished sites include:

1. Vegetative cover to slow the velocity of stormwater runoff and to filter particles from the runoff.

2. Infiltration systems that direct the flow of surface runoff into the ground. Proper soil conditions are necessary. Runoff storage facilities are often necessary when infiltration rates are slow. These systems include dutch drains, which are gravel filled ditches that trap runoff and hold it while it seeps into the ground. Also used are grassed swales, which are depressions in the earth used to slow and hold runoff, and porous pavement, used to absorb street runoff.

3. Surface retention that uses permanent impoundments to hold stormwater on a long-term basis.

4. Surface detention ponds that reduce the rate of runoff by temporarily storing stormwater.

Detention measures in particular require maintenance, so the costs and responsibility of long term upkeep should be considered when selecting such measures. Actual costs are site specific, so cost figures are difficult to compare. However, in every case the costs should be weighed carefully against the effectiveness of the measures being considered.

NAHB Actions

NAHB has for years provided technical advice to our members on land development, including erosion, sediment control, and stormwater management. In 1978 we co-authored a booklet with the U.S. Environmental Protection Agency on non-point source controls in the homebuilding industry. Later, in 1979, we launched a major educational program among our members designed to inform them about the impact of water quality laws on the homebuilding industry. Through speeches, publications, seminars and technical advice, we educated our members on non-point source pollution laws and control practices.

Our affiliated state home builder associations also take initiatives with respect to non-point source pollution. The Kansas Home Builders Association has completed two years of work with the Kansas Department of Health and Environment on a study of erosion control measures. At the request of the Kansas Department of Health and Environment, a Kansas homebuilder chaired the study's task force. The final report concluded, as had the 208 plan, that construction is not a significant non-point source pollution problem in Kansas.

The State of Kentucky and the Home Builders Association of Kentucky have jointly developed a voluntary program of education and technical assistance to reduce non-point source pollution from construction sites. Together they have produced video and written materials aimed at builders and developers. Distribution of the materials has been under the auspices of the Home Builders Association, which has taken the initiative to persuade its members that voluntary use of management practices for non-point source pollutant reduction is in their interests as well as that of their communities. In this and other ways our members are working with state and local governments to ensure that non-point source measures are carried out only where necessary and only in the most sensible manner possible.

Federal Non-Point Source Pollution Program

Our experience with non-point source pollution control programs has persuaded us that several principles should guide the establishment of a federally initiated program.

(1) Information available through the 208 areawide planning process and other sources should be the basis for the state planning process. A tremendous amount of effort was put into the 208 planning process. To the extent that the information generated is germane to the non-point source pollution question, it should be used. Another round of planning is not necessary in most states.

(2) All pollution sources should be addressed. Exemptions should not be given to major sources of pollutants solely because of expense, although the management measures selected must be cost effective. Construction activitiy has localized impacts but is a relatively small part of the total non-point source pollution problem. To place constraints on construction sites while exempting agricultural lands from management practices would make the efforts undertaken by developers futile in terms of the overall improvement of the quality of the waterways.

(3) Decisions on which type of management practices to use should be made at the lowest feasible level of government. Proximity to the problem makes for better decisions as to how to handle the problems. Communities especially need flexibility in dealing with non-point source pollution because of the variety of pollutants and sources.

(4) Voluntary incentives to clean up are preferable to regulatory programs. To regulate the extraordinary number of sources of non-point pollutants would require the expansion of state and federal bureaucracies. A voluntary approach will achieve general compliance without the administrative complexity and expense of more regulations, review procedures, enforcement mechanisms, consultative bodies, and government personnel.

H.R. 4037, Non-Point Source Control Implementation Plans

Representative Oberstar has introduced H.R. 4037, a bill that would require state plans to reduce non-point source pollution. Under the Oberstar proposal, states would use existing data where available. They would produce plans that explain which waters need to be cleaned up, which pollutants and pollutant sources are involved, and when and how the state and local governments propose to reduce the pollutant runoff. The proposal further calls for coordination with Federal programs and the use of local agencies wherever practicable. EPA would approve the state plans and offer 50-50 matching grants to the states from an annual authorization of $150 million. Disputes among states would be resolved by interstate conferences.

The Oberstar proposal takes the approach of offering incentives to the state to address the non-point source pollution problem. We believe that the approach is positive and that the plan format allows the states sufficient flexibility to tailor their responses to the problems they encounter. The proposal also requires local involvement, which we believe is the best way to ensure that the solutions fit the problems.

We also are pleased that Rep. Oberstar's proposal would let states use 208 plans and other existing data and calls for state identification of and planning for pollutant reductions from all sources. It is also quite significant that the bill would oblige the states to identify the costs of management practices when they prepare their plans. That is particularly desirable in the case of land development and construction because the costs vary widely. Some management practices such as detention ponds are very expensive and require regular maintenance.

Other management practices such as hay bales and contouring have minimal costs. Still other management practices such as reduced sidewalk and road requirements can actually lower development costs. The choice of management practices in light of costs is an important one.

While we agree with the general direction of H.R. 4037, we would like to recommend four changes to improve the bill. Subsection (e)(2) of the bill authorizes the U.S. Environmental Protection Agency to approve a state non-point source plan if (a) the state has legal authority to carry out the plan, (b) the implementation schedule is expeditious, and (c) the measures outlined will fulfill the objectives of the section or reduce the pollutant loads from non-point sources. This third requirement creates a potential problem because it allows EPA to substitute its judgment for the state's as to what is appropriate for non-point source cleanup in the state. For example, if a state instituted a voluntary educational and technical assistance program for construction site non-point source pollution control, as is being done in Kentucky, under this section, EPA could determine that the program is inadequate and require the state to develop a strict regulatory program that requires construction site plans and permits. That may not be the intent of the sponsor of the provision, but a literal reading of the amendment language would permit that outcome.

We recommend that the requirement for EPA approval be modified to one of EPA certification that the state has met the requirements of Section (b)(2), which sets out all of the components of the plan. These include the requirements for legal authority and an expeditious schedule. Such an approach would be in keeping with the incentives approach that the bill takes overall. The approach we recommend would also guarantee that the state, and not EPA, decides what should be done to reduce non-point source pollution within that state.

A second change we recommend pertains to administrative efficiency. The proposal requires the state to submit to EPA three documents. A data report would have to be submitted and updated annually. An implementation plan would have to be submitted and updated annually. The state would also submit a report of federal programs that might carry out actions inconsistent with the plan and recommend corrections. We recommend that these three documents be combined into one. One submission and one update of the appropriate parts of the implementation plan to demonstrate annual progress should suffice to inform EPA. It would also streamline the process and reduce the paperwork involved.

Another means of streamlining the process in the proposal concerns the provision in Subsection (c) on federal agency consistency. This provision obliges EPA to compile state recommendations on federal actions and forward them to the federal agencies for appropriate action. As an alternative that uses an existing consultation structure, we recommend that the proposal have state-identified federal assistance programs submit their designated actions to the state for review via the advisory procedure set up under Executive Order 12372. The procedure is ideal for this type of federal-state consultation.

The changes we recommend would improve the positive and well-conceived approach taken by Representative Oberstar in H.R. 3407.

Conclusion

Progress has been made in controlling non-point source pollution. State and local governments should continue to have chief responsibility for the development and implementation of non-point source controls. They should have complete flexibility in developing their programs, so they can devise solutions that are most appropriate for the conditions they face.

The federal government's role should be that of promoting non-point source programs. It can do so through demonstrations, limited financial assistance, education and other means of encouragement. We strongly urge the Subcommittee to focus on positive incentives rather than regulatory programs or sanctions because we believe that a positive approach will be the best in the long run to reduce non-point source pollution.

I appreciate the opportunity to present our views. For further information on our views, please contact NAHB Senior Staff Vice President Robert D Bannister at 822-0470.

Sincerely,

Harry Pryde

Harry Pryde
President

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O. G. Simpson
President

October 24, 1983

The Honorable Robert A. Roe
Chairman
Water Resources Subcommittee
Public Works and Transportation Committee
U.S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Atlantic Richfield Company appreciates this opportunity to present its views on the reauthorization of the Clean Water Act. We request that the attached statement, setting forth this Company's position on the significant provisions of the Clean Water Act, be included in the hearing record of the Water Resources Subcommittee of the House Public Works and Transportation Committee.

It is important to recognize that much has been accomplished since the Clean Water Act was written in 1972, and amended in 1977. The Act has been very successful in reversing the problem of water pollution in the United States. The cost of success, however, has been high. The experience of the past decade has turned up some problems that this Company believes could be solved by making certain changes to the statute. These are described in the attached statement.

We hope our recommendations will be of use to the Subcommittee as it considers this important environmental law.

Thank you for your consideration of our views on the reauthorization of the Clean Water Act. My staff stands ready to assist in any way that would be helpful.

Sincerely,

O. G. Simpson

OGS:lr

Attachment

STATEMENT OF ATLANTIC RICHFIELD COMPANY

Submitted for the Hearing Record

Subcommittee on

Water Resources

of the

House Public Works and Transportation Committee

Hearings on the

CLEAN WATER ACT REAUTHORIZATION

October 24, 1983

Atlantic Richfield Company appreciates this opportunity to present its views to the Water Resources Subcommittee on the reauthorization of the Clean Water Act. As a Company involved in a number of diverse activities ranging from resource extraction to manufacture of finished goods, Atlantic Richfield has broad experience with many aspects of this important environmental statute. This Company, therefore, is keenly interested in the outcome of Congressional activity on the Clean Water Act and wishes to be a constructive participant in these deliberations.

This statement identifies changes Atlantic Richfield Company believes are needed in the major provisions of the Clean Water Act, including effluent limitations and deadlines, water quality standards and criteria, water quality based effluent limitations, discharge permits, ocean discharges and dredged or fill permits.

Atlantic Richfield Company believes the changes highlighted below will ensure protection of the nation's waters while improving the effectiveness of the regulatory program.

Effluent Limitations and Deadlines

The Clean Water Act requires industries to comply with a series of technology-based discharge limits by the following deadlines:

- "Best practicable control technology currently available" (BPT) was to be used to comply with the first level of technology-based limits by July 1977.
- "Best available control technology economically achievable" (BAT) is to be used to meet limits for toxic pollutants by July 1, 1984.
- "Best conventional control technology" (BCT) is to be used to meet limits for so-called conventional pollutants by July 1, 1984.
- BAT is to be used to meet limits set for so-called "nonconventional" pollutants by July 1, 1987. Nonconventional pollutants are all those that are neither conventional - suspended solids, coliform bacteria, and the like - nor toxic as defined in Section 307 of the law.

While industry was largely successful in meeting the BPT deadlines, the 1984 and 1987 deadlines will be impossible to meet simply because EPA has not issued the applicable limits and guidelines for the majority of industrial categories.

In the case of toxic pollutants, the difficulty in meeting the 1984 BAT deadline was heightened by the 1977 amendments to the law.

In 1977, Congress enlarged the scope of the BAT requirements for toxic pollutants by requiring that the 65 pollutants covered in the NRDC v. Train consent decree be listed as toxic and that BAT effluent limitations for discharges of those pollutants be promulgated. The 1977 amendments laid out criteria for establishing effluent limitations and for revising the list of toxic pollutants. However, the amendments established no formal procedure for listing or delisting toxic pollutants. Further, the amendments provided no means to determine the priority for acting on the 65 consent decree pollutants.

The toxics requirements were imposed because of the concern that the broad array of chemical discharges to water could have toxic effects on aquatic organisms and could ultimately endanger public health. But the progress made since 1977 in monitoring and assessing the toxic effects of chemical discharges has resulted in findings that many such discharges pose less of a threat to health and the environment than originally feared.

Given these new findings, the Clean Water Act's toxic pollution control requirement that BAT be implemented in every case is overly stringent and could result in unnecessary treatment.

In the case of nonconventional pollutants, the concept of moving from BPT to the more stringent and costly BAT was based on the concern that BPT alone could not meet the law's goals and policies. But assessments made since 1977 show that, for many industries, compliance with BPT is sufficient. And while moving to BAT often provides no significantly greater protection, it does impose significantly greater capital and operating costs.

Consequently, Atlantic Richfield Company recommends the following:

1. Eliminate BAT for nonconventional pollutants.

   Requirements more stringent than BPT for nonconventional pollutant discharges should be set only when required to protect particularly sensitive stream segments from harmful concentrations of such pollutants. Repeal of the BAT requirement would also mean repeal of the 1987 deadline for meeting the requirement. Instead, dischargers should be required to comply, on a case-by-case basis, within three years after guidelines and standards are issued in final form.

2. Extend the deadline.

   The 1984 deadlines for conventional and toxic pollutants should be extended to 1987 or three years after promulgation of categorical regulations, whichever is earlier.

3. Extend the review period.

   Review of effluent limitations should be required every ten years, rather than every five years as now mandated. As a means of providing for emergency situations, review prior to the ten-year limit would be allowed if significant, unforeseen risks arose.

4. Establish listing priorities for toxic pollutants.

   As a means of ensuring that the most important of the 65 consent decree pollutants are addressed first, Congress should require EPA to establish priorities for considering the substances. These priorities should be based on prevalence, relative potency and type of toxicity, adequacy of BPT to control the pollutant, and feasibility and environmental effects of going beyond BPT.

5. Establish listing, delisting procedures.

The Act should provide a more detailed procedure for revising the list of toxic pollutants. That procedure should include provisions for considering petitions from the public to list and delist substances when substantial new evidence shows that action is warranted.

6. Limit applicability of toxic standards.

BAT toxic limitations should be set only for those industrial categories and subcategories that are shown to discharge listed toxic pollutants in toxic amounts and for those categories and subcategories that require more than BPT to eliminate toxic discharges in toxic amounts.

7. Allow modifications of BAT limits for toxics.

The administrator of EPA should be allowed to grant case-by-case modifications of BAT toxic limitations for sources than can demonstrate that such modifications will not result in the discharge of toxic pollutants in toxic amounts.

Water Quality Standards and Criteria

The Clean Water Act directs the states to establish water quality standards for intrastate streams to protect public health and enhance water quality, taking into account the streams' uses and values. The standards are to be based on criteria issued by EPA. Congress intended the standards to be used to set effluent limitations more stringent than BPT or BAT if necessary to protect a particular water course's designated uses.

However, in the spirit of optimism that imbued states' water pollution control efforts after the 1972 amendments, most stream segments were designated as "fishable, swimmable"--not because they had previously enjoyed such uses but in the expectation that implementation of the water act would result in great improvements in water quality. In addition, EPA's water quality criteria were focused solely on achievement of fishable, swimmable water quality.

Actual experience with water pollution control demonstrated that, in many instances, optimism outpaced reality. It was realized that some stream segments, even with the most stringent water pollution control, would never attain fishable, swimmable status. Some states moved to downgrade water quality standards, but EPA's regulations made such revisions virtually impossible.

EPA went even further in tying the states' hands by declaring that federal water quality criteria were "presumptively applicable," and that the burden of proof was on a state to demonstrate why less stringent criteria could be used. However, in November 1980, EPA withdrew its "presumptively applicable" approach. Subsequently, the agency has proposed revisions to its regulations

governing standards and criteria to conform to the law's mandate that standards "consist of the designated uses of the navigable water involved and the water quality criteria for such waters based upon such uses." The agency indicated that it will issue criteria for attainment of uses other than fishable, swimmable which states must take into account in setting standards, viz.: public water supplies, agricultural, industrial, and other uses.

In reauthorizing the Clean Water Act, Congress should:

1. Reaffirm the concepts of multiple use and state primacy in the setting of water quality standards to ensure that EPA continues on its present course.

2. Require EPA to subject proposed water quality criteria to review by an independent advisory committee as a means of providing oversight and ensuring scientific accuracy.

Water Quality Based Effluent Limitations

Although the Clean Water Act places primary emphasis on technology-based limitations, it recognizes that in some instances these technology requirements may not be rigorous enough to protect water quality in a specific stream segment. Therefore, the Act empowers the administrator of EPA to require more stringent effluent limits on a case-by-case basis if technology limitations are insufficient and if the water quality-related limitations are economically and socially justified. Atlantic Richfield agrees that some provision must be made for going beyond technology-based limitations under certain rare circumstances. However, the current process for setting related limitations denies a discharger adequate time to respond to a finding by EPA that such limitations are necessary. Further, the authority given the administrator to require water quality-related limitations empowers the agency in these instances to preempt states that have been delegated authority to run their own discharge permit programs. Such preemption is inconsistent with the law's policy of recognizing, preserving and protecting the primacy of states in water pollution control.

Atlantic Richfield Company recommends that the Act be amended to:

1. Require that more stringent effluent limitations shall be established only by formal rulemaking procedures allowing for adequate notice, comment and review.

2. Prescribe that background documents describing proven technology capable of meeting these limitations shall be made part of the rulemaking process.

3. Provide that determinations on the need for water quality related limitations be made by states when the state has been delegated discharge permitting authority.

Pretreatment

The Clean Water Act requires EPA to establish pretreatment standards for industrial discharges to publicly owned treatment works (POTWs) if it is determined that the discharges are not susceptible to treatment by the POTW or would interfere with the operation of the POTW. The section further provides that for toxic pollutants, the owner or operator of the treatment plant may revise pretreatment requirements if the treatment plant removes all or any of the toxic pollutants without violating its discharge permit or contaminating its sludge.

Experience has shown that in many instances treatment plants do indeed provide adequate levels of toxic pollution control.

However, the pretreatment regulations issued by EPA have made it practically impossible for indirect dischargers to receive credits for removal by the POTW. This situation results in redundant treatment of toxic pollutants by industry and the POTW, a circumstance that is clearly uneconomic and not in conformance with the law's intent to simplify procedures and delegate responsibility to non-federal entities.

Therefore, Atlantic Richfield Company recommends amending the Act to:

1. Place the pretreatment program solely in the hands of the POTW operator. The local operator is best equipped to make determinations on the ability of the treatment works to handle indirect industrial discharges while meeting the requirements of its discharge permit and can best design pretreatment requirements that give full credit for pollutant removal by the POTW.

2. Require EPA to provide technical assistance when requested by the POTW or the permittee as a means of ensuring permit compliance.

Discharge Permits

Section 402 of the Clean Water Act provides that the administrator of EPA may issue permits for the discharge of pollutants into navigable waters if discharges meet the law's other applicable requirements.

In practice, however, numerous problems have appeared, including:

- Delays in issuing permits.
- Imposition of unnecessary and redundant requirements.
- Erection of unjustifiable barriers to use of the law's credits for pollutants in intake waters.
- Extension of technology-based point source requirements to storm water diversion facilities and other structures whose discharges are not amenable to treatment.

- Lack of consideration for de minimis sources of conventional water pollutants.

- Regulatory interpretations that preclude the flexible application of "bubbling" to permitted facilities.

- EPA's use of "informal," but binding, guidance that is not subject to normal public review and comment or to judicial review.

- EPA's broad exercise of veto powers over NPDES permits issued by states with primary permitting authority.

These problems can be remedied without interfering with the need to protect the nation's waters. Therefore, Atlantic Richfield recommends the following changes in the NPDES permitting process:

1. Issue permits for ten years.

   Currently, NPDES permits are issued for five years and may be terminated or modified at any time for a number of reasons. Atlantic Richfield believes that NPDES permits should be valid for ten years and should not be reopened by EPA except in certain specific instances. Those instances would include listing of a new toxic pollutant; issuance of a new BAT guideline; or making a showing that reopening the permit is necessary to prevent imminent harm to health or welfare. Such changes would reduce the amount of time industry spends in obtaining permits and would create an environment of certainty once a permit is received.

2. Mandate general permits.

   Although the Clean Water Act is silent on general NPDES permits for operations that are similar in nature, EPA has interpreted its authority to allow issuance of such permits. EPA has granted general NPDES permits for separate storm sewers, categories of other point sources that meet certain criteria, and for offshore drilling rigs in the Gulf of Mexico and off California.

   EPA's general permitting authority should be specifically provided in the Clean Water Act for those activities that:

   - Are similar in nature.
   - Cause only minimal environmental effects when performed separately.
   - Will have only minimal cumulative adverse effects on the environment.

   Atlantic Richfield also believes that certain categories of regional or general NPDES permits can be granted without adversely affecting water quality. Therefore, the Company

recommends that the law specifically require issuance of general or regional permits for offshore oil and gas operations, storage tanks and surrounding diked areas, pipelines, exploration drilling activities and mobile drilling rigs.

Because of the frequency of occurrance of offshore oil and gas activities and the similarity of environmental conditions in individual OCS areas, general permits should be granted in virtually all areas off the U.S. coast. The basis for issuing these general permits can be found in numerous existing studies concerning the impact of discharges in similar areas offshore. The studies provide substantial information regarding the environmental consequences of proposed discharges and show that the consequences vary little from place to place within those similar areas. Only in those areas which the Bureau of Land Management or EPA has designated as unique and environmentally sensitive should an applicant be required to complete the full NPDES permitting review process. Further, insuring that general NPDES permits in OCS lease sale areas are available and are effective by the date of a particular sale greatly reduces delays and provides certainty for industry operations.

3. Repeal Application of NEPA for New Source NPDES permits.

Section 511 currently requires that NEPA be applied to new source NPDES permit applications. This is a potentially time-consuming and costly requirement that Atlantic Richfield Company believes is redundant given the other requirements which must be met to receive a permit under Section 402.

4. Provide credits for intakes.

The Clean Water Act defines "discharge of a pollutant" as "any addition of any pollutant to the navigable waters..." Such a definition clearly indicates that a discharger should be given a treatment credit for any pollutant in his intake waters. However, as currently implemented, numerous restrictions imposed by EPA on the granting of "net" effluent limitations have made it virtually impossible for a discharger to take advantage of the "pollutant intake" provision. Congress should specify that discharge permits should require control of "net," as opposed to "gross," levels of pollutants in effluents. This change would merely underscore the intent of the law that dischargers should treat pollutants added to the water.

5. Set a deadline for action on permit applications.

Applicants for NPDES permits routinely encounter delays in final decisions on applications. To ensure timely agency action on NPDES applications, the process for issuing a permit should be expedited by requiring the agency to notify an applicant within 30 days of receipt whether an application is complete. When EPA

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finds that an application is incomplete, the agency should be required to specify what further information is necessary. The agency should be required to conclude final action within six months of receiving a complete permit application.

6. Provide exemptions from point source definition.

No technology exists or is likely to be developed for control of discharges, to specific effluent limits, from storm water diversion structures and the like. Furthermore, such structures, which merely regulate stream flow, frequently account for no net increases in the pollutant levels of receiving waters. Consequently, the definition of point source should be amended to exempt surface water diversions; shallow groundwater diversions; discharges from dams, ponds, and other structures that serve only to control streamflow; and storm water runoff and other non-point sources.

7. Authorize de minimis exemptions.

Unlike the Clean Air Act and other pollution control statutes, the Clean Water Act makes no allowance in its permit requirements for small point source dischargers of conventional pollutants. This lack of consideration imposes unnecessary control requirements on insignificant dischargers and prevents full concentration of resources on control of more important sources of pollution. The Clean Water Act should be amended to allow EPA to establish de minimis classes of point source dischargers of conventional pollutants. A de minimis discharger would be required to file a request for exemption and appropriate documentation relative to the proposed discharge with EPA or the state, as the case may be; if the permitting authority took no action on the request within 30 days, the exemption would be approved automatically.

8. Permit "bubbling."

Current EPA regulations require separate effluent limitations for each outfall at a facility, precluding the use of alternative effluent limitations, commonly called "bubbles," to achieve overall point source control in a potentially more economic and equally protective manner.

This stand has been taken even though the agency's own experience with bubbling under the Clean Air Act has shown that the measure can provide more cost-effective, yet environmentally sound, pollution control. The Clean Water Act should be amended to authorize bubbling that allows for tradeoffs between outfalls within a facility discharging the same or different pollutants so long as the overall effluent limitations for that facility are met.

9. Restrict EPA intervention in state programs.

Despite Congress' stated intent that EPA should exercise minimal authority in states that have assumed primary authority for NPDES permitting, the agency continues to reserve the right to object to individual state-issued permits under a wide variety of conditions. Congress should amend the law to state clearly that EPA may block issuance of a state NPDES permit only if it does not ensure compliance with effluent limitations, guidelines and standards promulgated under Title III of the Act.

10. Subject "unofficial" guidance to public and judicial scrutiny.

Over the years, EPA has issued a series of technical manuals and guidance documents that permit writers are required to consult in setting limits for point sources. However, this "unofficial guidance" has not been subjected to formal public comment and review. Similarly, this guidance has escaped judicial review because of EPA's assertion that the documents amount to mere policy guidance. However, the guidance documents have a major effect on the nature of requirements in individual discharge permits. Congress should amend the Act to require that EPA may issue manuals, guidance and other documents considered in writing NPDES permits only after notice to the public and opportunity for comments in accordance with the Administrative Procedure Act. Similarly, Congress should amend the Act to require that such guidance documents are subject to review in United States district courts.

Ocean Discharges

The Act currently requires that no NPDES permit may be issued for operations discharging into the territorial sea, waters of the contiguous zone, or the oceans until it is determined how the discharge will affect the receiving waters.

For the permit applicant, determination of effects means the performance of bioassays, analyses of the proposed discharge's chemical constitutents and of potentially affected biological communities, and an evaluation of available alternatives to the proposed discharge, among other things.

Atlantic Richfield believes such requirements are redundant in many cases. In the case of offshore oil and natural gas operations in federal waters, consideration of impacts on the marine environment are weighed under provisions of the National Environmental Policy Act at the time a tract is leased. In state waters, similar consideration is required under corresponding state law. In addition, in many areas, particularly the Gulf of Mexico, a multitude of studies of the marine environment already have been conducted and the potential impact of offshore activities is well known.

Therefore, Atlantic Richfield recommends the following changes in the ocean discharge requirements of the Act:

1. Take into account NEPA reviews.

   Compliance with the ocean discharge provisions should be required only in cases where a federal or state environmental impact statement (EIS) or its equivalent has not been prepared.

2. Take into account NPDES requirements.

   For cases where a federal or state EIS or its equivalent has not been prepared, compliance with the ocean discharge provisions should be required only for those aspects of ocean degradation that cannot be addressed by meeting NPDES discharge permit requirements.

3. Eliminate redundant studies.

   For those proposals subject to review under the ocean discharge requirements, maximum use should be made of prior studies of similar activities in the marine environment to avoid needless duplication of data.

Dredged or Fill Permits

Section 404 of the Clean Water Act requires permits issued by the Corps of Engineers for disposal of dredged or fill material in the waters of the United States.

The 404 program originally was designed to ensure that dredged or fill material discharges did no damage to surface water quality. As knowledge increased, it became obvious that the adjacent wetlands from which our surface waters flow also must be protected from indiscriminate dumping if water quality is to be maintained. However, efforts to protect those areas have resulted in judicial interpretations and regulatory decisions that have unnecessarily expanded the scope and complexity of the 404 program far beyond streams and rivers and the adjacent wetlands recognized to be important to water quality.

The corps' reluctance to issue general 404 permits under Section 404(e) has increased delays and resulted in redundant review of similar activities, frustrating the intent of the law.

Further, the corps' failure to assert its decision-making authority has also resulted in the imposition of permit conditions that are often unwarranted and unnecessarily expensive. Rather than face the delay inherent in negotiating unreasonable conditions with reviewing agencies, permit applicants have accepted stipulations that are unsubstantiated, produce no apparent environmental benefits, and are not cost effective.

Thus, while Atlantic Richfield supports the protection of the nation's navigable waters, major tributaries and adjacent wetlands from the adverse impact of dredged or fill material disposal, the Company believes the following changes in the statute are essential to provide a more reasonable and effective permitting program:

1. Increase use of general permits

Section 404 (e)(1) should be written to require the Secretary to issue categorical general permits on a State, regional or nationwide basis if the Secretary determines that the activities, or the impacts of the activities, are similar in nature, and their individual and cumulative impacts on the environment are minimal in absolute terms or when compared to the impacts of such activities when individually permitted. In making the determination whether to issue a general permit the Secretary shall consider and balance those factors which, in his opinion, affect the public interest.

This section should also state that the Secretary is required to issue general permits if it is determined that the use of a general permit would avoid unnecessary duplication of the regulatory control exercised by another federal, state or local authority, provided that the activities, or impacts of the activities, are similar in nature and their individual and cumulative effects on the environment are minimal, or will not increase as a function of the issuance of the general permit. In making the decision whether to issue a general permit the Secretary shall consider and balance those factors which, in his opinion, affect the public interest.

2. Encourage state primacy

Section 404(g) should be rewritten to require the federal government to delegate primary responsibility for the dredged or fill permit program to any state which submits for review a program meeting the statutory requirements of Section 404 of the Clean Water Act. The law should provide that a state with an approved program has primary jurisdiction over those waters defined in the law as subject to Section 404. At the state's discretion, the law should provide for the state to administer the program in all geographic regions of the states, in certain specific regions only, or for certain specified activities for which its program meets the statutory criteria of Section 404. In the event a state chooses not to administer a program fulfilling the statutory requirements of Section 404 within a specific geographic region or for particular specified activities, the administration of the law in these regions or for these activities would remain the responsibility of the Corps of Engineers.

The law should state clearly that the federal government's role in a state with an approved program is limited to one of oversight and that federal review is limited to water related aspects of the state's program, not individual activities. The federal government should be provided the authority to revoke a state's primary responsibility if it can be demonstrated that the state is not carrying out its statutory responsibilities and after a state has been notified of the federal governmeht's intentions and has been provided a reasonable opportunity to correct any deficiencies.

3. Expedite permit processing

Section 404(m) should be rewritten to require that within 45 days of submission of a complete application, all federal agencies must submit their comments on the application.

Additionally, 404(q) should be amended to require that within 90 days of receipt of a complete application a decision on the application must be made, unless the applicant and the agency agree, at the time of application, that ninety days is inadequate for reaching a decision on a permit. In such an instance, the applicant and the agency shall mutually agree upon an extended deadline. In the event the applicant and the agency are unable to reach an agreement regarding a deadline extension, the issue should be taken before the Chief of Engineers who will establish a new, extended deadline for that particular application, taking into consideration the concerns of both the applicant and the agency.

4. Substantiate permit stipulations

Section 404(m) should be amended to require reviewing agencies, when submitting comments on permit applications, to provide succinct justifications for any suggested permit stipulations. Such justifications should specifically delineate the anticipated adverse environmental effects that the proposed conditions are designed to prevent.

Section 404(m) should require that stipulations must be shown to mitigate verifiable adverse environmental effects of the proposed activities. Such changes in the law would ensure that any required modifications to permitted projects provide the maximum protection for water quality and other primary environmental concerns at a minimum of extra expense.

Additionally, the law should require the corps and reviewing agencies to demonstrate that the suggested permit stipulations are directly related to protection of values with a direct relationship to water quality or hydrology and other primary environmental concerns (such as those covered by the National Environmental Policy Act or the Endangered Species Act, as applicable) resulting from a change in water quality or hydrology.

This section should be further amended to require the corps to take into consideration the economic impact of its proposed permit stipulations. In the event the corps proposes a stipulation be placed on a permit that is of greater expense than alternatives proposed by the applicant, the corps should be required to justify its decision.

Govt. Relations/Govt'l Issues
GRC: 10/24/83

LAWRENCE J. SMITH
18TH DISTRICT, FLORIDA

COMMITTEE ON FOREIGN AFFAIRS
SUBCOMMITTEES
EUROPE AND THE MIDDLE EAST
INTERNATIONAL OPERATIONS

COMMITTEE ON JUDICIARY
SUBCOMMITTEES
CRIME
IMMIGRATION, REFUGEES AND INT'L. LAW

SELECT COMMITTEE ON NARCOTICS ABUSE AND CONTROL

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August 26, 1983

Hon. Robert A. Roe
Chairman
Subc. on Water Resources
B-376 Rayburn H.O.B.
Washington, DC 20515

Dear Bob:

I am enclosing a copy of a letter that I have received from Florida Governor Bob Graham concerning proposed amendments to the regulations on Section 404 of the Clean Water Act.

While Governor Graham supports regulatory reform, he expresses some serious concerns with the changes in the Corps 404 program. He feels that these amendments would devastate the regulatory program designed to protect wetlands and would seriously erode the rights of states to exercise their own environmental protection authority.

I understand that your Subcommittee will be holding hearings on this matter. To assure that Governor Graham's views are taken into consideration, I would appreciate your making his comments part of the public record on these hearings.

With best wishes, I am

Very truly yours,

LAWRENCE J. SMITH
Member of Congress

LJS:mbd
enc.

STATE OF FLORIDA

OFFICE OF GOVERNOR BOB GRAHAM

July 26, 1983

Honorable Lawrence J. Smith, M.C.
Sixteenth Florida District
113 Cannon House Office Building
Washington, D.C. 20515

Dear Larry:

Enclosed for your information are the State of Florida's comments on the Corps of Engineers' proposed amendments to its permit regulations for controlling activities in waters of the United States as proposed in the Federal Register, Volume 48, Number 93, May 12, 1983. We are very disturbed by these proposals and feel that they seriously weaken the effectiveness of the regulations in meeting the goals of the Clean Water Act.

While Florida continues to support responsible regulatory reform, we maintain our opposition to any major change in the scope of the Corps 404 program, which we feel these proposed regulations would affect. The Corps' intent to simplify its regulations fails for two reasons.

- In an attempt to deregulate activities which have minimal environmental effects, the Corps has included activities which will have major adverse environmental consequences.

- The proposed regulations do not recognize the existence of an independent regulatory program in Florida and would, therefore, only cause confusion in Florida and other states with regulatory programs. The Corps' amendments furthermore ignore the rights of the states to protect their own waters.

We do not relish the adversary role which the foreseeable effects of these proposals have caused Florida to take. However, looking at these rule changes, in conjunction with amendments to the Clean Water Act proposed by the Administration and Congress over the past year, we are greatly concerned about what appears to be a major administrative and legislative effort to dismantle the 404 program.

RECEIVED

The deadline for commenting on these proposed regulations has been extended from July 1 to August 31, 1983. If you have any questions on our comments, please contact Secretary Victoria Tschinkel, Department of Environmental Regulation, or her staff at (904) 488-4805.

With warm regards,

Sincerely,

Bob

Governor

BG/rsb

CMA

CHEMICAL MANUFACTURERS ASSOCIATION

WILLIAM M. STOVER
Vice President
Government Relations

December 22, 1983

The Honorable Robert A. Roe
Chairman
Subcommittee on Water Resources
Committee on Public Works and Transportation
U.S. House of Representatives
Washington, D.C. 20515

Re: Hearings on Possible Amendments to the Clean Water Act

Dear Mr. Chairman:

On November 3, 1983, testimony was presented to the Water Resources Subcommittee on behalf of the Chemical Manufacturers Association. CMA is submitting the attached statement to comment on the testimony of EPA Administrator William D. Ruckelshaus, which was presented subsequently on November 15, 1983. Our submission focuses on the FDF procedure, pretreatment, and civil and criminal enforcement. It also notes our support of EPA's specific proposal on extending the term of NPDES permits to ten years, and our agreement with EPA on the lack of justification for post-BAT water quality amendments.

CMA agrees with Administrator Ruckelshaus that Congress should clarify EPA's authority to continue to use the "undamentally different factors (FDF) procedure. CMA also agrees with the Administrator that the application of categorical pretreatment standards should be avoided where they are not needed. However, we believe that an alternate mechanism to assure necessary pretreatment can be developed without the delays and difficulties of concern to EPA. Finally, CMA believes that the new criminal sanctions and administrative civil penalties proposed by EPA are unnecessary and poorly conceived.

We request that the attached statement be included in the hearing record.

Very truly yours,

WMStover

Formerly Manufacturing Chemists Association—Serving the Chemical Industry Since 1872
2501 M Street, NW • Washington, DC 20037 • Telephone 202/887-1230 • Telex 89617 (CMA WSH)

SUPPLEMENTAL STATEMENT OF THE
CHEMICAL MANUFACTURERS ASSOCIATION
BEFORE THE SUBCOMMITTEE ON WATER RESOURCES
HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
DECEMBER 22, 1983

The Chemical Manufacturers Association submitted testimony to this Committee on November 3, 1983, concerning possible amendments to the Clean Water Act. CMA is a non-profit trade association whose company members represent more than 90 percent of the production capacity of basic industrial chemicals in this country. CMA is submitting this statement to comment on the November 15, 1983, testimony of EPA Administrator William D. Ruckelshaus.

CMA is in agreement with the Agency on a number of the issues discussed by Administrator Ruckelshaus. We agree that the industrial compliance deadlines under the Clean Water Act should be extended, and that it is time to focus attention on discharges from non-point sources. We also agree that legislation is not needed to address water quality standards and the establishment of additional controls beyond best available technology (BAT), if necessary. Finally, CMA supports amendment of Section 402 of the Act to extend the term of NPDES permits from five to ten years, as specifically proposed by the Administration. Our views on the FDF procedure, pretreatment, and civil and criminal enforcement are set forth below.

The FDF Procedure

In his testimony, Administrator Ruckelshaus requested that Congress clarify EPA's authority to con-

tinue to use the fundamentally different factors (FDF) procedure. We believe that this important procedure is clearly authorized by the Clean Water Act, but agree that Congress should clarify the Agency's authority in this area.

The FDF procedure has been a key feature of the national effluent guidelines program since its inception.[1/] The availability of an FDF determination is essential to allow EPA to develop national guidelines for typical facilities while allowing the consideration of plants with atypical features to be addressed separately. A recent decision of the Third Circuit Court of Appeals has held this procedure unlawful for toxic pollutants as it relates to indirect dischargers, and we believe this decision to be unsound as a matter of law and policy.[2/]

When EPA develops effluent limitations guidelines and standards, the Agency attempts to apply the statutory factors to typical and representative plants, with appropriate subcategorization to ensure that similar plants are treated similarly. However, given the complexity of American industry, it is not surprising that in establishing such national guidelines EPA will often not have the time, data, or resources to examine plants which may not be able to meet the national standards due to particular circum-

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1/ See E.I. duPont de Nemours & Co. v. Train, 430 U.S. 112, 128 (1977); 40 C.F.R. §§ 125.30, 403.13.

2/ National Ass'n. of Metal Finishers v. EPA, 19 ERC 1785, 1798-1801 (3d Cir. 1983).

stances. The FDF mechanism is a device to allow EPA to proceed in an expeditious fashion to develop the national guidelines applicable to most plants in an industry category or subcategory, while deferring consideration of problems raised by unique or atypical plants to a subsequent proceeding.

To obtain an FDF variance, a facility must show that it is different from those considered in establishing the national regulations, and that compliance with the national regulations would result in excessive costs or adverse non-water quality impacts. The plant that receives an FDF variance from a BAT-level standard is not "exempt" from BAT, but will be given an individual BAT limit based on the statutory factors in Section 304(b) of the Act. This is a limited safety-valve analogous to the Agency's use of best professional judgment permit determinations under Section 402(a)(1) of the Act for industrial facilities whose national effluent guidelines have not been issued. The FDF determination is not a modification procedure which is precluded for toxics under Section 301(l) of the Act, but instead is an alternate procedure for determining the applicable technology-based limitations for a facility.

EPA could consider atypical plants in the guideline process itself, by establishing additional subcategories or by entertaining rulemaking petitions regarding individual plants, but we share EPA's concern that this approach would add unnecessary complications to a guideline process

that has been behind schedule. EPA should have the flexibility to determine whether to proceed to deal with atypical plants by regulation or through the FDF procedure.

The Pretreatment Program

This subcommittee has received considerable testimony concerning the need for local control of the pretreatment program. The concept of local control has been broadly supported by groups such as the National Association of Manufacturers, the U.S. Chamber of Commerce, the Business Roundtable, the Association of Metropolitan Sewerage Agencies, the Association of State and Interstate Water Pollution Control Administrators, and the Water Pollution Control Federation. In his testimony, EPA Administrator Ruckelshaus testified that "where possible, we must avoid the application of categorical pretreatment standards where they are not needed."

EPA apparently has come to the conclusion that it is not feasible to administer a scheme under which local pretreatment programs would be allowed in lieu of categorical standards. In his testimony, Administrator Ruckelshaus states that such a new approach would involve a delay of two to three years in the program because the prerequisites of a national effort in this area are missing. In particular, the implementation of water quality standards and sludge disposal requirements and pretreatment standards are cited as being behind schedule.

We are not persuaded that the difficulties noted by Administrator Ruckelshaus are grounds for missing the opportunity to address the serious problems that have been identified in the pretreatment program. Municipal treatment works will have to comply with water quality and sludge disposal requirements with or without alternative local programs. We believe that the pretreatment program can be strengthened by directing the attention of municipal authorities to water quality and sludge disposal issues through local programs. As new federal requirements are established for water quality and sludge disposal, local programs should be revised as appropriate to reflect those requirements. We believe that providing for local control of the pretreatment program is timely and will not delay the implementation of the program.

Proposed Felony Sanctions

The Administration proposes to increase the criminal penalties under the Clean Water Act, and create new criminal offenses. It is our understanding that the Administration is particularly concerned with "midnight dumpers" into POTW sewer systems. CMA supports the imposition of criminal penalties for midnight dumpers. However, the felony sanction provisions in the Administration proposal go far beyond the circumstances that it intends to reach. Apart from this problem, CMA submits that the existing penalty provisions are more than adequate to deal with offenses under the

Act, especially in light of the high level of compliance by industry with the Act's requirements.

Penalties for Discharges to Sewer Systems. Section 8 of the Administration proposal would make it a criminal offense to discharge negligently or knowingly into a publicly owned treatment works or sewer system pollutants or hazardous substances which cause or may reasonably be anticipated to cause personal injury, property damage, or a violation of the POTW's NPDES permit. Although CMA supports the imposition of criminal penalties for midnight dumpers, the language of the Administration proposal is unnecessarily vague and goes far beyond the circumstances that it was intended to reach.

The fundamental difficulty with this new criminal violation is that it does not fit the existing regulatory scheme, consisting of federal categorical standards, prohibited discharges and state and local pretreatment programs.[1/] The proposal creates a criminal violation with no "civil" analogue and provides no clear definition of the prohibited conduct.

1/ Section 307(b) of the Act authorizes EPA to establish standards to prevent interference with the operation of a POTW. EPA has prohibited interference in its general pretreatment regulations and, as construed by the courts, has defined interference so that the industrial user will have a basis for knowing in advance what conduct is lawful. The Administration proposal would in contrast go far beyond midnight dumping and could make unlawful routine industrial discharges that are otherwise in compliance with federal and local requirements.

First, the phrase "may reasonably be anticipated to cause" personal injury or property damage is vague. Second, the Administration proposal fails to define what is meant by a sewer system, creating even more ambiguity in the statute. Does the offense include discharges to a plant's own internal sewer system?[1/] Moreover, mere negligent behavior should not justify criminal sanctions except perhaps in extraordinary circumstances involving reckless disregard of substantial risk of serious harm.

As to the vagueness issue, to prohibit conduct which "may" cause a particular result sets no standard by which the regulated entity can judge the legality of its actions. The only course it can follow to be certain of complying with the law is to refrain from discharging anything into a sewer.[2/] As a general rule a criminal statute must be drafted so as to give those whose conduct is to be regulated

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1/ CMA is also concerned with the definition of a "hazardous substance" in the Administration proposal. The definition is redundant since the term "pollutant" is already broadly defined by the Act. There is also great potential here for overlapping enforcement authority under the various statutes to which the definition refers. We believe the definition should be deleted as unnecessary.

2/ In a case which deals with a similar question, the Supreme Court has struck down on vagueness grounds a Pennsylvania statute requiring doctors performing abortions to follow certain procedures where there is "sufficient reason to believe that the fetus may be viable." Colautti v. Franklin, 439 U.S. 380 (1979). The Court there found and quoted language ambiguous for the very reason that it could have been read to subject the doctor to criminal penalties on the basis of the after-the-fact judgment of third parties.

fair notice of what is prohibited and to keep within reasonable bounds the discretion afforded the government in enforcing the statute. The fair notice requirement is satisfied only if the law is clear to "men of common intelligence," Connally v. General Constr. Co., 269 U.S. 385 (1926), or, if the statute would normally suggest the need for legal advice, its meaning can reasonably be determined through such advice. Where a criminal law is so vague as to fail this test, it is void under the due process clause of the Fifth Amendment. Id.

The Administration proposal would place on the regulated entity the burden of determining whether the discharge of a pollutant or hazardous substance, otherwise permitted, is nonetheless illegal because at some later date the Administrator and a federal prosecutor may determine that it had the potential for causing harm. This shifts the burden and subjects the defendant's decision to retrospective judgment in the absence of any actual harm, which violates the fair notice standard.[1/] Moreover, it opens up a virtually uncontrollable area of discretion for law enforce-

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1/ Although the proposal creates an affirmative defense where the discharge of pollutants into a POTW was in compliance with all applicable requirements governing the discharge, it is not clear whether the defense would be available in many typical situations. For example, is the discharge of a pollutant that is not regulated by a national or local standard a discharge that complies with applicable requirements? Does the offense apply even to negligible or de minimis releases? We submit that the offense should exclude such trace discharges, as is the case in Section 311 of the Act.

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ment with the concomitant risk that enforcement will be arbitrary and capricious.

If a "midnight dumping" problem exists, Congress should adopt a more carefully drawn provision which addresses that particular concern. Congress should not enact a broad, ill-defined provision that would unwittingly emcompass other activities that do not warrant criminal sanctions.

Violations of Pretreatment Programs. Section 8 of the Administration proposal would also make it a felony to violate "any requirement imposed in a pretreatment program approved under Section 402(b)(8)" of the Act. It is unclear what is intended by this provision. Section 402(b) of the Act contains NPDES permit requirements applicable to POTWs, and subsection 402(b)(8) requires permits for POTWs to include a program to assure compliance with pretreatment standards. If the felony provision is intended only to cover federal categorical standards, it is redundant since violations of Section 307(b) of the Act are already punishable. If the proposal intends to make it a federal crime to violate local pretreatment requirements, this is inappropriate. Congress expressly made local controls the province of the POTW, and rejected suggestions that there be a federal permit program for industrial users of POTWs. Local pretreatment requirements should be enforced by state and municipal authorities and not by the federal government. This provision would also create a broad new category of criminal liability with no federal civil counterpart.

First Offenses Punishable As Felonies. The Administration proposal, unlike other environmental statutes such as the Clean Air Act, would make first knowing violations of the Clean Water Act into felonies. We have heard no valid explanation for increasing the penalties for first offenses, particularly for violations of a complex technical statute such as the Clean Water Act. Because of the extensive and frequent monitoring that EPA requires, many violations of the Act will be "knowing." Many of these offenses will be minor exceedances of effluent limitations or other technical violations. For example, EPA's effluent limitations guidelines are designed by the Agency to be achievable only 99 percent of the time. Thus, the Agency expects a certain number of violations to occur. Such technical violations should be dealt with on a voluntary, informal basis. Even if criminally prosecuted, the first conviction for such minor or technical violations should not be a felony, even though the violation may have been "knowing."

The "Section by Section Analysis" accompanying the Administration proposal (at 3) states that the proposed amendment is designed "to address intentional violations of the Act occurring on a regular basis over an extended period of time that result in significant harm to public health or the environment . . . ." The summary states that the proposal is not "intended to apply to isolated instances of . . . discharges exceeding permit limitations." However,

the language of the Administration proposal is not limited to intentional, repeated and harmful violations.

We are particularly troubled by the change in the standard of conduct required from "willfully or negligently" to "knowingly." The present law requires either a disregard for the law or negligence. Under the Administration proposal, all that is required is that the violator be aware of the nature of his conduct -- there is no requirement that the conduct be negligent or that a violation of the law be known or intended. There is no sound explanation for increasing the penalties under the Act while lowering the standard of conduct.

Administrative Civil Penalties

CMA opposes the Administration proposal to add to the Clean Water Act a new regime of administrative penalties. There is no demonstrated need for such penalties. Indeed, the record of industry compliance under the Act has been very good. Consequently, it is unclear what purposes, if any, would be served by such penalties.

The proposed administrative penalties raise substantial questions of fairness. The penalties would not be imposed by an impartial fact-finder. It is entirely unclear what procedures and protections, if any, an alleged violator would have under the Administration proposal.[1/]

1/ The proposal provides that the alleged violator shall be given notice and an opportunity for a hearing, but the

(footnote cont'd.)

Violations of the Clean Water Act are likely to be technical in nature and often are unavoidable.[1/] Under the existing enforcement provision of the Act, monetary penalties for such violations may be imposed only by a court.[2/] This requires enforcement personnel to consider carefully the merits of any particular case, and to make judgments about which alleged violations are sufficiently serious to pursue.[3/] When penalties can be assessed like traffic tickets, the incentive to exercise discretion and judgment is lost.

CMA remains willing to discuss these issues in a constructive manner with the Congress.

(footnote cont'd.)

hearing, if allowed, will not be subject to the procedural protections of the Administrative Procedure Act. Although subsection (6) of the Administration proposal gives EPA the authority to issue subpoenas for such hearings, the alleged violator is provided with no means for having such a subpoena issued to compel the production of witnesses or documents.

1/ See page 10 above.

2/ EPA has not been reluctant to use its enforcement authority under Section 309 of the Act. As for administrative convenience, many of these Section 309 actions are settled without need for lengthy proceedings.

3/ The "Section by Section Analysis" states that this provision is intended to apply to "clear and well-documented violations." However, the language of the proposal is not so limited.

TOM VANDERGRIFF
26TH DISTRICT, TEXAS

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March 15, 1983

Congressman Robert Roe
Chairman
Water Resources Sub-committee
2165 Rayburn H.O.B.
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed please find the comments of the Texas Committee on Natural Resources.

I would appreciate if you would incorporate the comments in the hearing transcripts on the EPA's proposed changes to the water quality standards regulations.

Thank you for this consideration.

Sincerely,

Tom

Tom Vandergriff

Enclosure

TV:fp

TEXAS COMMITTEE ON NATURAL RESOURCES
5518 DYER, SUITE 3B
DALLAS, TEXAS 75206
(214) 368-1791

Mr. David Sabock, Chief M2818
Criteria Branch
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

January 14, 1983

Dear Mr. Sabock:

TCONR made a brief statement at the November 30 meeting in Dallas regarding the proposed Water Quality Standards Regulations. Since then, we have more fully reviewed them and have the following comments:

COMMENTS ON PROPOSED WATER QUALITY STANDARDS REGULATIONS

131.4 -- EPA Authority

EPA review should also involve a determination that all requirements of the Clean Water Act are met, and that the State has complied with all applicable EPA regulations, including 40 CFR, Part 25. Since EPA may disapprove a proposed revision only on the basis of the requirements of the Clean Water Act, as described in 131.21 (EPA review and approval of water quality standards), this section should refer explicitly to the Act's public participation requirements. Otherwise, States could downgrade standards without any public involvement, and EPA would have no regulatory basis for stopping that.

131.20(b) -- Public Participation

This paragraph is vague. It says, "The State shall provide for public participation in selecting priority areas..." Does this mean the requirements of Part 25 must be met? Section 25.4 (Information, notification, and consultation responsibilities) is directly applicable.

The last sentence in this paragraph is either redundant or insufficient. Part 25, referenced in the previous sentence, has specific requirements for public hearings; these pertain to notification about the hearing and dissemination of information. The WQS regulation should specify that the cost/benefit analysis used by the State must be made available to the public 30 days before the hearing.

If a cost/benefit analysis is a key decision tool, this analysis should be required to be made available for public study. All assumptions should be made explicit, and all numbers assigned to "intangible" costs and benefits should be revealed. The discount rate, used to figure the present worth of future costs and benefits, should be given. All this, including the cost/benefit methodology, should be made available to the public at least 30 days before the hearing.

131.13(c) -- Variances

The proposed regulations would allow States to grant variances to dischargers who claim they can not afford to meet existing standards. While there are some restrictions, these are not likely to interfere with a State's granting variances to any politically effective discharger. Subparagraph (3)

> "The variance will not eliminate existing uses or preclude eventual attainment of the designated uses not being attained."

would allow legal downgrading of water quality if States relaxed criteria necessary to protect designated uses or dropped a designated use on the grounds that attaining the use would be unreasonably costly. The discharger's claims of economic hardship could be used to justify either downgrading the standard or granting a variance. This is not fair to dischargers who have already paid to improve their effluent and who did not resort to claims of special hardship.

Any cost/benefit study used in this context should be required to acknowledge that the costs of granting a variance are borne by the public, are difficult to identify specifically, and are not readily quantified in dollar terms. The benefits, on the other hand, accrue primarily to the discharger (and its stockholders if it an industrial or utility plant), may be specifically identified, and are readily presented in dollar terms -- presented by the discharger to maximize the apparent reasonableness of a variance.

131.10(h)(6) -- Designation of uses

Since States would be allowed under this part to downgrade "if the State determines that attaining the use is not feasible because benefits of attaining the use do not bear a reasonable relationship to the costs," the regulations should have some requirement for public comment, adequate public access to supporting documents, and standards regarding the merits of economic-hardship arguments. Since the public welfare and environmental protection are entrusted to EPA, the Agency should have strict standards to guard against betraying its public responsibility. Allowing public waters to be downgraded, or polluted beyond what is clearly legal, would be betraying EPA's public responsibility if such decisions are based on (a) discharger claims of economic hardship, (b) discharger estimates of abatement costs, and (c) apathetic identification and evaluation of damage to the general public welfare.

If "reasonable relationship" is to be an allowable criterion for downgrading, it should be properly defined to address these potential abuses. Allowing "flexibility" to the States on this is purely abandoning EPA's statutory responsibility to restore and maintain the chemical, physical, and biological integrity of our water. It also flauts the statutory goal "wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and provides for recreation in and on the water." (101(a)). "Wherever attainable" does not mean "wherever dischargers choose to clean up."

131.10(d) -- Designation of Uses

It is possible that a stream may not meet criteria for a designated use because (1) dischargers are exceeding permit limits, (2) permit limits are looser than current technology and/or the law make feasible, or (3) nonpoint source pollution degrades the water. Under this part, uses would be deemed attainable if they can be achieved by imposition of effluent limits appropriate under 301(b)(1) and (2) or 301(c), or by imposition of reasonable cost-effective nonpoint source BMP's. There should be a requirement for the States to prove that enforcement of permits has been strong and that non-attainment of criteria is not caused or abetted by permit violations. The burden of proof should be on those who wish to downgrade. There should also be a requirement that States present for public comment an analysis comparing the costs of implementing adequate nonpoint source BMP's versus the costs of downgrading stream standards. Any downgrading should be justified by balancing costs to the public from downgrading, versus benefits to landowners excused from implementing BMP's.

Very few States have adopted regulatory BMP's because there is no incentive for them to face the political heat that would result. It is much easier now, and especially under the proposed regulations, to abdicate protection of water quality and claim that nonpoint source BMP's are not cost-effective or reasonable. Who's to object, and on what grounds? The proposed regulations allow for extensive abuse here.

If State agencies comment favorably on these proposed regulations, their comments should be weighed against the consideration that the States will not be receiving appreciable federal money to assume these new responsibilities, and they are more vulnerable to industry and political pressure than EPA is. The fact that they may be incapable of paying for necessary research has not deterred them from asking for greater authority. A state agency that publicly admitted political vulnerability or budgetary restrictions on its ability to accept these responsibilities would probably find itself severely "reorganized."

So much discretion ("flexibility") is given to the States that the public interest, as opposed to industry interests, is no longer protected by EPA regulations, and there is little recourse for appeal if the public disagrees with the decisions made by its State agency.

Unless uniform water quality standards are adopted nationwide, industries will look for States with looser environmental protection standards, and State governments and agencies will face intense pressure to make exceptions for industries that promise jobs.

What happened to the idea that as abatement technology improves, effluent limits would get tighter? The proposed regulations would halt progress towards cleaner streams by dropping requirements for state-of-the-art technology and reverting to a "water quality" based standard, which is itself subject to attrition on technology-limit or economic grounds.

Finally, public notice about this proposed change has been abysmal. Few people read the Federal Register except lawyers paid to do so by industry. In Region 6, no environmental groups knew anything about it until two weeks before the public meeting. Some mail notices were received from the Regional office, but some groups had to learn about it from other environmental groups. In any case, the background information was not readily available until the day of the meeting, and there certainly was not enough time allowed for reasonable study of the materials. It seems as if EPA were attempting to prevent intelligent criticism of its proposals by surprising potential critics and denying adequate review time. The Regional offices should maintain current mailing lists of people and organizations interested in their activities. Public information offices are responsible for just that, and a few press releases defending agency actions do not fulfill that responsibility.

TCONR appreciates this opportunity to comment on EPA proposals. We will be interested in EPA's response.

Sincerely,

Beth Johnson

Beth Johnson
Executive Director

cc: Senator John Tower
Senator Lloyd Bentsen
Hon. Mike Andrews
Hon. Tom Vandergriff

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DAVID KELLEY
VICE CHAIRMAN
73rd ASSEMBLY DISTRICT

April 6, 1983

Honorable Robert A. Roe, Chairman
Subcommittee on Water Resources
Committee on Public Works and Transportation
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Again this year we are writing to request an amendment which would provide for more reasonable conflict-of-interest provisions for members of state water regulatory board.

The Federal Clean Water Act currently being reviewed by your Subcommittee includes in Section 304 (i) (2) (D) limitations for membership on state boards in states which are approved to implement the NPDES permit program. Subsection D provides that the administrator shall promulgate guidelines for state programs, including:

> "funding, personnel qualifications, and manpower requirements (including a requirement that no board or body which approves permit applications or portions thereof shall include, as a member, any person who receive, or has during the previous two years received, a significant portion of his income directly or indirectly from permit holders or applicants for a permit)."

California's program has been approved by the administrator, but the impact of the two-year limitation has been to drastically limit the field of qualified candidates for board membership. Since the state and the regional boards have many functions in addition to

administration of the federal pollution discharge permit programs, it is important to select members who are qualified. The provision in practice excludes many people who have training and background in the boards' responsibilities and, therefore, prevents appointment of those who would be qualified and interested in serving.

The provision is broadly worded. A person falling within the limitation may not serve on a board and disqualify himself on issues affecting any former employers. As an example of the exclusionary effect of this two-year requirement, no employee of the County of Los Angeles, which has 71,000 employees, would qualify for such an appointment. Local governmental entities and industrial, agricultural and commercial enterprises have had to secure federal permits, thus preventing their employees from accepting board positions.

At the same time this Clean Water Act provision was adopted by Congress, the Clean Air Act was amended to include conflict-of-interest standards for state boards applying a different test, but still setting stringent requirements to protect the public interest. The provision reads:

> "Sec. 128. (a) Not later than the date one year after the date of the enactment of this section, each applicable implementation plan shall contain requirements that--
>
> > "(1) any board or body which approves permits or enforcement orders under this Act shall have at least a majority of members who represent the public interest and do not derive any significant portion of their income from persons subject to permits or enforcement orders under this Act, and
> >
> > "(2) any potential conflicts-of-interest by members of such board or body or the head of an executive agency with similar powers be adequately disclosed.
>
> "A state may adopt any requirements respecting conflicts-of-interest for such boards or bodies or heads of executive agencies, or any other entities which are more stringent than the requirements of paragraph (1) and (2), and the administrator shall approve any such more stringent requirements submitted as part of an implementation plan."

This conflict-of-interest limitation has proven workable, permitted appointment of knowledgeable members and yet assured that the members will act without bias.

There is no question that a person receiving income from an applicant or permittee under the NPDES procedure should not act upon matters affecting his employer or clients. California law presently requires full public disclosure of economic interest in any organization affected by the individual's official duties and complete exclusion from any step of the process, including voting, leading to action on the organization's issue.

We, therefore, ask your subcommittee to consider amendment of Sec. 304 (i) (2) (D) to eliminate the two-year limitation. This would greatly enlarge the field of candidates for these positions and assure the public of highly competent decision makers in this important area.

Sincerely,

Senator Rose Ann Vuich
Chairman, Rural Caucus

Assemblyman Patrick Johnston
Chairman, Rural Caucus

RV:PJ:MF:bk

Rusty Crum
Bill Jones
Jack O'Connell
Gary Condit
Marion Bergeson
Henry J. Mello
W. R. Bradley
Thomas M. Hoag
Walter W. Sievers
Gary Keene
William T. Crouch
Ray Johnson
Gary Hart

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

NSPE

October 26, 1983

The Honorable Robert A. Roe, Chairman
Subcommittee on Water Resources
Committee on Public Works and Transportation
U. S. House of Representatives
B-376 Rayburn House Office Building
Washington, D. C. 20515

Dear Mr. Chairman:

I am writing to provide clarification regarding the recent statements provided by the National Society of Professional Engineers and a member of the West Virginia Society of Professional Engineers/West Virginia Utility Contractors Association on successive days before the Subcommittee on Water Resources. I realize the appearance of a member of one of our state societies presenting differing views to NSPE's testimony may have caused some confusion to you and the subcommittee.

First, let me confirm that the statement given by Kermit Prime, P.E., Chairman of NSPE's Legislative and Government Affairs Committee, represents the official views of our national organization. That position has gone through the proper channels in NSPE and has been formally approved by the Society. While we welcome and will continue a dialogue with all of our individual members, the positions advocated by the member from West Virginia clearly represent a small minority of opinion within our national organization.

Second, it is important to point out that NSPE is a federation of state societies. We encourage our state societies to be active in legislative affairs on the state level and to work with our national organization in Washington regarding federal issues. While we do not exercise veto power over pronouncements of individual members or state societies on national legislation and have no desire to do so, we do request to be notified by our state organizations regarding their activities relating to the Federal Government and make every effort to minimize inconsistencies. In the case in question, our national staff was not aware of Mr. Hart's testimony until the morning of the hearing. As a result, we had no opportunity to reach accommodation with those of our West Virginia members who may have endorsed Mr. Hart's testimony.

Third, I would like to comment on the points raised in Mr. Hart's statement. Regarding collection systems, we certainly recognize that this is a special problem, expecially for states like West Virginia. You will note that we did not discuss collector systems in our prepared testimony, although we are anxious to bring in our members from around the nation who can speak to that problem to the subcommittee. Mr. Hart's other major

point concerning a proposed return to a 75 percent federal share for the grants program is clearly at odds with NSPE's position. We had not had an opportunity to explore NSPE's proposals for alternative financing with Mr. Hart, and trust we can resolve that discrepancy.

Finally, I was delighted to learn that you and other members of the subcommittee expressed an interest in continuing a dialogue with NSPE on alternative financing, ocean discharge, combined sewers, pretreatment, and non-point source pollution. I am confident that our Society can make an important contribution on each of these issues, and we look forward to bringing in our members from around the nation who can address these problems in depth. We fully understand that you are seeking detailed, technical information rather than broad policy statements.

In closing, while I realize that the subcommittee was well served to hear about the particular problems in West Virginia, I did want to take this opportunity to clarify this situation. The members and staff of the National Society of Professional Engineers look forward to a continuing dialogue with you and the subcommittee on amendments to the Clean Water Act.

Sincerely,

Donald G. Weinert, P.E.
Executive Director

DGW:kms
cc: Otis Gouty, P.E., President, West Virginia Society of Professional Engineers

MEDIA ATTENTION

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OF PROFESSIONAL ENGINEERS
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WASHINGTON, DC 20006
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No. 213

DATE FOR RELEASE Immediate

Media Contact:
Leslie Collins
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SPECIAL NSPE PANEL TESTIFIES
ON ALTERNATIVES TO CONSTRUCTION GRANTS PROGRAM

WASHINGTON, D.C., NOVEMBER 17, 1983--Congress should thoroughly explore low-interest loans as alternatives to the Environmental Protection Agency's controversial construction grants program for wastewater treatment facilities, according to Kermit Prime, P.E. Prime, representing the National Society of Professional Engineers (NSPE), testified today on amendments to the Federal Water Pollution Control Act. Prime and a special NSPE panel were invited to reappear before the House Subcommittee on Water Resources after his October 19th testimony to that same Subcommittee.

"We propose the grants program be phased out....Basically we are advocating no new starts under the grants program after fiscal 1984," Prime told the Subcommittee. The NSPE panel said the grants program discourages community initiative and causes delays because many municipalities are reluctant to go forward with new construction now "as long as there is a prospect of receiving grants in the future....Proposals to rapidly expand funding levels exacerbate this problem." The program's procedural requirements also cause delays, the panel added.

Prime maintained that "a loan program can be utilized to replace the grants program, and can be implemented without placing unreasonable burdens on ratepayers." He presented an NSPE analysis which compared low-interest loans covering 100 percent of project costs with the current grants program, and pointed out that "with an interest

NOTE: Founded in 1934, the National Society of Professional Engineers (NSPE) is a three-level organization serving over 80,000 members through more than 500 local chapters in 54 states and territories. NSPE is the only society representing every field in the engineering profession.

5 1/

rate somewhere between zero and 6 percent, the loan program can be comparable to the grants program as far as the ratepayer is concerned." Prime explained that under the grants program, communicies receive grants for only a portion of project costs, and usually must borrow at market rates to finance the local share. Therefore, low-interest loans covering all project costs may be more desirable for communities.

The NSPE panel emphasized that the Society is not suggesting any set interest rate but stressed rates must be low enough in comparison with market rates to make them attractive to borrowers. The panel did not suggest what types of construction should or should not be covered by the loans nor who should administer the loan program. The panel also pointed out that direct loans might not even be necessary, saying the Federal government could achieve comparable results by guaranteeing bonds and loans made by the private sector and subsidizing the interest rates.

In addition to their comments on financing, panel members covered:

privatization: They urged Congress to retain those provisions of the tax code that encourage new construction of water and sewage treatment and resource recovery facilities through public/private partnerships.

nonpoint source pollution: "Given the localized nature of the solutions to nonpoint source pollution, an effective federal/state/local partnership must be urged. We believe Congressman Oberstar's bill, H.R. 4037, is a step in the right direction."

The panel also discussed pretreatment and ocean discharge waivers.

Prime is a principal engineer with the Boyle Engineering Corporation, Orlando, Florida. Appearing on the special panel with Prime were: NSPE members Louis Guy, Jr., P.E., a partner in the Burke, Virginia, firm of Guy and Davis; Robert J. Haefeli, P.E., with Havens and Emerson Inc., Saddle Brook, New Jersey; and David McDowell, P.E., with Buchart-Horn, Inc., Lewisburg, Pennsylvania.

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FRIENDS OF THE EARTH

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PUBLIC WORKS AND TRANSPORTATION COMMITTEE

28 February 1983

James J. Howard, Chairman
Committee on Public Works and Transportation
U.S. House of Representatives
Room 2165 Rayburn House Office Building
Washington, DC 20515

Dear Congressman Howard:

Subj: Subcommittee on Water Resources Meeting on 23 and 24 February 1983.

It has come to our attention that the Subcommittee on Water Resources was to have met in Washington, DC on 23 and 24 February 1983 to receive testimony on the proposal by the U.S. Environmental Protection Agency (EPA) to change its regulations for the establishment of water quality standards. We regret that it was not possible to send a representative to the meeting to present testimony in person; however, we hope that it will be possible to submit limited written testimony at this time. We feel that the importance of this topic is such that we must at least make a statement for the record.

There have been a number of proposals by the EPA in the past two years to reduce the level of environmental protection in this country. We believe that the current proposal is one of the same type. As you know, if the EPA is successful in changing its regulations to make them more lenient the impact will last far beyond the current administration.

One of the kinds of things the EPA is attempting to do is illustrated in the enclosed copies of three pages from the briefing book prepared by the Northwest Federal Regional Council for Governor Sheffield of Alaska as he was taking office in December 1982. For a number of years placer mining has been one of the most damaging sources of water pollution in Alaska. Nevertheless, the EPA has failed to act to enforce the Clean Water Act by issuing National Pollutant Discharge Elimination System (NPDES) permits which specify best practicable treatment (BPT) as was to have been in place by 1977 and has failed to require compliance with Alaska water quality standards. The EPA is now attempting to write what may end up being a lenient permit and is hoping to be able to make it more lenient by getting the state to change its water quality standards so that streams on which placer mines are in operation will be reclassified for industrial use only. EPA Region X Regional Administrator John R. Spencer has personal friendships with people influential in the Alaska Miners Association and may have encouraged them to petition for these changes. If this ploy is successful, the EPA will have succeeeded in reducing water quality standards on a large number of streams in Alaska, many of which were once productive fish streams. We believe this would be clearly illegal under the Clean Water Act and would violate the existing anti-degradation policy incorporated into EPA regulations. However, it appears to be precisely the kind of thing the EPA is attempting to accomplish in its proposal to change the regulations.

Northwest office, 4512 University Way NE, Seattle, Washington 98105, (206)633-1661

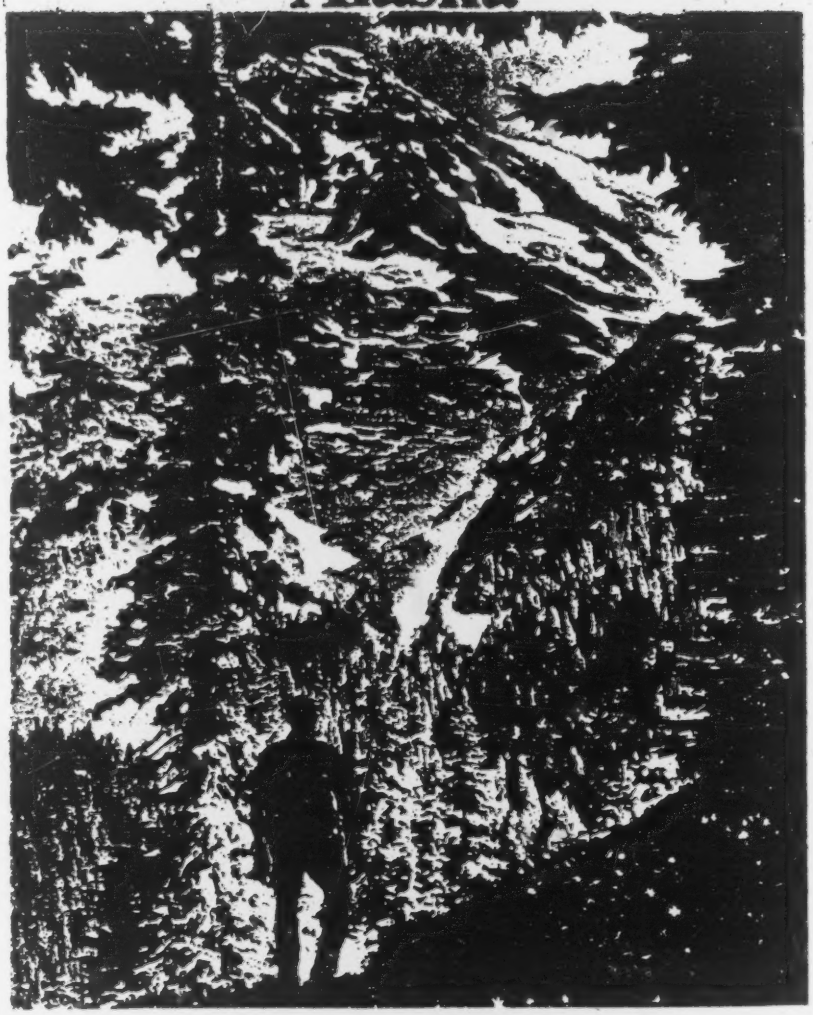
Also enclosed is a copy of the comments which I submitted to the EPA in January 1983 regarding the proposed regulation changes. As indicated therein, it appears that the EPA is resurrecting a controversy that occurred some 15 years ago and which it was thought Secretary of the Interior Udall had disposed of at that time. We need to go forward in protecting our resources in this country not, as the EPA now proposes to do, backward.

Thank you for your consideration. Please keep us informed of developments on this topic if possible. We'd particularly appreciate a copy of the hearing record in this matter and a copy of any relevant documents indicating action taken by your committee with regard to it. We are encouraged that the U.S. House of Representatives is attempting to perform its vital oversight function in this and other similar matters bearing on environmental protection (including protection of human health). It's a shame that the EPA cannot be relied upon to perform its statutory functions otherwise.

Sincerely,

G.M. Zemansky

Alaska



Briefing Book for

Governor Sheffield

Prepared By

Northwest Federal Regional Council

NPDES PROGRAM (Enforcement)

The National Pollutant Discharge Elimination System (NPDES)--i.e., the wastewater discharge permit program--is currently administered in Alaska by EPA. This permitting program is intended to prevent the discharge of harmful pollutants to waters of the United States by insuring compliance with EPA national guidelines and State water quality standards. Major categories of activities permitted include: seafood processing, placer mining, oil and gas activities, and municipal wastewater discharges. In order to run an effective program as Congress intended, EPA will be involved in enforcement actions against significant permit violators.

It is EPA's hope that the State will choose to take over the Federal permitting responsibility. Feasibility studies have been completed, but, to this date, the Alaska Department of Environmental Conservation has shown little interest in assuming EPA's role.

While EPA has the program, the State certifies the individual permits which are issued. The State inspects the permitted facilities and provides advice to EPA on potential enforcement actions against violators. The State has a parallel permit program but usually defers to EPA and the Federal permitting system.

If the State were to take on the program, legislative and regulatory changes would be needed: primarily to stiffen penalties, to gain authority over federal facilities and to be able to issue permits based on national guidelines.

PLACER MINING - WATER QUALITY STANDARDS REVISIONS

Since Alaska has not assumed responsibility for issuing water discharge permits required by the Clean Water Act, it is up to EPA to issue them. EPA is currently developing one general permit (as opposed to single permits for each individual mining operation) that will apply, in time for the 1983 mining season, to all 800 or so Alaska placer miners.

Any discharge permit issued may be restrictive because the Clean Water Act requires the permits to be consistent with State Water Quality Standards. In Alaska's case, the streams to which the placer miners discharge are classified for use as drinking water sources. If the use classification is changed the water quality standards could allow EPA to make corresponding adjustments in its discharge permit. Certain mining districts are expected to petition for a change in the standards.

The State needs to evaluate its water quality standards and determine whether any use classifications should be changed. If a change is appropriate, the revision needs to occur quickly so that the new standards are in place for the 1983 mining season. Further, the State needs to provide comments to EPA on the language of the proposed general permit. EPA Region 10 will get EPA Headquarters concurrence on a general permit and issue it before the 1983 season starts.

On a related matter, EPA needs the States help in developing a strategy for dealing with those miners operating in 1982 who didn't comply with conditions of the EPA issued administrative orders.

ORE MINING

Environmental impact statements and wastewater discharge permits must be completed in a timely and effective manner in order for new mining developments to proceed on schedule. The impact statements are being prepared by Federal agencies. The discharge permits will be issued by EPA.

Three major ore mining projects need permitting actions in 1983:

1. U.S. Borax - Quartz Hill (molybdenum)
2. Noranda - Green Creek (zinc, lead, silver gold)
3. Cominco - Red Dog Mine (zinc and lead)

Environmental Impact Statements are underway for all three projects. Effluent guidelines which recently promulgated by EPA require no discharges from the milling process for new sources. U.S. Borax has been excluded from this requirement pending the results of the Environmental Review Process. Noranda exploration is not affected by the no-discharge limit since construction of the project began before the limitation was proposed. The Cominco project, which is just getting started, will be subject to the no-discharge restriction. It is anticipated that these projects represent the beginning of increased activity in the ore mining industry in Alaska.

The State is expected to make timely and substantive comments on the impact statements.

EPA will be a major participant in the preparation of the impact statements and, after certification by the State, will issue the necessary discharge permits.

OFFSHORE EXPLORATION

The Federal Clean Water Act requires oil companies to submit waste discharge permit applications to EPA for oil and gas exploration, development and production wells. Section 403(c) of the Act requires a thorough environmental analysis before issuing permits.

Given recent and proposed offshore oil and gas lease sales, EPA's role in permitting these activities will be increasing. In order to provide a timely permitting process, Region 10 is developing "general permits" for discharges resulting from exploration activities. This is intended to replace previously required individual permits before permitting an activity in a given geographical area. General permits for oil and gas exploration in the Beaufort Sea and Norton Sound should be issued in early 1983. Others will follow soon thereafter.

#205
5319 24th Ave., NE
Seattle, WA 98105
24 Jan.'83

David K. Sabock, Chief
Criteria Branch, Office of Water Regulations and Standards
EPA
401 M St., SW
Washington, DC 20460

Dear Mr. Sabock:

Subj: Proposed Changes to Water Quality Standards (WQS) Regulations.

Ref: (a) Federal Register, Vol. 47, No. 210, p. 9234 (29 Oct.'82).

In accordance with reference (a), these comments are submitted with regard to this subject. Whereas there may be some need for a carefully considered review and possibly revision of regulations applicable to water quality standards in order to upgrade them to better achieve the objectives of the Clean Water Act, the proposal of reference (a) appears instead to be a blatant attempt to weaken the regulations from what currently exists. Furthermore, what is being proposed is in some cases in direct contradiction to statutory provisions of the Clean Water Act. The EPA does not have the authority to change the law and in attempting to do so is usurping the U.S. Congress.

What is proposed with regard to antidegradation is exemplary. EPA apparently wants to turn the clock back 15 years to the controversy that developed in late 1967 with regard to initial promulgation of water quality standards under the Water Quality Act of 1965. The genesis of the current regulation is Interior Secretary Udall's compromise decision in February 1968 to allow a loophole based on "necessary economic or social development" in an otherwise absolute provision that degradation was simply not to be allowed because that's what the law said. When the loophole was applicable existing uses were still to be maintained. EPA would, in essence, now make the loophole the general case and do away with the real antidegradation provision. This is contrary to the requirements of the Clean Water Act which have so far been upheld in court. The antidegradation policy as specified currently in regulations should either remain as is or be upgraded by doing away with any loopholes whatsoever. Allowing degradation to the bottom of a beneficial use classification ignores the reality of biology and allows degradation. It also presumes that we know more about appropriate establishment of water quality criteria for beneficial uses than we really do. Furthermore, it should be clearly specified that any consideration of allowing a variance to the antidegradation policy (in the event that the current policy is retained intact) should undergo full and complete public participation as required under Section 101(e) of the Clean Water Act.

The review of standards within agencies may in practice result in prioritization and more of a continuous than a 3 year cycle discrete process; however, I do not believe that the Clean Water Act allows the EPA to change its regulations and process to what is proposed. Your attention to Section 303(c)(1) of the Clean Water Act is requested. That calls for a 3 year cycle discrete process with public participation including a public hearing. Many states have done a poor job of adhereing to that requirement and the EPA has been willing to overlook long gaps in compliance (for example, refer to the case in Alaska). Shifting to a continuous process leaves the WQS more vulnerable to subtle attack when the general public is unaware and uninvolved and appears to be designed to allow industry, in concert with state agencies and the EPA to short circuit

the process. It should also be recognized that having stable standards for a 3 year period is beneficial to both industry and the public to the degree that it establishes a known yardstick against which performance can be judged that everyone is aware of. If it can change at any time, with enough exercise of political power, industry doesn't know what standard it may have to comply with (and may in fact bank on getting a standard changed for its benefit rather than planning to comply) and the public doesn't know what level of protection it will be getting.

The proposed changes with regard to use attainability appear to be an effort to go backward and to reward recalcitrant polluters at the same time. Reference to agricultural or industrial uses as the "best uses" rather than aquatic habitat appear to be efforts calculated at obtaining reclassification of streams to become industrial sewers. Paricularly where a stream has been so polluted that beneficial uses (such as for fish habitat) assigned have not been obtained, this approach would reward recalcitrant polluters who have so far failed to comply with the Clean Water Act. Neither is the concept of benefit-cost analysis applicable to this kind of environmental regulation or allowed under law. The Clean Water Act requires the application of technology to achieve the objectives of the law and, as the courts have agreed, this may result in the closing down of marginal plants that generally cannot compete for other reasons anyway. The net effect on the economy and the environment being positive in both cases.

The present EPA procedures for developing water quality criteria in general and site-specific criteria in particular are flawed and need to be upgraded in order to achieve the objectives of the Clean Water Act. Furthermore, they assume a scientific capability and information base which simply doesn't exist. In this regard, it is greatly disappointing that the EPA went so far backward with its "redbook" of water quality criteria in 1976, as compared to the "bluebook" written by the National Academy of Sciences and National Academy of Engineering in 1972. The criteria for some of the priority pollutants of October 1980 brings some improvement back, but there are still many holes and great reliance is still placed on the faulty and incomplete "redbook".

The proposal at 131.13(c) to allow variances to WQS is in direct contradiction to the Clean Water Act. There is no foundation whatsoever in law for it and it would undoubtedly lead to great abuses if adopted that would be counterproductive to implementation of the Clean Water Act.

In summary, the proposal of reference (a) is so badly flawed and so counterproductive to achieving the objectives of the Clean Water Act that it should be completely shelved. The current regulations are adequate for the time being. Any need for changes should be carefully considered from a fresh perspective. Furthermore, unlike the present process, full and complete public participation from the earliest stages with full information should be incorporated. In this case, there was considerable public notice, distribution of information, and public meetings late in the process after the EPA had already achieved a position it had a stake in. Your attention is directed to 40 CFR §25, 33 USC §1251(e), and the EPA's public participation policy.

Thank you for this opportunity to comment. Please inform me of the outcome of this process.

Sincerely,

M Zemansky

G.M. Zemansky

HENRY J. HYDE
6TH DISTRICT, ILLINOIS

COMMITTEES:
JUDICIARY
FOREIGN AFFAIRS

2104 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515
(202) 225-4561

Congress of the United States
House of Representatives
Washington, D.C. 20515

April 11, 1983

Honorable Robert A. Roe, Chairman
House Public Works Subcommittee
on Water Resources
Room B-376 Rayburn House Office Building
Washington, D. C. 20515

Dear Mr. Chairman:

I understand your Subcommittee will be looking at the need to amend the Clean Water Act sometime within the next few months.

I am enclosing a copy of the American Die Casting Institute comments relating to the Clean Water Act and the EPA Effluent Limitations Guidelines. I would appreciate your making them a part of the congressional hearing record when the hearings on the Clean Water Act amendments are held.

Very truly yours,

Henry J. Hyde

HJH:nns
Enc.

American Die Casting Institute, Inc.
2340 Des Plaines Ave (River Rd) • Des Plaines, IL 60018 • Phone 312/298-1220
Cable AMDICASTIN

COMMENTS ON

METAL MOLDING AND CASTING POINT SOURCE CATEGORY

EFFLUENT LIMITATIONS GUIDELINES AND PRETREATMENT

STANDARDS

47 Fed. Reg. 51512 (November 15, 1982)

Proposed By The

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Pursuant To

THE CLEAN WATER ACT

Submitted by the

AMERICAN DIE CASTING INSTITUTE

February 10, 1983

DIE CASTING RESEARCH FOUNDATION, INC.

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I. INTRODUCTION

The American Die Casting Institute ("ADCI") welcomes this opportunity to comment on the Effluent Limitations Guidelines for the Metal Molding and Casting Point Source Category proposed by EPA on November 15, 1982, and the supporting technical Development Document and the Economic Impact Analysis for the proposed standards and limitations published and distributed in December 1982 by EPA. ADCI was founded in 1928 and is the trade association of the die casting industry representing more than 190 custom and captive die casting plants which employ more than 25,000 people.

As a whole, the total die casting industry's sales, based on ADCI's estimates for 1981, are as follows: custom die casting sales were $1,659,000,000 and captive die casting plant sales were $2,078,000,000. This total sales volume of $3.7 billion excludes the value of tools, dies, electroplating and finishing treatments. By comparison, the production by ADCI members represents 54 percent of total custom die casting sales and 25 percent of combined custom and captive die casting sales.

The industry operates die casting machinery which use non-ferrous metals (mostly aluminum and zinc, and to a lesser extent magnesium, copper, and tin) to produce precision parts. Most industry plants are small.

The regulations proposed by EPA, if enacted, would have a major adverse impact on the industry and will result in a substantial and unacceptably large number of plant closures and job losses.

At this time, the die casting industry is facing critical economic times. Our member companies, mostly small independent businesses, make die cast component parts for a number of other industries, including automobiles, appliances, computers, farm machinery, toys, military gear, communications equipment, etc. Therefore, not only are our members affected by general economic conditions, but also by conditions in nearly every other industry relying upon die casting production and sales.

ADCI shares EPA's desire to control pollution in accordance with the pertinent laws and regulations. Cognizant of EPA's mandate to consider the economic impact of its rules, and because of our long-standing concern that EPA's regulations under the Clean Water Act might have a substantial adverse impact on our members, the Institute has actively followed the development of these regulations. Over the past few years, the ADCI has met with personnel from EPA's Effluent Guidelines Division in Washington, D.C., and submitted information regarding the die casting industry. Most recently the President of the Institute, Peter A.R. Findlay and, William T. Andresen, its Technical Director, presented oral comments on the proposed pretreatment

standards at the public hearing held by EPA on January 10, 1983 in Washington, D.C. These written comments submitted today are intended to supplement the information previously submitted by ADCI to EPA. For the reasons explained in detail below, the American Die Casting Institute believes that many of the provisions of the proposed regulations are unwarranted and unjustified and should be revised.

II. SUMMARY OF POSITION

EPA's determination of BPT, BAT, and PSES for die casting processes is based upon assumptions and general data on the much broader foundry industry which are totally inaccurate with respect to die casting plants. Die casting processes should be exempted from the proposed effluent limitation guidelines for the Metal Molding and Casting Point Source Category. At the very least, all small die casting plants should be given a complete exemption and limitations for remaining plants utilizing die casting process segments should be revised. Furthermore, the timetable for compliance with the PSES should be extended to three years from date of promulgation.

Because of significant flaws in the underlying data collected and relied upon by EPA, ADCI believes it is imperative that additional studies be undertaken before promulgation of final rules. ADCI requests EPA to extend its proposed schedule for issuance of effluent limitation guidelines for the die

casting industry to allow time to undertake a special EPA-industry study of the best available technology.

Upon completion of this study and evaluation of the results, EPA should exempt or re-propose rules for the die casting industry.

III. DIE CASTERS SHOULD BE EXCLUDED FROM THE PART 464 REGULATIONS

A. The Proposed Rules Fail to Recognize the Distinct Differences Between Die Casters and Foundries

A major flaw in the technical Development Document and Economic Analysis supporting the proposed regulations is the failure to properly distinguish die casting processes from other processes included in the proposed regulated category such as sand castings and traditional foundry operations. The nature of the die casting industry, with its inherent high-speed production techniques, demonstrates that it should be regarded as a manufacturing process, totally separate from the foundry industry and the connotations that are associated with the term "foundry."

In brief, the broader foundry industry comprises, sand, permanent mold, and low pressure (which relate more to the traditional foundry process), plus die casting which is a distinctive manufacturing technique for mass-producing identical parts at high rates of production, using highly sophisticated die casting machines, tooling, and ancillary mechanization equipment.

Die casting plants range in size from less than one million dollars of sales per year, to several million dollars of

sales. However, the industry's overall structure clearly falls into the small business category.

EPA's failure to make an appropriate distinction is not surprising given the approach which has been taken in the past by the Office of Federal Statistical Policy and Standards of the U.S. Department of Commerce, which administers the Standard Industrial Classification (SIC). For many years, it has been evident that die casting is inappropriately included with non-ferrous foundries under SIC Group No. 336. Currently, segments of the die casting industry, i.e., aluminum, copper, magnesium and zinc alloys,all fall under this category and are reflected within the four-digit industry Nos. 3361, 3362 and 3369. For the past two years, ADCI has been seeking a revision to the SIC which would recognize the unique nature of the die casting process and establish separate SIC classification numbers for die casters. We were hopeful that appropriate changes would be made by now, but on February 4, 1982 the Department of Commerce announced that because of "budget limitations" the revision of the SIC Manual, which had been proposed for publication in 1982, would be postponed (See 46 Fed. Reg. 10123 and 47 Fed. Reg. 5385).

Of course, we recognize that a separate SIC classification alone may not by itself justify a separate category, subcategory, or exemption from effluent limitation guidelines under the Clean Water Act. At the same time, however, the current SIC classification system fosters regulatory activities which seek to

regulate die casters as foundries without making important distinctions which we believe are vital to the establishment of well-informed and reasonable regulatory requirements. Like porpoises in a fishing net, our small industry continues to be "caught up" with foundries which we contend is a separate and distinct group.

B. The Proposed Limitations Constitute a "Major Rule" for Die Casters and EPA Must Comply with the Requirements of Executive Order 12291 and the Regulatory Flexibility Act.

One of the first actions undertaken by President Reagan following his inauguration was the issuance of Executive Order No. 12291 establishing special requirements for federal agencies designed to reduce the burdens of future regulations (46 Fed. Reg. 13193, February 19, 1981). This Executive Order, which applies to EPA, provides in pertinent part that to the extent permitted by law, all agencies shall not undertake regulatory action unless the potential benefits to society from the regulation outweigh the potential costs to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future.

Because section 304 of the Clean Water Act clearly contemplates consideration of costs in establishing nationwide effluent limitation guidelines, there is no justification for failing to carry out the full mandate of Executive Order

No. 12291. Nonetheless, it appears EPA has attempted to avoid the full impact of Executive Order No. 12291 by concluding that the proposed regulation for the Metal Molding and Casting Point Source Category is not a "major rule." EPA's determination that this is not a major rule is incorrect.

The term "major rule" is defined by the Executive Order to mean any regulation that is likely to result in an annual effect on the economy of $100 million or more. ADCI believes the overall economic impact of the proposed rule will exceed this $100 million figure. ADCI asserts that the $100 million test is not the only prerequisite for a determination that a rule is major. Section 1(b)(2) and (3) states that a rule is major if it is likely to result in "a major increase in costs or prices for ...individual industries...or significant adverse effects on ...employment, investment, productivity..."

In the preamble discussion to the proposed regulation, EPA admits that the rule is likely to have a substantial impact on individual companies and employment. According to EPA, "as a result of compliance with this regulation, 25 plant closures (10 direct dischargers and 15 indirect dischargers) with total unemployment of approximately 484 workers result. (47 Fed. Reg. 51525). This projection of more than two dozen plant closures (which we believe significantly understates the maghitude of losses) and several hundred additional people waiting in unemployment lines is especially large when compared with the

projections of no plant shutdowns EPA has made in connection with other categories. The significance of these closures were noted in the remarks presented at the public hearing by ADCI President Peter A.R. Findlay. As explained more fully in these comments, at page 43, ADCI estimates that these proposed rules would reduce the total number of die casting plants by approximately 20 percent. Because of the relatively small number of non-ferrous die casting plants, any shutdown is significant. With the present poor state of the economy, EPA should avoid any action which will lead to further unemployment.

For example, in the proposed effluent limitations guidelines for aluminum forming plants published on November 22, 1982, EPA explained:

> The initial analysis indicated that five of the 18 small dischargers were potential closures if subject to the regulation, all of them indirect dischargers in the extrusion and drawing subcategories. Accordingly, EPA proposes that indirect discharges in the extrusion subcategory producing less than three million pounds per year and indirect dischargers in the drawing with emulsions or soaps producing less than one million pounds per year should be excluded from these requirements. If these small plants are excluded, no plants are expected to close as a result of the regulation. (47 Fed. Reg. 52626 at 52638).

The proposed Effluent Limitation Guidelines for the Battery Manufacturing Point Source Category, published just five days before the Metal Molding and Casting Point Source Limitations, will cause no plant closures, according to EPA predictions. (47

Fed. Reg. 51052, 51056, November 10, 1982). Likewise, in proposing Effluent Limitations Guidelines for Copper Forming on November 12, 1982, EPA projected no plant closures or job losses (47 Fed. Reg. 51278, 51285).

Given EPA's admission of the large number of plant shutdowns and job losses associated with the Metal Molding and Casting Point Source Category, in sharp contrast to its projections of no plant closures with other regulations issued in November, it is clear that the proposed rule affecting die casters is a "major rule" subject to the full review requirements of Executive Order No. 12291.

The Regulatory Flexibility Act (Public Law 96-354) imposes additional special requirements on EPA to consider the impact of the proposed rules on small businesses. The Regulatory Flexibility Act opens with an express Congressional declaration that "uniform federal regulatory...requirements have in numerous instances imposed unnecessary and disproportionately burdensome demands ... upon small businesses." (section 2(a)(3)). As explained in more detail in these comments, the Regulatory Flexibility Act requires EPA to avoid imposing uniform requirements throughout the nation which have a significant adverse effect on small businesses without a corresponding benefit. The Act specifically allows EPA to grant small businesses additional time to achieve compliance and even complete exemption from coverage of a rule, or any part thereof. (See section 603(c)).

Executive Order No. 12291 and the Regulatory Flexibility Act in juxtaposition with the evidence of substantial adverse impacts the proposed rule will have on non-ferrous die casting plants without corresponding environmental benefits provides a substantial basis for granting a complete exclusion from the nationwide effluent limitations for this industry, which constitutes an extremely small segment of the group covered by the proposed Metal Molding and Casting Point Source Category regulations.

C. Die Casting Plants, Adequately Controlled By Existing NPDES Permit Limits, Water Quality Standards and General Pretreatment Rules, Should Not Be Included in the Categorical Nationwide Effluent Limitations

The non-ferrous die casting industry comprises an extremely small portion of the production by plants which have been arbitrarily grouped within the proposed Metal Molding and Casting Point Source Category. According to EPA's own figures, "ferrous castings have accounted for about 90 percent of the total tons produced annually since 1956." (47 Fed. Reg. 51513). Furthermore, the technological Development Document reports that plants engaged in the molding and casting of iron and steel account for 98 percent of the total direct discharge volume for the category (page 49). Thus non-ferrous die casting accounts for less than two percent of the direct discharge volumes subject to the rules proposed for the Metal Molding and Casting Point Source Category. Many die casting plants are small

operations. Non-ferrous die casting plants do not contribute significant amounts of pollutants to the nation's waterways.

While EPA points heavily to a few isolated plants which supposedly have achieved 100 percent recycle of their wastewaters, and other plants which do not use water, the fact remains that many of our member companies must use a "wet" process to produce the type of high-quality product needed by their customers. Furthermore, contrary to the supposed findings of the technical Development Document, we do not believe that zero discharge of pollutants can be achieved by these wet process plants. In any event, the costs of achieving the proposed limitations for die casting plants, especially small plants with less than 250 employees, are totally disproportionate to the predicted environmental benefits and also totally out of scale in relation to the pollution-control costs imposed upon other industry groups.

For these reasons, a complete exemption from nationwide limitations for small die casting plants is justified and we believe mandated by the requirements of the Regulatory Flexibility Act and Executive Order No. 12291. In making this request, we are not seeking a total exemption from pollution-control laws. Indeed, direct dischargers are already subject to NPDES requirements which assure that sufficient controls are installed to meet water quality standards. Likewise, indirect dischargers must meet applicable pretreatment regulations, both

the general pretreatment regulations established by EPA at 40 C.F.R., Part 403, and more specific requirements established by local municipal treatment works.

There is ample case law and regulatory precedent to grant this exclusion. The Consent Agreement between EPA and the Natural Resources Defense Council, as revised and approved by the United States District Court for the District of Columbia in 1979, specifically provides EPA with discretion to exclude from the nationwide technology-based regulations a category or sub-category where the amount and toxicity of each pollutant in the discharge does not justify developing national regulations. (12 E.R.C. 1833). Non-ferrous die casting plants satisfy this criterion for exclusion.

Even if EPA is hesitant to grant an exclusion for the entire group of non-ferrous die casters, at the very least, pursuant to its authority under the Clean Water Act, the District Court decision, and its mandate under the Regulatory Flexibility Act and Executive Order No. 12291, it should exclude those segments of the die casting industry where the costs are most disproportionate to the benefits. At a minimum, the subgroups which without question warrant exclusion are zinc die casting plants, which with a handful of exceptions, are very small, and all other small non-ferrous die casting plants. It is our understanding that The Castings Effluent Technology Fund has submitted a petition to EPA requesting an exclusion for the zinc

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casting industry. That request should be granted.

Throughout the proposed regulation, EPA requests comments on what rationale may be employed to exempt smaller plants. In addition to the reasons mentioned above, which are elaborated upon further on in these comments, we find additional support for such an exemption in other regulatory actons taken recently by EPA. For example, on November 23, 1982, in promulgating final rules for the Leather Tanning Category, EPA provided an exemption for certain small plants, stating as follows:

> EPA's economic analysis projected that the cost of chromium control would result in disproportionate economic impacts on small plants...no less costly chromium controlled technology options or less stringent standards could be identified for these plants. Therefore, the PSES regulations for chromium do not apply to small plants which process less than...however small plants...would still be subject to comply with general pretreatment regulations. (47 Fed. Reg. 52848, 52857).

The leather tanning industry is not the only place EPA has provided exemptions for small dischargers. As already noted, in proposed regulations for aluminum forming plants, EPA proposed an exemption for small indirect dischargers.

IV. THE PROPOSED REQUIREMENTS ARE NOT TECHNOLOGICALLY ACHIEVABLE AND FAIL TO RECOGNIZE SIGNIFICANT DIFFERENCES AMONG PLANTS

Section 304 of the Clean Water Act specifies several factors EPA must take into account in determining the control measures and practices constituting BPT and BAT. These factors

include "the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, [and] non-water quality environmental impact (including energy requirements)...." Our review of the technical Development Document reveals that EPA's approach to assessing these factors is defective for several reasons. First, EPA has relied heavily upon a few plants for a conclusion that certain technologies are available to several hundred other plants. Second, EPA developed and distributed in 1977 an extremely complicated questionnaire to solicit data, the results of which EPA relied upon to project plant capabilities. This questionnaire produced misleading information. Third, EPA erred in its conclusion that most plants do not generate process wastewater and have zero discharge. For these and additional reasons explained more fully below, the regulations applicable to die casting plants should either be deleted from the final rules or substantially revised to more accurately reflect the factors EPA is required by statute to consider in establishing BPT, BAT and pretreament standards.

One additional general comment must be made about the state of the administrative record before addressing specific points. The administrative record consists of a few dozen hastily assembled notebooks in the EPA library whose contents are not indexed. It is difficult if not impossible to determine which data corresponds to a particular plant and how EPA derived

such data. EPA has not helped this situation by steadfastly refusing to respond to the questions we raised at the public hearing in Washington or January 10, 1983. The inadequate record makes the prepreparation of meaningful comments almost impossible. The net result is we have been denied the prior notice and due process of law to which we are entitled under the Administrative Procedure Act and the U.S. Constitituion.

A. The Data Base Relied Upon by EPA is Not Representative of Die Casters

Several procedural, statistical, and apparent factual errors have combined to yield a misleading portrayal of the die casting industry. At the outset, as mentioned earlier, the die casting industry is technically distinct from foundries. The practices employed by foundries, typically large ferrous plants, are not necessarily transferrable to the smaller, non-ferrous die casting plants. Second, EPA relies heavily upon stale data submitted in response to the data collection portfolio of questionnaires distributed in 1977. A close examination of the administrative record, however, reveals that numerous smaller plants had tremendous difficulty completing this questionnaire and many (more than 200 plants) did not return it at all because of its extreme length and complexity. (These letters are included in Volume 464-6.1, book 1 of the administrative record.) Thus, many typical die casting operations may have failed to submit information which would have shown EPA that the

type of BPT, BAT and pretreatment technologies EPA assumes are widely utilized and otherwise available, are not.

The flaws in EPA's selection of so-called representative plants are compounded by the use of a telephone survey. Because few details about the scope of the telephone survey are provided in the technical Development Document, it is difficult for us to evaluate its thoroughness and objectivity. In the absence of information about whom EPA surveyed by telephone at each plant-information which we have not been provided -- it is impossible to determine whether the person surveyed had sufficient knowledge of his company's processes to provide accurate and reliable information. Unless EPA can fully substantiate in independently prepared written documentation the data it gathered by telephone, no telephone data should be included in the record as support for the proposed rules. Given the confusion small die casting companies had with the earlier written questionnaire, we doubt that a telephone survey filled in the gaps. Instead, the telephone survey would tend to simply exaggerate the misinformation already on file with EPA because of the Agency's apparent use of the telephone calls to confirm information from a few isolated plants it believes can achieve zero discharge while ignoring those plants that for a variety of reasons have not. Nothing in the Clean Water Act or the Administrative Procedure Act allows a regulatory agency to proceed in this manner.

B. EPA Has Failed to Recognize and Compensate for the Impact of Old Equipment

Section 304 of the Clean Water Act requires consideration of "the age of equipment and facilities involved" in determining BPT and BAT. EPA has responded to this statutory mandate with the following incredible statement in the technical Development Document:

> The age of a foundry has no bearing on the applicability of installing water pollution control equipment at that facility. Some foundries, which have operated at the same location for over 100 years, replaced melting furnaces as recently as five years ago and sand handling systems as recently as ten years ago. Process wastewater treatment equipment age varies from 30 years for some equipment items to less than one year for the more recent system installations or additions to the old treatment systems...." (Emphasis added)(pp. 50-51.)

Contrary to the assertion in the technical Development Document, the age of a die casting plant may have a tremendous bearing on its ability to install water pollution control equipment, both from a technological and economic standpoint. Many existing facilities, especially those located in cramped quarters in densely populated urban areas, are not easily modified. Given the type of complete retrofitting and plumbing overhaul EPA would seek to have facilities undertake to achieve complete recycle, many existing facilities would have to totally terminate operations and essentially build a new facility. The extremely depressed economic climate of 1983 does not allow these older facilities the luxury of shutting down already marginal plants

and replacing them with costly new equipment. We find no specific identification in the administrative record of the number of plants involved which would be required to undertake expensive retrofitting or completely replace existing equipment. These questions must be addressed more specifically before any final regulations are promulgated.

C. Land Availability Constraints Have Not Been Given Appropriate Consideration

In a brief discussion, the technical Development Document concludes that "the elimination of process wastewater discharges would not be hindered by the limited availability of land reported by plants responding to the information request. In addition, though many plants use settling ponds or lagoons for solids removal, the more space-efficient clarifiers have been included as part of the BPT and BAT model treatment systems." (Pages 51-52.) Contrary to this finding, the truth is many die casting plants are located in densely populated urban areas which lack sufficient land to install the types of additional control equipment which would be needed to even approach the types of treatment efficiencies called for by the proposed regulations.

D. Zero Discharge of Process Wastewater Pollutants is Impossible

EPA is seeking to impose limitations on several die casting operations requiring no discharge of process wastewater pollutants to navigable waters or to a POTW. EPA, relying upon

actual observations at only a handful of die casting plants and the questionable findings of a telephone survey, says that this can be achieved by 100 percent recycle. EPA has incorrectly concluded that 100 percent recycling is the normal practice within this category of point sources.

Recycling all process water is NOT the normal practice within this industry category, at least for non-ferrous die casting plants. EPA's small sample of die casting plants does NOT demonstrate that 100 percent recycle is proven technology. Nothing in the records demonstrates this point. The Agency's refusal to reveal the names of some of those die casting plants it contends achieved 100 percent recycle does not assist one's analysis and such unidentified plants cannot be used to support nationwide rules.

EPA has not demonstrated that 100 percent recycle is practiced in the die casting industry. In the zinc casting subcategory, EPA identified only one melting furnace scrubber which purportedly achieved 100 percent recycle. (technical Development Document, p. 643.) Nonetheless, EPA feels confident in moving forward to require the entire segment of zinc die casting plants using melting furnace scrubbers to achieve zero discharge of pollutants because other scrubbers in this category (i.e., other than zinc die casting plants) have achieved zero recycle. We believe EPA's reliance on technology transferred from other subcategories is misplaced. Indeed, EPA recognized

that 100 percent recycle had not been demonstrated for melting furnace scrubber operations in the aluminum casting subcategory. Furthermore, EPA set BAT at BPT levels for aluminum melting furnace scrubbers explaining "complete recycle is not a viable BAT option because the technology to achieve complete recycle has not been demonstrated by aluminum plants with melting furnace scrubber processes and cannot be readily transferred." (technical Development Document, p. 925; proposed 40 C.F.R. section 464.11(b).)

For similar reasons, we find no basis in this record that 100 percent recycle has been demonstrated for all zinc melting furnace scrubbers and certainly the technology has not been proven to be readily transferred to the zinc die casting operations. Accordingly, the requirement for 100 percent recycle and zero discharge from zinc melting furnace scrubber processes should be withdrawn.

Even if EPA does not withdraw these regulations, nothing in the record supports imposition of zero discharge requirements at the BAT level for zinc die casting melting furnace scrubbers. According to the technical Development Document (p. 939), imposition of a zero discharge BAT limitation over the proposed BPT limitations would reduce toxic pollutant loads by only another 44 kilograms per year nationwide. Both in terms of absolute numbers and comparisons to pollutant reductions achievable at other process segments, this incremental reduction

is entirely insignificant. Given the additional costs involved to approach total recycle, such regulatory action cannot be deemed consistent with the mandates of section 304, the Regulatory Flexibility Act, and Executive Order 12291.

Nothing in the Combined Metals Base ("CMB") provides reliable data for die casting. The CMB shows the results of lime and settle treatment for 55 plants in the following categories: aluminum forming; battery manufacturing; coil coating; copper forming; electroplating and porcelain enameling. None of these are even remotely related to die casting.

While 100 percent recycle may be theoretically possible and is most certainly a desirable objective if it can be achieved at affordable costs without sacrificing quality, the experience of our member companies shows that in practice 100 percent recycle is impossible. Many die casting operations rely upon quench tanks to cool the hot castings and to develop certain properties in the cast metal which are essential to satisfy customer requirements. Nothing other than these quench tanks can achieve these necessary process objectives. Members of the ADCI have tried to increase water reuse and recyling but found that the quality of their product is not maintained. (See, e.g., the letter transmitted to EPA on August 14, 1980 by Richard Strassman, an engineer with Badger Die Casting Corporation of Milwaukee, Wisconsin, a manufacturer of zinc and aluminum alloy die casting since 1919.)

The types of equipment used in non-ferrous die casting preclude achievement of zero discharge. Unlike many other casting operations, die casters inject the raw material metals under extremely high pressures which can reach 20,000 psi. The tendency of equipment to release liquid at these pressures is magnified by the frequent variations in pressure within the machine. For example, a die casting machine may alternate between high pressure and atmospheric pressure 200 times per hour. This type of operation can rapidly cause fatigue stress in hydraulic lines leading to inevitable leaks.

Numerous other technological obstacles stand in the way of achieving 100 percent recycle on a sustained basis. As recycle levels increase, slimes and other bacterial growths develop within the piping system and bacteriacides must be introduced to prevent system blockages.

The buildup of dissolved solids is another factor which bars 100 percent recycle. The intake water used in die casting plants unavoidably contains dissolved minerals and as water is recycled the concentration of these dissolved solids continues to increase because of water evaporation losses. These dissolved solids must be removed from the loop, otherwise the buildup would continue until scaling occurs because the dissolved solids reach their limit of solubility. Industry has traditionally controlled the buildup of total dissolved solids by either periodically or continuously replacing some of the water in the system or remov-

ing sludge with a very low solids content. This material is then discharged from the plant. We believe it is likely that many of the so called zero discharge facilities identified by EPA in fact discharge this residue.

With the assistance of Dr. James Etzel of the Environmental Engineering Department at Purdue University, we have also considered some of the specific technologies EPA declares are supposedly available to us to achieve zero discharge. According to Dr. Etzel, none of these technologies can do the job. Emulsion breaking, for example, runs into the problem discussed above. The addition of acids, bases, or coagulants raises the inorganic total dissolved solids significantly and thus compounds salt accumulation problems. Even though the oil is removed, the emulsifying agent remains soluble and stays in the wastewater effluent. These emulsifying agents will accumulate, if not removed, and will biologically decompose with time. This process will cause piping system fouling, corrosion, and odor problems of major proportions. Any removal of soluble constituents by emulsion breaking would have to be by adsorption on the oil or floc surface and could not be relied upon from day-to-day because of the inability of the process to remove soluble constituents.

Dr. Etzel also criticizes chemical precipitation because the salts used in the process add significantly to the total dissolved solids of the treated wastewater. Furthermore, organics are hardly removed by chemical precipitation and the

levels of heavy metals such as copper, zinc, etc. which remain are above those necessary to meet the proposed EPA limits for BPT and BAT.

Four other major processes identified by EPA to treat the wastewater can remove only suspended solids and do not address the critical soluble constituents. These four processes are: granular bed filtration; pressure filtration; settling and skimming.

Dr. Etzel has also raised serious reservations about the so-called minor technologies presented by EPA. As Dr. Etzel points out, the major processes alone cannot achieve zero recycle and for a plant to even approach zero recycle, it would have to employ these so-called minor technologies. Given their complexity and costs, minor is a misnomer.

Carbon adsorption, for example, will not remove inorganics of any consequence. It removes some organics, but far from all of them. Centrifugation works with only non-colloidal particulates. Because of its cost and complexity, it is a much less attractive approach than settling, skimming, and filtration for removal of particulates.

Evaporation can probably provide a good quality condensate for recycle but the process is extremely expensive in terms of energy consumption and yields a residue of solid waste which may possibly be toxic.

Dr. Etzel also points out that gravity sludge thickening and sludge bed drying are processes of value only for the disposal of removed suspended solids and they will not aid in achieving total recycle. In short, there is no process or processes together which can achieve 100 percent recycle of treated wastewater.

Dr. Etzel recommends EPA consider a biological approach for the treatment of die casting effluent. This approach should be carefully evaluated before EPA proceeds any further with this rulemaking.

E. EPA's Published Data on Several Identified Plants Are Inaccurate and Such Plants Are Not Representative of the Die Casting Industry.

Because of the short time available to review the poorly organized assemblage of data compiled by EPA, we have not had time to conduct as thorough a study as we would wish to analyze the accuracy of this information. Nonetheless, we found numerous errors in EPA's data base in the time we had available for our review. Indeed, we found so many inaccurate references to plants we know about that there is good cause to question the accuracy of data we have not yet had time to review. For this reason, we request EPA to stay further action on die casting limitations for a six month period to allow a joint ADCI-EPA study of the plants EPA believes have achieved zero discharge. This will also allow more time for both EPA and ADCI to study the benefits of a biological treatment approach developed by Professor Etzel.

One example of errors in EPA's data base involves plant No. 29697 (Du Well Products of Dowagiac, Michigan). EPA claims this is a plant producing zinc castings. This is untrue. This plant only produces aluminium castings. (See page 859 of the Technical Development Document). EPA states that this plant is an example of zero discharge for zinc casting and quench operations. The truth is that the pollution control program at this plant consists of a holding tank from which oil and grease are removed when they float to the top. This oil and grease is taken away from the site by a contract hauler. The remaining liquid in the tank is periodically decanted untreated and discharged into a publicly owned treatment works. This is a good and effective method of treating waste water, but it is not zero discharge of pollutants. This discharge of pollutants is insignificant and thus provides further evidence in support of granting a complete exclusion for die casting plants.

Our review of the record reveals that EPA also erred in its conclusion that plant 04809 (Oster, McMinnville, Tennessee) is a typical aluminum die casting plant and that it is achieving zero discharge. The fact is this plant does not achieve zero discharge and is not typical of die casting operations. It is a captive operation with only two aluminum casting machines producing only forty tons per year of pure aluminum rotors. Pure aluminum is not the normal alloy used by most aluminum die casters. As we explained at the public hearing, the flow diagram

provided by EPA in the administrative record for this plant shows that only a normal recycling of non-contact cooling water takes place at the Oster plant. There is no provision for zero discharge of wastewater. (See page 816 of the Technical Development Document and the plant diagram in Book 13 of the administrative record).

EPA has also erred in its conclusions about plant 26767 (Milwaukee Die Casting, Inc., Milwaukee, Wisconsin). Contrary to the reference at page 816 of the Technical Development Document, this plant is not an example of an aluminum die casting plant with zero discharge. Our review of the record reveals that this plant had an actual discharge of 13,896 gallons and 12,886 gallons on two consecutive days (see Book 10 of the administrative record).

Other examples abound in the record of mischaracterizations of plants. Plant No. 05947 (Hardware Division of Emhart Industries, Berlin, Connecticut) is alleged by EPA to be an exemplary zinc cast and quench plant with 100 percent recycle (Technical Development Document, page 859). Contrary to EPA's statement, all this plant does is recycle the non-contact cooling water. (See Book 25 of the administrative record). Furthermore, some of the arithmetic underlying EPA's computations appears to be incorrect. How can 7,200,000 pounds of metal be poured in a year on one production shift requiring 3,500 pounds. (See Book 25, Part II, page 1).

Plant No. 10308 (Consolidated Die Casting Division of Sealed Power Corporation, Dowagiac, Michigan) is another example of EPA's mischaracterizations. EPA improperly characterizes this plant as achieving 100 percent recycle. According to what we read in the Technical Development Document at page 131 and 859, this plant actually discharges 50,000 gallons twice each month from batch treatments.

Plant 20147 (Outboard Marine Corporation, Waukegan, Illinois) is alleged by EPA to be an exemplary plant with zero discharge of die lubricant. This is not true. This plant even tried reverse osmosis and ultra filtration systems, both of which had to be discarded when the filters plugged up (See Technical Development Document, page 854 and administrative record Book 21).

These discrepancies and inconsistencies which run throughout EPA's data collection documents are very disturbing and cast substantial doubts about the accuracy of any of EPA's conclusions. We have not yet been able to identify the calculations used by EPA to determine BAT limitations for aluminum die casting. Do such computations exist, if so, where are they published? We requested this information from the EPA and EPA's contractor, NUS Corporation, at the hearing in Chicago on [illegible] 12, 1983. It is our impression that neither EPA nor NUS can supply this information. In the absence of such supporting in-

formation and in the absence of public release of such information, no standards can be promulgated for this subcategory.

We also question EPA's reference to pounds of metal poured to determine allowable discharge amounts. Many die casters do not regularly compute the amount of metal poured. They make rough calculations corresponding to the weight of castings per shift employing a yield factor. Other die casters keep a record of metal melted by the amount purchased and add back a yield factor. Neither method is accurate.

F. The Pretreatment Standards Fail to Properly Consider All Pertinent Factors

The proposed PSES, which for the most part impose zero discharge requirements, warrant careful attention because of the enormous costs involved and projections of numerous plant closures and job losses. To a large extent, EPA's proposed PSES are based upon hypothetical assumptions about what the Agency predicts will be the removal rates if its proposed BAT is used compared with what is actually achieved on an average basis by POTW's nationwide. This approach developed by the Agency to define passthrough lacks the type of sound, scientific analysis mandated by the Clean Water Act and Executive Order No. 12291. Treatment for treatment's sake is clearly inconsistent with the policies established by the Regulatory Flexibility Act.

In establishing pretreatment standards, Congress directed EPA to take into account the treatment capability and

performance of the POTW into which a discharge is made. The Technological Development Document contains removal credit efficiencies determined on an average nationwide basis for seven toxic metals and cyanide. Instead of relying solely upon these figures in a hypothetical calculation to determine "passthrough", we believe the regulations should allow credit for removal by certain major urban POTW's which handle significant quantities of discharges from die casting plants. In the absence of a nationwide rule allowing removal credits, a separate subcategory should be established for each POTW where data submitted to EPA by the POTW and interested die casting plants shows that the POTW can adequately treat and remove the substances discharged by the die casting plant. For example, if not withstanding the facts that discharge from die casting plants are insignificant, EPA decides to promulgate final standards, a separate subcategory should be established for aluminum and zinc die casting plants which discharge to the Metropolitan Chicago Sanitary District. The information compiled by the Metropolitan Chicago Sanitary District (see letter attached as an appendix to our comments) and numerous aluminum and zinc die casting plants which discharge into the POTW shows it is capable of removing all pollutants of concern to EPA without the need for the additional PSES proposed by EPA.

In any event, if the proposed regulations are made final, EPA should clearly provide that the zero discharge PSES

does not bar some discharge of pollutants to the extent allowed by removal credits under the general pretreatment rules.

We also are concerned about the procedures for implementing PSES. How does one determine the allowable discharge under the combined waste stream formula where stormwater enters the system? How can plants commit to achieving the moving compliance target created by EPA which darts up and down depending upon the metal poured. If PSES must be imposed, they should be set in the more familiar concentration format.

V. THE ECONOMIC IMPACT OF THE PROPOSED REGULATIONS ON THE DIE CASTING INDUSTRY IS PROHIBITIVE.

A. EPA Must Avoid Imposing Requirements Which Impose Excessive Costs Without Corresponding Benefits.

In establishing effluent limitations guidelines, EPA must give careful consideration to the costs of the proposed rules on the regulated entities. In establishing BPT limits, section 304(b)(1)(B) specifically states that the EPA "shall include consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application." For BAT, this section requires EPA to take into account the cost of achieving such effluent reduction. Executive Order No. 12291 imposes a clear mandate on EPA to insure that the benefits of the regulation exceed the cost.

In the words of the United States Supreme Court, "[u]nder section 304, the Administrator is directed to consider

the benefits of effluent reductions as compared to the costs of pollution control in determining BPT limitations. Thus, every BPT limitation represents a conclusion by the Administrator that the costs imposed on the industry are worth the benefits in pollution reduction that will be gained by meeting those limits." (EPA v. National Crushed Stone Association, 449 U.S. 64, 15 ERC 1209, 1213-1214 (1980)).

Against these considerations there are virtually no benefits to weigh on the other side of the scale. Aluminum die casting plants account for less than two percent of the total wastewater flow in the foundry category. Aluminum die casting plants account for only 0.7 percent of the conventional pollutants and 0.1 percent of the toxics. For all aluminum die casting plants, the total amount of toxics to be removed per day, in the aggregate, under the proposed rule is 4.2 pounds. In terms of aluminum, this would amount to about the size of a golf ball. Because aluminum is one of the most abundant and ubiquitous elements on earth, the removal of these trace amounts for aluminum die casting plant discharge is absurd. The small benefits are not worth the enormous costs.

Where a regulation has a significant impact on a substantial number of small business entities, the Regulatory Flexibility Act (Public Law 96-354) imposes additional special requirements. These requirements include preparation of a Regulatory Flexibility Analysis and the establishment of rules which are consistent with the findings and purposes of the Regulatory

Flexibility Act. In the findings and purposes, clause, Congress declared:

> "Uniform federal regulatory and reporting requirements have in numerous instances imposed unnecessary and disproportionately burdensome demands...upon small businesses."

While EPA prepared a Regulatory Flexibility Analysis for the Metal Molding and Die Casting Point Source Category, the Agency has failed to recognize the significant adverse impact these rules will have on small entities. Indeed, in the preamble to the proposed rules, EPA states: "The Agency has concluded that this regulation will not have a significant impact on a substantial number of small entities." This conclusion is contradicted by the record as EPA finds that least 25 companies will be forced to terminate operations. Furthermore, this finding is inconsistent with the Regulatory Agenda published by EPA on October 28, 1982, pursuant to the Regulatory Flexibility Act. In the Agenda announcement concerning the Metal Molding and Casting Category, EPA said that it would be "likely" the rule would effect small entities. (47 Fed. Reg. 48726, 48737). Finally, EPA has failed to provide the requisite certification to the Small Business Administration.

B. Economic Impacts

The economic impact of the proposed regulations is staggering. The costs involved would be difficult enough to support in good economic times such as the mid 70s. The costs

simply cannot be absorbed now in the depression-like climate of the nation's industrial heartland where most die casting operations lie.

Before turning to specific comments, it is important to make some general observations about EPA's economic analysis. At the outset, it virtually ignores the impact of imports. The largest market for die castings is the automobile industry. As more and more cars are imported from overseas and corresponding reductions in manufacturing take place in the United States, the die casting industry is in a squeeze from which it may never recover. This import situation is not limited to automobiles. It also affects other markets which use die casting parts such as appliances, household products and consumer goods. While we recognize it is difficult to assess the overall impact of die castings that are components of imported products, EPA's failure to properly consider this important factor casts great doubt on the accuracy of its economic analysis.

The die casting industry is capital intensive. For many years it has been unable to generate an acceptable return on investment leading many corporate owners of die casting plants to divest such operations. Considering that capital expenditures for the pollution control equipment sought by EPA (and related major changes to plant plumbing which EPA ignored) will cost from $500,000 to $1,000,000 or more, plus very sizable annual operating costs, it does not take an economic wizard to realize that

many die casting plants will simply close down because of an inability to finance the required new facilities. EPA concedes that possible closure of plants and resultant loss of jobs . . ." represent the most visible and critical factor requiring assessment." Nonetheless, EPA has failed to make a proper assessment and give appropriate weight to this critical factor. Because EPA has significantly understated the financial costs, EPA's estimates of plant closures and job losses are grossly understated. If these rules are made final, the die casting industry as we know it today will be decimated and this nation's capacity to produce vital die cast parts will be critically wounded.

EPA's economic analysis is out of date. The basic study was made in 1977-1978. While in some cases these values have been translated by EPA into 1982 dollars, the economic climate is entirely different today then it was in 1977 and a correction for the value of the dollar alone is insufficient to predict economic impacts. The difference in interest rates between 1977 and today is another major cost factor overlooked by EPA. It will be far more costly to raise capital now than it was in 1977. In any event, because the capital investments and operating costs involved will begin to be incurred in 1984 and beyond, EPA should scale its costs forward. If we assume that EPA's 1977 estimates are indeed correct, which in itself is questionable, we can certainly project that actual capital investment and operating

costs beyond 1984 will be some 50 percent to 75 percent higher, thus adding to the economic burden being placed upon the die casting industry.

The average cost of removing pollutants for the metal molding industry BPT guidelines, according to EPA's documentation, is $5.59 per-pound-per-year of pollutant removed. By comparison, the cost per-pound-per year of removal for the aluminum die casting process, again based on EPA's figures, is about $35.00 per pound per year. This figure is almost seven times the molding industry average! Given the small amount of pollutants to be removed per year and multi-million dollar capital investments required by EPA's proposed rules, the costs are totally disproportionate to the benefits. For the battery manufacturing industry, EPA estimates the cost of BPT will be $0.59 per pound of pollutant removed per year. Compared to this, the cost of BPT for aluminum die casting is sixty times greater. How does EPA justify this?

According to EPA's own guidelines under the Regulatory Flexibility Act, these facts compel a finding that this rule is significant and that an exemption should be provided for die casters. In a memorandum dated April 14, 1982, Joseph A Cannon, Associate Administrator for Policy and Resource Management announced that Administrator Gorsuch had approved a memorandum dated February 9, 1982 on EPA's Implementation of the Regulatory

Flexibility Act. Page 7 of the guidelines identifies a regulatory impact as significant when annual compliance costs increase production costs by more than 5 percent or when the regulatory requirements are likely to result in closures of small plants. These circumstances exist for die casters.

We turn now to more specific comments on particular portions of the Economic Analysis Document (EPA-440/2-82-016).

1. Page I-3, Closure Tests - Jobber Debt/Equity Test

EPA does not identify the quantitative values used for this test (other than the amplification provided on pages III-27 to -31, inclusive). The inference is that if the difference between debt and equity is more than the amount of the loan requested, a bank will then approve a loan. This is an oversimplistic and impractical proposition.

Fixed Charge Coverage Test

If a company's pretax/pre-interest earnings were only two (2.0) times the total proforma interest expense, then that company would be generating so little profit that, for all practical purposes, it would have inadequate financial resources for operating on a continuous day-to-day basis, i.e., bankruptcy is just around the corner.

Cost Absorption Test

The choice of 5 percent minimum return on net worth is arbitrary and highly arguable. First, did EPA use 5 percent pretax or 5 percent after tax? Secondly, is it reasonable to contend that 5 percent is an acceptable minimum? Did EPA consider recent revisions to the tax code decreasing deductions relating to pollution control equipment? Current experience indicates that a die casting plant, operating within a corporate entity, must significantly exceed a 5 percent after-tax return on net worth; if it doesn't, it will likely be sold. Twenty percent after-tax return on net worth is a more realistic criteria, to allow for shareholder earnings, reserves, modernization and expansion, etc. The die casting industry is recognized as a capital-intensive industry which, for many years, has been unable to generate acceptable profit levels and return on investment, as viewed by many potential corporate purchasers. For this reason, many corporate owners of die casting plants have divested themselves of their die casting operations, unless other non-financial considerations represented more important reasons for retention (e.g., captive facilities, production control, etc.).

In conclusion, the tests conducted by EPA, separately or collectively, are unrealistic for establishing those companies that are likely to be closed down due to the impact of the proposed EPA regulations. Generally, the criteria used are quantitatively too low; averaging of data is used, which is

misleading; and some of the measuring devices (e.g., tonnage produced, number of employees, etc.) are inappropriate.

The tests chosen by EPA for this economic evaluation clearly indicate EPA's lack of understanding of the range of basic factors that should appropriately be used for evaluating the financial strength of a business operation. Therefore, the conclusions made by EPA regarding the economic impact of the proposed regulations are unrealistic and unjustified.

2. Page I-4, Closure Test - Captive Price Pass-Through Test

Similar arguments to the foregoing for jobbers (item No. 1), also apply to captive operations. The 5 percent maximum pass-through of cost increases, chosen by EPA, is completely arbitrary (notwithstanding further clarification provided on pages III-43 and-44). EPA disegards the effects of the ratio of period costs to direct costs; the effects of variable sales volume; and the need for a captive operation to provide an adequate return on investment and assets; etc. In short, EPA's criteria are overly simplistic, impractical; and arbitrary. Therefore, the conclusions made by EPA regarding the impact of the proposed regulations on captive plants are unrealistic and unjustified.

3. Page I-6, Plant Closure and Employment Loss Impacts

EPA concedes that possible closure of foundries and resultant loss of jobs . . . "represent the most visible and

critical factor requiring assessment." EPA proceeds to estimate the number of companies that would be forced to close down as a result of the proposed regulations. In view of EPA's financial assumptions, we contend that EPA's estimates are grossly understated.

4. Page II-2, Structure of Foundry Industry Overview

The last paragraph, last sentence, states: "In contrast, non-ferrous castings accounted for only 9 percent of the tonnage and 36 percent of its value, but they represented 51 percent of the establishments."

This statement clearly indicates that the economic impact of the proposed EPA regulations will fall upon a multiplicity of smaller companies who are least equipped financially to cope with the substantial capital investment and operating costs involved.

The die casting industry falls within the "non-ferrous castings" category referred to, which substantiates our viewpoint that the die casting industry will be decimated.

5. Page II-59 to -69, Aluminum Foundries

This section constitutes an overall profile of aluminum foundries. Although aluminum die casting represents 65 percent of total tonnage quoted (page II-60), we submit that "tonnage" is only one criteria of measurement. The die casting process is substantially different from other cast processes (i.e., sand and

permanent mold). Therefore, the statistics presented by EPA within this industry profile, regarding unemployment distribution, sales and financial data, cannot be regarded as typical for the die casting industry. Even if the profile was developed exclusively for aluminum die casting, there are substantial differences between custom and captive plants, and further substantial differences within both the custom and captive sectors, that preclude drawing general conclusions.

On page II-68, last paragraph, EPA recognizes that aluminum die casting operations yield minimal return on investment..."one quarter of the larger foundries had no profits at all." This further substantiates our opinion that the die casting industry cannot economically afford the cost of compliance with the proposed EPA regulations.

These comments further support ADCI's long-standing contention that die casting is a separate manufacturing process from other casting processes; that die casting is not perceived to be a foundry process; that separate SIC classifications should be provided for the die casting industry (as was proposed in 1982--but subsequently deferred due to federal budget restrictions); and finally, that the die casting industry should be exempted from the proposed EPA regulations on the grounds that its contribution to pollution of the environment is minimal, that alternative pollution control regulations prevail to adequately control any pollution effects from the industry, and that the

costs of compliance with the proposed EPA regulations cannot be economically justified.

6. Pages II-80 to -89, Zinc Foundries

This section constitutes an overall profile of zinc foundries. Comments made in the previous item regarding the combination of aluminum die casting and other casting processes similarly apply to this zinc foundry profile. In addition, EPA recognizes (see page II-81, Operational Structure) that 70 percent of the 341 foundries specializing in zinc casting have fewer than 50 employees, with very low profit margins and return on investment. The economic comments made for "aluminum" also apply for "zinc."

7. Pages V-1, -2, and -3, Regulatory Flexibility Analysis

EPA discusses criteria used for small, medium, and large businesses, and concludes (page V-2, paragraph 3) that ..."50 employees is a realistic delineator of maximum size for a small foundry." This conclusion, EPA alleges, is based on subjective, qualitative terminology used by foundry managers and trade groups. Relative to the die casting industry, we would disagree. As mentioned by EPA on page V-1 (last paragraph), the Small Business Act specifies "that the maximum employee size for 'small' foundries ranges from 500 for ferrous foundries...." The definition provided by the Small Business Act is an appropriate reference to determine what is a small plant.

8. Page VI-1 (et al), Analysis of Economic Impacts

This section of the Economic Analysis summarizes the situation. The remarks contained in this commentary have been primarily directed towards the effects upon aluminum and zinc die casters, as this represents the two major metals used in the die casting industry. It is recognized that the proposed EPA regulations will also apply to die casters of magnesium, copper-base and lead alloys. It is important to note that, on pages VI-25 to 30, comments and data specific to aluminum indicate that the economic impact on the aluminum die casting industry (which represents approximately 74 percent of all die castings produced) would indeed be very significant--more so than is conveyed by the earlier sections of the Economic Analysis.

Based on extrapolation of confidental and proprietary data available to ADCI from its members, we estimate that, within 5 years, 32 ADCI companies will be forced to close their operations, resulting in the layoff of 824 employees (an average of 25.75 employees per company). If this data is extrapolated to the total custom die casting industry (estimated at 498 plants), this will reduce the number of custom die casting establishments by 95 plants (approximately a twenty percent reduction), and the number of employees that will lose their jobs will be 2,400 (a ten percent reduction).

C. EPA Has Failed to Properly Consider the Additional Solid Waste Disposal Costs

Section 304 of the Clean Water Act requires EPA to consider non-water quality environmental impacts. It is undisputed that one of the major impacts of water pollution control is the generation of sludges and other solid wastes which will require land disposal. In the discussion accompanying the proposed rules, EPA states the estimated average costs of disposal of the sludges is $5.00/ton on the basis of July 1978 dollars and the cost of waste oil disposal was determined to average seven cents per gallon, again based on 1978 dollars. EPA states these sludge disposal costs agree with the median sludge disposal costs of $4.70/ton determined on the basis of the EPA phone survey conducted in 1981. Apparently these costs were based on 1980 dollars and assume that the sludges were not hazardous. We believe these cost figures are substantially understated, especially if the sludges are found to be hazardous under the EP Toxicity Extraction Procedure.

D. An Exemption Is Clearly Warranted for Small Plants

Section 603(c) of the Regulatory Flexibility Act requires EPA to include in each initial Regulatory Flexibility Analysis "a description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities. Consistent with the

stated objectives of applicable statutes, the analysis shall discuss significant alternatives such as (1) the establishing of differing compliance or reporting requirements or timetables which take into account the resources available to small entities...; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities." This authority should be utilized to grant the requested exemption for small plants.

The remaining question for discussion is the size plant that should be selected as an appropriate cut-off level for exclusion. EPA discusses criteria used for small, medium, and large businesses, and concludes in its Economic impact Statement (page V-2, paragraph 3) that ... "50 employees is a realistic delineator of maximum size for a small foundry." This conclusion, EPA alleges, is based on subjective, qualitive terminology used by foundry managers and trade groups. Relative to the die casting industry, we disagree. EPA's own regulations have for years deferred to the Small Business Administration for a definition of a "small" plant (40 C.F.R., Section 21.2). As mentioned by EPA in its Economic Impact Statement (Page V-1, last paragraph), the Small Business Act specifies "that the maximum employee size for "small" foundries ranges from 500 for ferrous foundries ..." This number is the number used by SBA for a definition of a small firm that is bidding on a contract for Government procurement. 13 CFR 121.3-8(b)(3).

Another term used for definition of a small business by the SBA is found in the definition of small business for SBA loans (13 CFR 121.3-10). Under that section any manufacturing concern is classified as small if it is primarily engaged in an industry [where] its number of employees does not exceed 250 persons. (13 CFR 121.3-10(b)(2)).

EPA has developed an alternative guideline to determine whether the effect of regulation on small business is significant pursuant to the April 14, 1982 Memorandum from Joseph A. Cannon, EPA Associate Administrator, regarding the Regulatory Flexibility Act. As mentioned earlier in these comments, the EPA memorandum states there is a significant impact upon small entities if a regulation is likely to result in closures of small entities. EPA thus recognizes that the proposed effluent limitation guidelines are likely to shut down numerous small plants and EPA seeks to identify a suitable means to exclude small plants from regulation. In its Proposal for Rulemaking EPA has stated that it has suggested a 50 employees cutoff for a small plant exclusion in order to minimize plant closing.

The EPA proposal is certainly a step in the proper direction but does not go far enough. This absolute number of 50 employees does not meet EPA's own desire to protect small entities as plants with 56 or 130 may also be small and will be thrown at a competitive disadvantage with plants with 50 persons and under. The die casting industry is highly competitive, and

there is also great variance in the size and shape of products based upon metal or metals directly poured. Plants differ greatly in the number of "peripheral" employees such as secretaries, salespeople, shipping personnel etc. Thus if employees is chosen as the basis for identifying small plants, to promote a more uniform basis for comparison, production area employees should be the criteria selected to define "small business." "Production area employees" should be defined in a manner to eliminate clerical and sales personnel not essential to the production of the casting in order to accurately determine plant employee size.

Another suitable indication of small plant size, if EPA must use absolute number of employees, appears in EPA's proposal at 47 Fed. Reg. 51,526 where EPA urges "small foundry operations to use Small Business Administration financing as needed for pollution control equipment." Since 250 is the number required for this definition by SBA (and thus supported by EPA), EPA must and should use this 250 employee definition for the number of total employees for exemption under the Rules.

VI. THE COMPLIANCE DATE FOR PSES SHOULD BE THREE YEARS AND THE DEADLINE FOR BAT SHOULD BE EXTENDED

If, notwithstanding the reasons mentioned previously in these comments for providing a total exemption for the die casting industry, EPA decides that some or all segments of the die

casting industry must be subject to effluent limitation guidelines, EPA should provide greater flexibility in the timetable to achieve compliance for indirect dischargers into publicly owned treatment works. The proposed regulations provide only two years for existing facilities to achieve compliance with the pretreatment standards. (Section 464.04). This tight deadline is out of line with the final regulations for Leather Tanning that allow existing sources three years to achieve compliance (See 40 C.F.R. section 425.05, 47 Fed. Reg. 52848 (November 23, 1982)). Furthermore, the proposed regulations for Battery Manufacturing allow three years for compliance for PSES (section 461.04) as do the proposed regulations for Copper Forming (40 C.F.R. section 468.04). No reason is given in the proposals for limiting the Metal Molding and Casting Point Source Category to only two years while allowing others three years to achieve compliance.

The request for additional time is founded not simply on seeking an equitable result with other industry groups. Many existing die casting plants are decades old and will require substantial modification. To even approach the 100 percent recycle rate EPA believes is possible will require enormous replumbing projects. Many facilities are located in urban areas and lack unoccupied land on which to construct treatment facilities and they will be particularly hard pressed to restructure existing operations to effect greater pollution reduction efficiencies.

Allowing three years to achieve compliance with the PSES for the die casting industry is authorized by the Clean Water Act and would assist EPA to fulfill its mandate under the Regulatory Flexibility Act to consider the special needs of small businesses. Specifically, the Regulatory Flexibility Act authorizes and requires the EPA to consider "the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities." (section 603(c)(1)).

Accordingly, given the special needs of the die casting industry, which consists mostly of small companies, the EPA's decisions to allow other industry groups three years to achieve the PSES, and the statutory authorization to extend compliance dates for small business entities, EPA should revise proposed section 464.04 to allow three years after promulgation of the regulation for compliance with the PSES.

Likewise, it is impossible for our industry to meet the July 1, 1984 deadline to BAT. When the Clean Water Act was enacted, the Congress contemplated extended periods of time between rulemaking and the BAT deadlines. This obviously is no longer the case and EPA should ensure measures are taken to allow our industry sufficient time to respond to new requirements.

VII. CONCLUSION

For the reasons set forth above, the American Die Casting Institute believes that serious flaws exist in the technological and economic analyses developed and utilized by EPA in support of its proposed regulations to establish effluent limitation guidelines for die casting plants. Based upon the information presented by ADCI, EPA should grant a complete exclusion to die casting plants from the proposed nationwide regulations. In the alternative, ADCI respectfully requests EPA to defer further action in proposing regulations for die casting plants until a joint EPA-ADCI study can be undertaken to examine more closely the performance of the so-called exemplary plants. In this regard, ADCI would work with EPA and an acknowledged third party consultant, such as Professor James Etzel of Purdue University, to evaluate the actual degree of recycle being practiced by exemplary plants. ADCI further proposes that upon completion of these studies and analysis of the results, EPA would then re-propose effluent limitation guidelines for the die casting industry.

Pending completion of this study of the so-called exemplary plants, ADCI would work with EPA to support a special effort to study the technological and economic benefits of utilizing a biological treatment approach to waste water discharges from die casting plants.

ADCI submits that the Die Casting Industry constitutes only 2 percent of the Metal Molding and Casting Point Source Category. Moreover, the Die Casting Industry, in terms of requirements for pollutants removed, accounts for only 0.72 percent of the conventional pollutants and 0.15 percent of the toxic pollutants. Thus ADCI urges that based upon these infinitesimal amounts of pollutants involved that total exemption is justified.

In closing, we are hopeful that EPA appreciates the enormous financial impact these rules, if made final, would have on our industry. Given the mandate of the Clean Water Act to consider costs, the special requirements of the Regulatory Act Flexibility and Executive Order 12291, we believe it would be arbitrary and capricious, an abuse of discretion, and contrary to statutory mandate for EPA to move forward with its proposal without making the changes requested here.

Sincerely yours,

Peter A. R. Findlay
President
American Die
Casting Institute

cc: Ernst P. Hall
Edward Dulaney
John W. Kukulka
Ellen Siegler

APPENDICES

A. Metropolitan Chicago Sanitary District

NICHOLAS J. MELAS
PRESIDENT

Cecil Lue-Hing
Director
Research & Development

THE
METROPOLITAN SANITARY DISTRICT
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April 27, 1981

Mr. E. Stanley Enlund, President
Chicago Association of Commerce and Industry
130 South Michigan Avenue
Chicago, Illinois 60603

Subject: Proposed Pretreatment Regulations

Dear Mr. Enlund:

Pursuant to the request from Mr. James Harrington, Chairman of your Subcommittee on Pretreatment, for information concerning the District's position on the United States Environmental Protection Agency's General Pretreatment Regulations for Existing and New Sources (40CFR403), please be advised of the following:

1. Presently, the District is expending 3.5 million dollars per year in support of its industrial waste pretreatment program. In the event that the proposed 40CFR403 regulations are imposed, we estimate that our cost of complying with the more stringent requirements for sampling, surveillance and enforcement of industrial waste discharges, as set forth in 40CFR403, would be approximately 7.0 million dollars.

2. Since September, 1969, the District has been actively enforcing its Sewage and Waste Control Ordinance. This ordinance requires pretreatment, by industries, of their industrial waste discharges into the District's sanitary sewerage system and waterways. Rigorous enforcement of this ordinance has enabled the District, in 1980, to achieve a 99.6 percent compliance level with the limitations contained in the NPDES permits for the District's seven wastewater treatment plants.

   It is important to note at this point, that the 0.4 percent of non-compliance is due mostly to fecal coliform violations. Fecal coliform is a pollutant leading

related primarily to domestic waste and storm water runoff in the combined sewer system, rather than the discharge of industrial wastes. At present, the Illinois Pollution Control Board is deliberating on a proposal that will relax the disinfection requirement. If such relief is granted, the District will no longer be required to meet fecal coliform limitations, and our number of NPDES violations should therefore decrease.

In the event that 40CFR403 regulations are implemented as proposed, the only benefit that the District anticipates from this program will be a slight reduction of some pollutants in the influent raw sewage at our treatment plants. This reduction would be of negligible value and the effect on our effluent quality and compliance performance mentioned above would not be quantifiable.

3. The District will not be able to grant to industries the removal credits which are provided in 40CFR403. This is due to the fact that we will be unable to comply with the stringent prerequisites which must be met in order to grant these credits. The concept of removal credits was included in the regulations, to allow POTW's who demonstrate incidental removal of pollutants to make allowance for this incidental removal, and therefore relax the categorical standards placed on industries. However, so many stringent requirements were placed on POTW's who wish to grant removal credits, that the allowance is simply not workable or practicable in large POTW systems with large industrial communities.

An alternative approach, which is favored by most large POTW systems, would be to set aside the categorical standards and allow large POTW's to prescribe their own standards on industrial waste dischargers, based on the POTW's ability to meet their own NPDES permit limitations. Such local POTW industrial waste standards would be able to take into consideration such unique local conditions as the type of industries present, their relative total POTW loading, type of sewer system, etc.

Following this approach, the difficult and practically insurmountable problems presented by the removal credit restrictions will be averted; and the nation's waterways will be protected by the NPDES permit system, backed up by the technical and managerial competence of the nation's large POTW systems.

4. The District has special concern regarding the categorical standards for the iron- and steel-making industry. Since 1969, the District has required that the five major steel-making facilities, located in its jurisdiction, cease discharging their industrial waste effluent to the receiving waterways. As a result, these five facilities have constructed industrial waste treatment plants that have eliminated all process discharges to the receiving waterways, as shown on the attached Table 1. Each constructed treatment plant combines many process waste streams and provides a central treatment plant for each steel-making facility. These central treatment plants discharge a treated effluent blow-down to the District's Calumet Sewage Treatment Plant. The blow-down discharge is in compliance with the requirements of the District's Sewage and Waste Control Ordinance.

If the 40CFR403 regulations are implemented along with the proposed categorical standards for the iron- and steel-making industries, these central industrial treatment plants, which were built at great expense over the past several years, and which are in compliance with the District's Sewage and Waste Control Ordinance, will be incapable of meeting the proposed requirements for individual process streams. Numerous new treatment plants would have to be built; each one treating individual waste streams. The collective cost for construction and for operation and maintenance for these individual treatment plants would greatly exceed the cost of the existing central treatment plants. The new plants would not result in any improvement in receiving water quality.

In closing, we wish to reemphasize the alternative approach, mentioned above, which is favored by most large POTW systems. This alternative approach would provide an effective and workable methodology by which POTW systems are responsible for setting industrial waste discharge limitations and managing their own enforcement programs. The POTW systems would be held accountable for their pretreatment program performance through the NPDES permits governing POTW discharges to the receiving waterway.

Very truly yours,

Cecil Lue-Hing, D.Sc., P.E.
Director
Research and Development

CLH:RL:SWW:dc

attachment

cc: Mr. Harrington

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

TABLE 1

FLOW AND CONTAMINANTS FROM FIVE STEEL MILLS IN 1969 AND 1980 AND REDUCTIONS ACHIEVED THROUGH ENFORCEMENT

STEEL MILL	Parameter	1969		1980	Percent Reduction
(A)	Liquid Volume	330.	MG	0	100.
	Suspended Solids	69,760.	lbs.	0	100.
	Iron	6,800.	lbs.	0	100.
	Ammonia	1,600.	lbs.	0	100.
	Oil & Grease	25,400.	lbs.	0	100.
	Phenols	86.2	lbs.	0	100.
	Cyanide	150.	lbs.	0	100.
(B)	Liquid Volume	38.1	MG	0	100.
	Suspended Solids	13,800.	lbs.	0	100.
	Iron	1,590.	lbs.	0	100.
	Ammonia	650.	lbs.	0	100.
	Oil & Grease	684.	lbs.	0	100.
	Phenols	48.	lbs.	0	100.
	Cyanide	11.4	lbs.	0	100.
(C)	Liquid Volume	43.	MG	0	100.
	Suspended Solids	14,300.	lbs.	0	100.
	Iron	1,020.	lbs.	0	100.
	Ammonia	1,070.	lbs.	0	100.
	Oil & Grease	3,180.	lbs.	0	100.
	Phenols	36.	lbs.	0	100.
	Cyanide	42.	lbs.	0	100.
(D)	Liquid Volume	86.	MG	0	100.
	Suspended Solids	48,200.	lbs.	0	100.
	Iron	14,600.	lbs.	0	100.
	Ammonia	1,080.	lbs.	0	100.
	Oil & Grease	3,660.	lbs.	0	100.
	Phenols	57.	lbs.	0	100.
	Cyanide	67.	lbs.	0	100.
(E)	Liquid Volume	49.	MG	0	100.
	Suspended Solids	20,200.	lbs.	0	100.
	Iron	1,010.	lbs.	0	100.
	Ammonia	745.	lbs.	0	100.
	Oil & Grease	6,550.	lbs.	0	100.
	Phenols	13.5	lbs.	0	100.
	Cyanide	2.4	lbs.	0	100.

Note: Mill (B) was closed in 1980 due to steel production curtailment. Quantities expressed as daily averages.